



1975

# Railroads and Aspects of Social Change in Senegal, 1878-1933

PAUL EDWARD PHEFFER

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# Railroads and Aspects of Social Change in Senegal, 1878-1933

**Abstract**

In a dissertation, or any research subject for that matter, there are generally both narrow and broader queries that can be pursued on a given theme. The narrow theme in this case concerns the "motives for French railroad-building in Senegal." Unfortunately, despite prolonged searches through archival sources available in Senegal, it soon became obvious that there were simply too many missing particulars to be able to complete this story well. Even while searching out the missing information gaps for the narrow theme, however, it also proved possible to gather abundant material for the broader theme of the social impact of the railroad in Senegal, on trade patterns, on labor, and on land— sufficient material at the end of a two-year sojourn in Senegal to write a dissertation regardless of the missing gaps in the narrow theme.

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1975

RAILROADS AND ASPECTS OF SOCIAL CHANGE

IN SENEGAL, 1878-1933

Paul Edward Pheffer

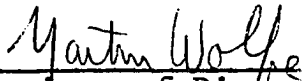
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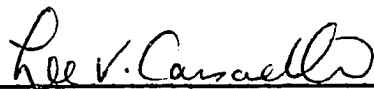
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\_\_\_\_\_  
Supervisor of Dissertation  
Graduate Group Chairman



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Second Reader of Dissertation



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Above all, I wish to dedicate this dissertation to my wife, Marcia, for without her support, help, and encouragement this work would never have seen the light of day.

## INDEX

(\* - Indicates a Reference to a Footnote)

AFRICA AND AFRICANS: See WEST AFRICA; RAILROADS; MERCHANTS;  
URBANIZATION; RAILWAYMEN; LABOR; LAND  
AFRICAN TRADERS AND MERCHANTS: 172-177, 209\*, 216\*, 370,  
384-385, 419\*, 438, 440, 458, 462-463.  
AHMADOU (OF SEGU): 52, 88, 317  
ALGERIA: 24-28, 31-32, 72\*, 91, 93, 225  
ALGERIAN RAILROADS: 23, 31, 138; See also BONE\_GUELMA  
AMBIDEDI: 232, 234, 244  
ANSONGO: 225  
AUTOMOBILE & TRUCK: 1, 20, 244, 269, 455-468  
BAFOULABE: 38, 51  
BAKEL: 233, 238  
BALANDIER, GEORGES: 4, 61  
BAMAKO: 225, 229  
BAMBA, AHMADOU: 267-268  
BAMBARA: 84, 312, 320  
BAMBAY: 233, 254, 264, 405  
BANQUE DE L'AFRIQUE OCCIDENTALE: 265, 470, 483\*  
BAOL: 85, 159, 166-8, 170, 175-6, 182, 194, 234, 241, 250,  
245-5, 262, 264, 291\*  
BATIGNOLLES, SOCIETE DE CONSTRUCTION: 89-95, 98-104, 106,  
114-123, 181, 242, 298, 302.  
BEAU ROCHAS, ALPHE DE: 28  
BELLANGER, DE: 90  
BINGER, G.: 25, 275\*  
BOIS; A.: 89, 99, 167  
BONDU: 84, 87  
BONE-GUELMA RAILROAD: 31, 37, 91-92, 99  
BOUGOUNI: 229, 243, 247  
BOURDIAUX, COLONEL: 108, 119  
BOYE, RAWANE: 398-399, 415, 422\*  
BRIERE DE L'ISLE: 42-54 passim, 115  
BRITISH: 17, 27, 36, 46, 89, 298

BRUN, E.: 90  
CAILLE, R.: 179  
CALMEL, CAPTAIN: 238-239  
CANARD, GOVERNOR: 408-409  
CARDE, GOVERNOR GENERAL: 332  
CARRERE AND HOLLE: 320  
CARRIAGE SERVICE: 387  
CASAMANCE: 18, 164, 264, 420\*  
CASAMANCE RAILROAD: 212\*, 266-7, 297  
CAYOR: 84, 88; LAND IN: 393-398; COMMERCE: 175, 178-180,  
188; CONQUEST: 18-19, 21-22, 33, 40-45, 50, 54-59,  
118, 122, 125, 129-134, 157, 159, 166-167.  
CHAMBERS OF COMMERCE: 191, 200-201, 258, 308, 327-328  
CHAPER REPORT: 137-139  
CHAPRON: 112-113, 139  
CHARDY, COLONEL: 332-333  
CLIMATE: See WEST AFRICA  
CLOUË, ADMIRAL: 53-54  
COASTAL SHIPPING: 157, 193  
COKI: 45, 178  
COMMERCE: 8, 11-16, 34, 43, 58, 130, 157-159, 163-177,  
186-202 passim, 248-249, 254-255; AND PROPERTY: 359-  
361, 366-367, 382-385, 390-391, 405, 413  
COMMITTEE OF COLONIAL PUBLIC WORKS: 234, 476\*  
COMMISSION DE VERIFICATION DES COMPTES DU CHEMIN DE FER  
DE DSL: 104, 106, 135, 196  
COMPAGNIE DU SENEGAL ET DE LA COTE OCCIDENTALE D'AFRIQUE:  
117  
CONAKRY-NIGER RAILROAD: 227, 229-230, 236, 237  
CONGO, BELGIAN; 186, 312-313, 325  
"CONSEILS D'ARBITRAGE": 296-297  
CONVENTION OF 1900: 197-198, 200, 202  
COUNCIL OF NAVAL WORKS: 47  
CREDIT (IN TRADE): 171-172, 439-440  
CRESPIN, J.J.: 173  
CROSS-CULTURAL COMPARISONS: 417\*  
CROWN BONDSMEN: 56-59, 85, 132, 134  
CURRENCY DEVALUATION: 308  
DAHOMEY: 227, 236-237  
DAKAR: 19, 39, 100, 102-103, 105, 115-120, 157-159,  
168-169, 171, 177, 181, 221, 228-230, 233, 240, 246-  
247, 257-258, 259, 402, 404, 411, 443, 469; DISEASE:  
407-408; LABOR: 303, 307, 338\*; LAND: 368, 371, 384,  
389-392

- DAKAR-GOREE (COMMUNE): 117-119, 162  
DAKAR-SAINT LOUIS RAILROAD COMPANY: 98-107, 111-114,  
122-127, 135-140, 157-159, 168-169, 182-183, 192,  
194-202, 234-237, 238, 241-242, 258, 265, 266, 299-  
301, 302-334 passim, 391-392, 398-399, 440-455  
DAKAR-SAINT LOUIS RAILROAD:; CONSTRUCTION: 298-299;  
CONTRACT: 93-98, 111-114, 123, 137, 195-198, 200,  
202, 444-455; GOVERNMENT PURCHASE: 441-442, 452-455;  
PROJECT: 19, 21, 37, 39ff; TRAFFIC: 163ff, 175, 195,  
228, 249, 254-255, 445, 449, 450  
DAKAR-NIGER RAILROAD: 320, 455, 469, 472; See also THIES-  
NIGER RAILROAD  
DAMGA: 163  
DEMBA WAR (SAL, DEMBA WAR): 132, 134, 428\*  
DEPRESSION, GREAT: 266, 269, 438-441, 450-455, 463-467  
DEVES (FAMILY): 173, 176  
DIANDER: 21, 164, 170  
DIARMEO GUEYE: 131  
DIARRING-GATE REGION: 167  
DIOURBEL: 233, 238, 241, 243, 259, 260, 264, 267, 405  
DIOURBEL--TOUBA RAILROAD: 267-268, 309, 459  
DJOLOF: 56, 59, 84, 129-130, 159, 182, 256, 264-266,  
269-271, 483\*, 485\*  
DRESCH, J.: 409  
DUPONCHEL, ADOLPHE: 1, 23, 29-30, 31, 33  
EXPORTS: 163-167, 186-188, 252-258, 438-440, 443-451;  
See also ECONOMIC GEOGRAPHY; PEANUTS  
ECOLE POLYTECHNIQUE: 20, 89  
ECONOMIC GEOGRAPHY: 6-7, 12-16, 34, 72, 163ff, 184-188  
222-223, 225-228, 244-248, 252ff, 261-262, 268-273,  
455-473 passim.  
ECONOMIC HABITATIONS, OFFICE OF: 411  
EDUCATION: 315, 320, 323, 349\*  
EICHTHAL, GUSTAVE D': 90  
EMPLOYEE BENEFITS, RAILROAD: 326-328, 332  
EMPLOYMENT STABILITY, RAILROAD: 302-306, 323-325  
ENGINEERS, FRENCH CIVIL: 24-25, 89-90  
ENGINEERS, MILITARY: 19-22, 62  
ERNEVILLE, D' (FAMILY): 321, 428\*  
ESCALES: 169, 173-182, 254-255, 266, 458-459, 464-466,  
470-473; MORPHOLOGY: 370-371, 381-386, 393-398, 405-  
407; See also individual escales

ETIENNE, PAUL: 135-139, 167, 196  
EUROPEAN COLONISTS: 295-296, 302, 374-375.  
EUROPEANS: See also FRENCH; RAILWAYMEN  
EXPLORATION: 13-14, 29, 47  
FAIDHERBE: 18, 20, 21, 32-33, 34, 39, 67\*, 399, 208\*,  
209\*  
FAIDHERBE BRIDGE (PONT): 120, 387-388, 403  
FAL, AMADI N'GONE (Also Samba Yaye Fal): 57, 59, 134  
FALEME RIVER: 239  
FATICK: 167, 211\*, 234, 285\*  
FERLO: 38, 84, 162, 233, 261  
FINANCES (COLONIAL): 21-22, 45-48, 60, 222-224, 236,  
246-247, 308, 470; See also RAILROAD FINANCES  
FLATTERS EXPEDITION: 24, 32  
FOGEL, R.: 165  
FOUNDIOUGNE: 404  
FRANCO-PRUSSIAN WAR: 21-22, 27  
FRANKEL, H.S.: 6, 262  
FRENCH MERCHANTS IN SENEGAL: 169-177, 207\*, 209\*, 254-258,  
310-311, 380-381, 393, 396, 439, 458-459, 464, 469  
FRENCH PRIVATE COMPANIES IN SENEGAL: 264-265, 296-297,  
310-311, 337\*, 386, 398, 443-455; See also BATIGNOLLES;  
DAKAR-SAINT LOUIS COMPANY; FRENCH MERCHANTS  
FRENCH GUIANA: 295  
FRENCH GUINEA: 162, 227, 236, 244, 263  
FRENCH NATIONAL ASSEMBLY: 45, 52ff, 92-97, 195, 202,  
231, 242-244, 248, 256, 445, 454  
FRENCH RAILROADS: 23, 89-90  
FRENCH WEST AFRICA, GOVERNMENT GENERAL:; FORMATION:  
222-225; INTEREST IN RAILROADS: 225-257 passim, 441-  
442, 448-450, 452-455; LAND POLICY: 378, 380, 393-397  
FREYCINET: 23-24, 36, 38, 55, 93, 96, 359  
FRIOCOURT, INSPECTOR: 106-108, 136  
GALAM: 163  
GALLIENI: 75\*, 229  
GAMBIA:; COLONY: 17, 46, 161, 233, 239-241, 252-253;  
RIVER: 10, 84, 233, 241  
GANDIOLE: 21, 165  
GASCONI, A.: 76\*, 117, 149  
GENERAL COUNCIL, OF SENEGAL: 49, 200, 201, 256, 374, 398  
GENOUILLE, GOVERNOR: 129-134  
GEOGRAPHY (GENERAL): 6, 10-13; See ECONOMIC GEOGRAPHY  
GIRAN, DIRECTOR DN: 320  
GOREE: 16, 18-19, 162, 170-171, 177, 322, 407

GOSSAS: 240, 258, 405  
GOUIN (FAMILY): 89-95  
GOUNBO GUEOUL: 102, 103, 169, 191, 396-397  
"GRAND TRANSVERSAL" PROJECT: 223-231, 244-247  
GUENOTO: 253  
GUET N'DAR: 400  
GUINGUINEO: 240, 241, 257, 258, 264, 405, 410  
GUM TRADE: 18, 169-170, 367  
HANN, BRIDGE: 136, 139-140  
HEALTH AND DISEASE: 12, 13, 15, 49, 99-100, 195, 302-305, 402-408; See YELLOW FEVER  
HIVERNAGE: 99, 109-110, 135, 138, 192  
HOTTINGUER, PHILIPPE & HENRI: 90  
HOUSING:; AFRICAN: 348\*, 401, 405-406, 408-409; EUROPEAN: 304, 401  
HUYBRECHTS, A.: 186  
IBRA FATIM SAR: 132  
IMPERIALISM:; EUROPEAN: 3, 7, 8, 19-21, 67\*, 68\*, 270-273, 295-298, 318, 360-361, 368, 414-416, 469-473; FRENCH: 13-51, 60-63, 88, 91, 159-163, 184-186, 221-248; and LAND: 372-373, 376-377  
INDOCHINA: 89, 236  
INTERNATIONAL LABOR OFFICE: 296  
INVESTMENT, COLONIAL: 45-48, 67\*, 91-98, 198-202, 224  
ISLAM: 3-4, 9, 18, 83-88; See also MOURIDES  
ITALY AND ITALIANS: 89, 127, 298-299, 302  
IVORY COAST: 227, 245-247, 272, 336\*  
JAUREGUIBERRY, ADMIRAL JEAN: 32ff, 40, 48, 50-57, 92  
JOAL: 167, 171  
JOFFRE, GENERAL: 229  
JORET: 93  
KAFFRINE: 240, 251, 261  
KANYA-FORSTNER, A.S.: 23, 32, 46  
KAOLACK: 239-241, 251, 257-260, 264, 388-390, 404, 441, 472, 474\*  
KAYES: 232, 239  
KAYES-NIGER RAILROAD: 161, 199, 221, 225, 228-230, 237-239, 248-252, 299; See also THIES-NIGER RAILROAD  
KEBEMER: 43, 103, 169, 191, 396-397  
KELLE: 40, 128, 179, 180, 191, 396-397  
KEUR MANDOCUBE KHARY: 178  
KHASSO: 18, 84, 87  
KITA: 238, 239



KOLAS: 11, 188, 216\*  
KONG MOUNTAINS: 25, 30, 36, 60  
KEDOUGOU: 262  
KOUMPENTOUM: 261  
KOUNGHEUL: 261  
KOUROÛSSA: 229  
KOUSSANAR: 253, 261  
LABOR: 51-52, 97, 184, 262-264, 295-358, 361-364; ABUSES  
OF: 297, 345; CHINESE: 299, 336; IMPORTED: 127-128,  
295-296, 298-299; LEGISLATION: 296-297, 327-328;  
LOCOMOTIVE ENGINEERS: 316, 322-323; MANUAL: 295, 300,  
301, 306-314; METIER & CRAFTS: 314-315, 323; RAILROAD:  
298ff; RECRUITED (FORCED): 127, 237, 295-299, 301,  
308-309, 311, 377; RECRUITED (2EME PORTION): 297, 299,  
301, 308; RECRUITING, FOREIGN: 312-313; SEASONAL:  
310-311; SHORTAGES: 295ff, 313, 376-377, 379, 404-405;  
SKILLED: 184, 310, 313-324; STRIKES: 330-333; UNIONS  
AND ASSOCIATIONS: 328-333  
LAMINE, MAHMADOU: 161, 317  
LAND: See also PROPERTY; AFRICAN CUSTOM AND ATTITUDES:  
362-366, 372, 373, 375, 394-395, 398-400, 414-416;  
CONCESSIONS: 372-375; EUROPEAN ATTITUDES: 362, 373-375,  
392-396; EXPROPRIATION: 373-374, 377-380, 412-413;  
OCCUPATION: 371, 378, 406, 410-414; SALES: 372, 375,  
378, 381, 399; SHORTAGES (POTENTIAL): 261; SPECULATION:  
359-361, 374-375, 398-399; TENURE: 364-366; URBAN:  
380-392, 396-398, 400-416  
LAT DIOR (DIOP, LAT DIOR): 50, 55-59, 88, 125, 133-134  
LAUDE AFFAIR: 421\*, 436\*  
LAVALLY AND MOLINOS: 93  
LEBANESE MERCHANTS: 413, 424\*, 458, 466, 486\*  
LEBRET: 90  
LEBU: 85, 310, 322, 400, 407-408, 411  
LEFEBVRE CARRIAGES: 57\*, 161  
LEGROS, N.: 36ff, 47-55 passim, 92-93, 95-96, 116  
LESSEPS, FERDINAND DE: 24  
LEYBAR: 100, 121-122, 139-140, 398-399  
LIBERIA, RAILROAD: 275\*  
LIVESTOCK: 187  
LO, FARA BIRAM: 428\*  
LOCOMOTIVES: 181, 283\*  
LORIEUX: 90  
LOUGA (TOWN): 57, 100, 102, 130, 179, 232-233, 264-265,  
396, 396, 411, 423\*, 428

LOUGA-LINGUERE RAILROAD: 265-266, 269-271, 309, 450,  
451, 454-455, 459, 472  
MACHINERY: 9, 313  
MAGE, E.: 34  
"MAITRES DES LANGUES": 174, 384  
MALEME-HODAR: 243  
MALINKE: 84  
MARC MERLE & ROBERT: 76  
MANDING: 84  
MARKETS: 12-13, 187, 382  
MARMIER REPORT: 206\*, 207\*, 233  
MATAM: 163  
MAUREL & PROM: 117, 130  
MAURY, FERDINAND: 265  
M'BACKE: 294\*, 483\*  
M'BAYE, MEISSA: 428\*  
M'BOUR: 411  
MEDINA: 407-408, 411, 461  
MEDINE: 18, 22, 38  
MEKHE: 103, 178, 191, 396-397  
MESSAGERIES MARITIMES: 117  
MIGRATION: 57-58, 183-184, 253-254, 262-264, 269, 295-296,  
309-313, 325, 376  
MILLET: 187, 265  
MINISTRY OF COLONIES: 139, 200, 202, 225, 232, 246-247,  
446-448, 450, 453, 467  
MINISTRY OF FINANCE: 55-56, 95, 104, 124, 447, 453  
MINISTRY OF MARINE AND COLONIES: 32, 36ff, 50-51, 54-55,  
92, 104, 106, 113-114, 118-124  
MOBILITY: See MIGRATION  
MOLLIEN: 179  
MOORS (MAURETANIANS): 18, 42, 56, 74\*, 165, 169  
MOROCCANS: 170, 299  
MOSSI: 227, 297, 308  
MOURIDES (MOURIDYYA): 253-254, 263-264, 267-268, 309  
M'PAL: 44, 100, 102, 106, 178, 186, 392-393, 396  
MYRDAL, GUNNAR: 216\*, 261, 268  
NANGO, TREATY OF: 52  
NAVETANES: 263, 298, 310  
N'DANDE: 33, 40, 57, 130, 132, 134, 168, 179-180  
N'DIAGNE: 178  
'N'DIATIGUIS': 210\*  
N'DIAMBOUR: 57, 129, 131, 393, 398  
N'DIAYE, BOUNA: 266

N'DIAYE, SAMBA: 314  
N'DOULO: 269  
NEUBOURG, LODOIS & GASTON: 427\*  
NEWBURY, COLIN: 23, 32, 172  
N'GAYE MEKHE: See MEKHE  
N'GAHAYES: 234  
N'GUICK-MERINA: 57  
NIANI-OULI: 161, 253, 262  
NIANING: 167, 171  
NIGER RIVER: 11, 13, 34, 36, 88, 161, 170, 221, 228  
NIOMRE: 45, 178  
OCEAN SHIPPING: 157-159, 162-169, 171, 176, 367-369,  
390  
OFFICERS, MILITARY: 18-21, 170, 229, 232, 237-240, 248,  
303, 319, 456  
"OFFICES DU TRAVAIL": 296-297  
OUALIA: 253  
OUALO: 18, 84, 419\*  
OULI: See NIANI-OULI  
PACK ANIMALS: 12, 165-166, 240, 250, 458, 465-466  
PANAMA CANAL: 25, 91-92  
PASSENGER TRAFFIC: 157, 193-194, 261, 290\*, 450, 460-462  
PEANUTS: 15, 162-177, 189-192, 195, 241, 249-255, 261,  
268-269, 271, 306, 308, 385-386, 439-441, 450-468 passim.  
PEASANTS: 373-375, 378, 439-440, 458  
PEREIRE, EMILE: 90  
PETYT, LUCIEN: 317, 347\*  
PEULS: 83, 184-185  
PFEFFERMAN, G.: 324  
PINET-LAPRADE, J.: 20, 21, 39, 115  
PIRE GOUREY: 102, 179, 396-397  
PONTY, WM.: 242-244, 256  
POPULATION DISTRIBUTION: 177-180, 183-188, 259-264, 271  
PORTERAGE, HUMAN: 165, 297  
PORTS: 168-169, 177ff, 366-370, 386, 402, 410; See also  
individual ports by name  
POUT: 102, 106, 125-126, 178  
PRESTATIONS: 182, 298, 309  
PROPERTY: 115-122, 129, 359-360, 379-380; COLONIAL LAW:  
372-381, 393-396, 399; COMMUNAL: 395-396; RAILROAD:  
371, 398-399; RAILROAD IMPACT: 369-372; SURVEYING:  
381-384; VALUES: 366, 368-371

PROTECTORATE: 181, 375, 393  
PUBLIC WORKS: 110-111, 181-182, 222-225, 242-244, 246-247,  
296, 298, 368, 391, 402-403, 407  
RAFFENEL, ANNE: 34  
RAILROADS: 1-3, 6-10, 30, 31, 163ff; See also entries  
under individual railroads; CONSTRUCTION: 24, 25, 48,  
90, 98-122, 135-140, 234-248; COORDINATION: 441-455;  
EXPENSES: 195-198, 230-231, 445, 475\*; EXPRESS: 157,  
461; FINANCES: 91-99, 105-106, 194-202, 222-223, 236-  
238, 242-247, 316-317, 443-455, 460, 467; ORGANIZATION:  
299-301; PROJECTS: 33-35, 37ff, 114-120, 167, 221ff,  
264ff; PSYCHOLOGICAL: 9-10; RATES & FARES: 158-159,  
188-194, 229-231, 246, 249, 257, 271, 287\*, 440-453,  
461, 467; RECEIPTS: 157, 450-451; SERVICE: 157, 180,  
20, 249-250, 461-462; SOCIAL IMPACT: 1-10, 124-134,  
174-177, 261-262, 269-270, 325, 386-392, 468-473;  
TERMINALS AND FACILITIES: 115-121, 159, 180, 359-360,  
383, 386-392; TRAFFIC: 157-159, 163-169, 186-188,  
191-194, 201, 245-246, 249-252, 257-258, 442-444,  
450, 459-461  
RAILWAYMEN:; AFRICAN: 299-301, 305, 306, 316-325, 330-  
335, 344\*, 346\*, 356-358, 409-410; EUROPEAN: 128, 201,  
250, 299-306, 316-319, 329-330, 340\*, 353\*, 402  
RAO: 43, 316  
RAZY, ALFRED: 107-111, 139  
RECEPTION COMMISSIONS: 105-109, 122, 136  
REUNION: 93  
RICE: 187, 188, 246  
RIP: 161, 264  
RIVERS: 10-13, 15-17, 277\*  
ROADS: 21, 22, 181-183, 265, 282, 457, 460-461, 463-466  
RODRIGUES-HENRIQUES, ABRAHAM: 90  
ROLAND-GOSSELIN: 90  
ROTHSCHILD FAMILY; 90  
ROUGIER, COLONEL: 232-234, 279\*  
ROUME, ERNEST: 225-227, 232, 233, 278\*, 406  
RUFISQUE: 100, 102, 105, 109, 110, 115, 136, 157, 168,  
171, 177, 181, 191-192, 240, 258-260, 368, 402, 410;  
FORMATION: 384; MORPHOLOGY: 383, 386-387  
SAHARA: 11, 481\*; See also TRANSSAHARAN  
SAINT-LOUIS: 16, 19, 39-40, 100, 102-103, 106, 110, 113,  
120-122, 127, 130, 157-159, 169-170, 181, 228, 231, 244,  
255-260, 266, 312, 320-323, 368, 383, 387-388, 397-398,  
400, 402-403, 409, 410

SALOUM: See also SINE-SALOUM  
SAMBA LAOBE (FAL, SAMBA LAOBE): 56ff, 125, 129-134, 145  
SAMBE: 260  
SARAKOLE: 84, 161, 312, 317, 320, 322-323, 409  
SARRAUT, ALBERT: 246-247  
SEGREGATION, RACIAL: 400-408, 411-413  
SEGU, EMPIRE: 34, 52, 87-88, 185  
SENEGAL:; COLONY: 16ff, 25, 32ff, 87, 92, 99, 106, 117, 125-127, 259-260; GOVERNMENT: 111, 122-124, 158, 167-168, 184-185, 194, 242, 255, 265-268, 309, 321-322, 372-376, 380, 392-393; REGION: 3-13, 47, 83-88, 99-100; RIVER: 10, 17, 34-36, 38, 54, 84-87, 158, 159, 162, 163, 169-170, 173, 228-232, 234, 255, 262  
SENEGAMBIA, SOCIAL STRUCTURE: 3-6, 83-88, 315, 362-364, 418\*  
"SENTENCE ARBITRALE": 196-197  
SERER (INCLUDING NONE & DIOBA): 85, 125, 264  
SERVICE DE TRAVAUX NEUFS: 301  
SIERRA LEONE: 17, 170  
SINE, See also SINE-SALOUM:  
SINE-SALOUM: 18, 57, 84, 161, 164, 167, 175, 177, 253, 257, 264  
SLAVE TRADE: 3, 13, 24, 87, 363, 366-367  
SLAVES: 128, 131, 184, 186, 315, 343\*, 375, 408-409  
SOCIAL STRUCTURE AND CHANGE: 1-10, 414-416; See also RAILROADS, SOCIAL IMPACT  
SOCIETES INDIGENES DE PREVOYANCE: 440, 486\*  
SOGUER: 45, 57, 178  
SOLEILLET, PAUL: 29, 47  
SOR: 120  
SUDAN: 10-12, 25-28, 34-37, 47, 50, 87, 159, 161, 167, 221-258 passim, 299, 308, 456, 469  
SURET-CANALE, J.: 438 (quote)  
SURVEILLANCE ENGINEER: 104, 107-113, 136  
TALARY: 238  
TAMBACOUNDA: 236, 238, 240, 244, 251, 253, 261  
TAMBAOURA: 239  
TAXES: 186, 216\*, 224, 365, 377, 385  
TELEGRAPH: 19, 21, 177-178  
THIES (TOWN): 44, 125, 132, 167, 178-181, 232-234, 242, 255, 259, 371, 392-393, 396, 404, 412-413, 487\*  
THIES-KAYES RAILROAD:; CONSTRUCTION: 241-244, 248, 404-405; IMPACT: 241-252 passim, 252-264, 388; OPERATIONS:

200, 241-243, 248-252, 300-301, 371, 456; ORGANIZATION:  
300-301, 304-308 passim, 318, 321, 327-335 passim;  
PROJECT: 168, 175, 177, 181, 194, 197, 199, 202, 221ff  
THIES-NIGER RAILROAD: 250-252, 440-455 passim, See also  
THIES-KAYES RAILROAD  
TIVAOUANE: 102, 109, 131-132, 167, 178, 180, 182, 191,  
214\*, 233, 255, 259, 396, 407, 411  
TOUBA: 268-269  
TRAM LINES ( DECAUVILLE): 182, 385-387, 390  
TRANSSAHARAN PROJECT: 23-38, 45, 56, 225  
TRAZ, EDOUARD DE: 98  
TUKOLOR: 18, 34, 83, 312, 317-318, 320, 409  
TURREL, ADOLPHE: 136-137  
UMAR, EL HADJ: 87-88, 314  
UNION COLONIALE FRANCAISE: 201-202, 281  
UNION GENERAL BANK: 55  
UPPER SENEGAL RAILROAD: 34-54 passim, 95, 127; later  
KAYES-NIGER RAILROAD  
UPPER VOLTA: See also MOSSI  
URBANIZATION: 179, 259-260, 359, 371, 376-377, 400, 406,  
413-414, 418\*; AFRICAN LIVING CONDITIONS: 382-383,  
403-414; FIRE HAZARDS: 401, 418\*; MUNICIPAL ORDINANCES:  
400-402, 408  
VALLON, A.: 55  
VAN VOLLENHOVEN, J.: 221, 293\*  
VAUBOURG, H.: 40-42, 157, 159, 162-163, 168  
VILLARD, A.: 161, 162  
WAGES AND SALARIES: 296, 300, 305, 307-308, 311, 324,  
328, 339\*, 346\*  
WALTER PROJECT: 44-45, 92, 138, 157, 159, 162-163, 178-  
179  
WATER AND WELLS: 12, 168, 180-181, 261, 266, 363, 386,  
390  
WEST AFRICA: 3-16, 20-21, 89, 97, 295; CLIMATE: 7, 11,  
99-100, 302; See also HIVERNAGE  
WILBROD-CHABROL, F.: 90  
WOLOF: 83-85, 253, 312, 315, 364, 409  
WORK CONDITIONS, RAILROADS: 296, 303-306, 310, 319-320  
WORK CREWS: 311  
WORLD WAR I: 244-245, 248-249, 265, 444  
YELLOW FEVER: 54, 100, 303, 318, 402-404, 458  
ZUIGUINCHOR: 407

## TABLE OF CONTENTS

ACKNOWLEDGEMENTS . . . . .	iii
INDEX . . . . .	vi
BIBLIOGRAPHY . . . . .	xviii
PREFACE . . . . .	L
CHAPTER I. THE INCEPTION OF SENEGALESE RAILROADS . . . . .	1
CHAPTER II. CONSTRUCTION OF THE DAKAR- ST. LOUIS . . . . .	89
CHAPTER III. THE DSL'S IMPACT, 1885 to 1911 . . . .	157
CHAPTER IV. PENETRATION AND ECONOMIC DEVELOPMENT-THE THIES-KAYES . . . . .	221
CHAPTER V. RAILROAD LABOR . . . . .	295
CHAPTER VI. RAILROADS AND AFRICAN LAND . . . . .	359
CHAPTER VII. RETREAT INTO A NARROWER PATTERN . . . .	438
TABLES . . . . .	489
GLOSSARY . . . . .	535

## BIBLIOGRAPHY

### Archival Sources

Archives Nationales (Direction des Archives de France), Paris. Pertinent dossiers in the BB<sup>4</sup>, DD<sup>2</sup>, F14, and both classified and unclassified portions of the 89AQ series; Noirot papers in API48; 65 AQ/ E-267.

Archives Nationales (Direction des Archives de France), Section Outre-Mer, Mainly the Senegal XII, Senegal I, and Affaires Politiques series with forays into Senegal IV, Senegal XIV, Senegal XV, Afrique II, and Afrique XII. Most important were some 55 unclassified cartons and additional dossiers and registers on colonial public works (under the rubrique: FOM,TP).

Archives Nationales de la République du Sénégal, Dakar. Mainly the O, 1G, 2G, 2B, K, L, P, 1P, 6P, Q, 22G series, both in the "Charpy series" and the "fonds modernes," with forays into the 1D, 5D, 6E, 3G, 4G, 10G, 13G, 17G, 21G, H, 4P, and 1Z series. Most important were some 152 unclassified cartons and at least 55 additional registers and dossiers on railroads, public works, commerce, communes, property, etc. (under the rubrique: SARS, DCF).



Archives du Ministère de la Marine (Service Historique de la Marine), Paris. GG<sup>1</sup>- carton 45.

Compagnie de Dakar a Saint-Louis, Paris, Unclassified company archives.

C.R.D.S. (ex-IFAN), St. Louis, Senegal. Documents still available at St. Louis.

IFAN, Dakar, Senegal. Newspaper collection (see next section of bibliography).

Régie des chemins de fer du Sénégal. Unclassified archives at Thiès and Dakar.

Periodicals Consulted Systematically

Annuaire du Sénégal - 1880, 1887, 1888, 1892, 1901, 1902.

l'AOF - 1907-1927.

Bulletin Administrative du Sénégal - 1879-1908.

Bulletin de la Chambre de Commerce de Saint-Louis - 1892-1902.

Bulletin Mensuel de la Chambre de Commerce de Dakar - 1925-1937.

Conseil Général (later "Conseil Colonial") - 1885-1926.

Dépêche Coloniale - 1906-1914.

Democratie du Sénégal - 1913-1914.

Journal Officiel du Sénégal - 1905-1934.

Journal Officiel de l'AOF - 1905-1934.

Moniteur du Sénégal et Dépendances - 1881-1892.

l'Ouest Africain Français - 1922-1932.

Petit Sénégalais - 1886.

Reveil du Sénégal - 1886-1887.

Secondary Works Consulted

Adam, Jean : L'arachide. Paris, 1908.

Adanson, Michel : A Voyage to Senegal, the Isle of Goree,  
and the River Gambia. trans. from French, London, 1759.

Adeleye, R. A. : Power and Diplomacy in Northern Nigeria,  
1804-1906. London, 1971.

Akpala, Agwu : "Problems of Initiating Industrial Labour  
in Preindustrial Society," Cahiers d'Etudes Africaines,  
XII (1972), no. 46, pp. 291-301.

Amir, Samir : Le monde des affaires sénégalais. Paris,  
1969.

Andry, Commandant : Etude sur le chemin de fer de Kayes a  
Bamakou du Sénégal à Niger. published excerpt from the  
Bulletin de la Société de Géographie Commerciale de  
Paris, 1893, n° 15, pp. 321-354.

Anfreville de la Salle, Dr. d' : Notre vieux Sénégal. Son  
état actuel, ce qu'il peut devenir. Paris, 1909.

Angrand, Armand-Pierre : Les lébous de la presqu'île du  
Cap-Vert. Dakar, [1946].

AOF. Government General : Le chemin de fer de Thiès au  
Niger. Paris, 1931.

\_\_\_\_\_ : Chemins de fer en AOF. 1. DSL-Thiès a Kayes. Paris, 1906.

\_\_\_\_\_ : Comité Supérieur d'Hygiène et de Salubrité Publique . . . Session du 17 au 21 juin 1904. Paris, 1904.

\_\_\_\_\_ : Inspection Générale des Travaux Publics : L'équipement économique des colonies françaises-Généralités -Les voies de communication et les transports-Les chemins de fer. n.d. [1914], Pp. 18.

\_\_\_\_\_ . Inspection Générale des Travaux Publics : Note sur les difficultés rencontrées au réseau Thiès-Niger depuis sa création et sur les mesures prises en vue d'une exploitation rationnelle de ce réseau. n.d. [1927], Pp. 31.

\_\_\_\_\_ : Recensement de la population du Sénégal en 1904. St. Louis, Senegal, 1904.

Aumont, André : Notes sur le Sénégal et son commerce. Exposition Universelle 1889. Paris, May 1889 (references in this dissertation pertain to galley proofs dated March 10, 1889, found in ANF, 148AP2.

Balandier, Georges : Afrique ambiguë. Paris, 1957.

\_\_\_\_\_ : The Sociology of Black Africa. Social Dynamics in Central Africa. trans. by Douglas Garman. New York, 1970.

\_\_\_\_\_ : "Urbanism in West and Central Africa: The scope and aims of research," in Social Implications of

Industrialization and Urbanization in Africa South of the Sahara. ed. by the International African Institute (Under the auspices of UNESCO), Paris, 1956, pp. 495-510.

Barratier, Lt. Colonel : A travers l'Afrique. Paris, n.d. [1910].

Barry, Boubacar : Le royaume du Waalo. Le Sénégal avant la conquête. Paris, 1972.

Bascom, William : "Urbanism as a Traditional African Pattern," The Sociological Review. VII (1959), no. 1, pp. 29-43.

Bauer, P. T. : West African Trade: A Study of Competition, Oligopoly and Monopoly in a Changing Economy. Cambridge 1954.

Beau de Lomenie, E. : Les responsabilités des dynasties bourgeoises. Vol. II, Paris, 1947.

Behrman, Lucy : Muslim Brotherhoods and Politics in Senegal. Cambridge, Mass., 1970.

\_\_\_\_\_ : "The Political Significance of the Wolof Adherence to Muslim Brotherhoods," African Historical Studies, I (1968), pp. 60-77.

Benveniste, Corinne : Les relations Dakar-Saint Louis. Le rail et la route. DES. University of Dakar, 1967.

Berg, Elliot J. : "Backward-sloping Labor Supply Functions in Dual Economies: The Africa Case," Quarterly Journal of Economics, LXXV (Aug. 1961), no. 3,

- pp. 468-492.
- Berge, François : "Le Sous-secrétariat et les Sous-secrétaires d'Etat aux colonies: histoire de l'administration coloniale," Revue Française d'Histoire d'Outre-Mer. XLVII (1960), pp. 301-306.
- Betts, Raymond F. : Assimilation and Association in French Colonial Theory, 1890-1914. New York, 1961.
- \_\_\_\_\_ : "The Establishment of the Médina in Dakar, Senegal, 1914," Africa, XLI (1971), no. 2, pp. 143-152.
- Binger, Captain L. : Du Niger au Golfe de Guinée par le Pays de Kong et le Mossi (1887-1889). Vol II. Paris, 1892.
- Blanchet, Marcel : Géographie des chemins de fer. Abbeville, 1942.
- Blet, Henri : Histoire de la colonisation française. 3 vols. Paris, 1947-1950.
- Boahen, A. Adu : Britain, the Sahara, and the Western Sudan, 1788-1861. Oxford, 1964.
- Bohannan, Paul : Africa and Africans. Garden City, 1964.
- \_\_\_\_\_, ed. : Law and Warfare. Garden City, 1967.
- Bohannan, Paul and Dalton, George, eds. : Markets in Africa. Evanston, 1962.
- Boilat, Abbé P-D. : Esquisses sénégalaises. Paris, 1853.
- Bois, Commandant [Alexis] : Sénégal et Soudan. Travaux publics et chemins de fer. Paris, 1886.
- \_\_\_\_\_ : De Dakar au Niger. Paris, 1887.

- Bouche, Denise : Les villages de liberté en Afrique noire française, 1887-1910. Paris, 1968.
- Bourde, Paul : "La France au Soudan. I. Le chemin de fer du Sénégal au Niger," Revue des Deux Mondes, VI, December 1, 1879, pp. 659-688.
- Bourrat, Charles : Les chemins de fer en Afrique et leur rôle dans l'expansion coloniale. thèse du doctorat. University of Paris. Perpignan, 1910.
- Boutillier, Jean-Louis : "Les captifs en A.O.F. (1903 - 1905)," Bulletin de l'IFAN, XXX (1968), Series B, no. 2, pp. 513-535.
- Bouvier, Jean : Les deux scandales de Panama. Mesnil-sur-l'Estrée, 1964.
- Brant, E. D. : Railroads of North Africa. New York, 1972.
- Brasseur, Gerard : Le problème de l'eau au Sénégal (Etudes sénégalaises, no. 4). St. Louis, Senegal, 1952.
- Brasseur, Paule : Bibliographie générale du Mali. Dakar, 1964.
- Brigaud, Félix : Histoire moderne et contemporaine du Sénégal (Etudes sénégalaises, no. 9, part 11). St. Louis, Senegal, 1966.
- \_\_\_\_\_ : Histoire traditionnelle du Sénégal (Etudes sénégalaises, no. 9, part 9). Amsterdam, 1970.
- Brook, Ian : The One-eyed Man is King. New York, 1967.
- Brunschwig, Henri : L'avènement de l'Afrique noire. Paris,

1963.

\_\_\_\_\_ : Mythes et réalités de l'impérialisme coloniale français, 1871-1914. Paris, 1960.

\_\_\_\_\_ : "Note sur les technocrates de l'impérialisme français en Afrique noire," Revue Française d'Histoire d'Outre-Mer, LIV (1967), nos. 194-197, pp. 171-187.

\_\_\_\_\_ : "Politique et économie dans l'empire français d'Afrique noire, 1870-1914," Journal of African History, XI (1970), no. 3, pp. 401-417.

Buell, Raymond Leslie : The Native Problem in Africa. 2 vols. New York, 1928.

Caillé, René : Journal d'un voyage à Tombouctou et à Jenne dans l'Afrique centrale. 2 vols. reprint, Paris, 1965.

Calmel, Captain : Le chemin de fer du Sénégal au Niger. published excerpt from Revue du Génie, October 1896, pp. 289-360.

Camara, Camille : Saint-Louis-du-Sénégal: Evolution d'une ville en milieu africain. Dakar, 1968.

Cameron, Rondo E. : France and the Economic Development of Europe, 1800-1914. Princeton, 1961.

Carpot, Dr. Charles : La fièvre jaune. Epidémie de l'année 1900 à Saint-Louis. Bordeaux, 1901.

Carrère, Frédéric and Holle, Paul : De la Sénégamie française. Paris, 1855.

Carson, Patricia : Materials for West African History in

- French Archives. London, 1968.
- Chailley, Marcel : Histoire de l'Afrique Occidentale Française, 1639-1959. Paris, 1968.
- Charbonneau, Jean and Rene : Marchés et marchands d'Afrique. Paris, 1961.
- Charpy, Jacques : La fondation de Dakar. Paris, 1958.
- Charpy, Jacques and Faure, Claude : Répertoires des archives de l'AOF. Rufisque, 1954-1958.
- Chautard, Jean : Les chemins de fer de l'Afrique Occidentale Française. Paris, 1909.
- Chorley, Richard J. and Haggett, Peter, eds. : Socio-Economic Models in Geography. London, 1967.
- Church, R. J. Harrison : The Railways of West Africa - a geographical and historical analysis. Ph.D. dissertation. University of London, 1943.
- \_\_\_\_\_ : West Africa. A Study of the Environment and of Man's Use of it. 2nd ed., New York, 1968.
- \_\_\_\_\_ : "West African Urbanization: A Geographical View," The Sociological Review, VII (1959), no. 1, pp. 15-28.
- Clapham, J. H. : Economic Development of France and Germany, 1815-1914. 4th ed., Cambridge, 1966.
- Cohen, William B. : Rulers of Empire: The French Colonial Service in Africa. Stanford, 1971.
- Coleman, Terry : The Railway Navvies. Harmondsworth, 1969.
- Colin, Dr. : "Le commerce sur le Haut Sénégal," Bull. SGC



- de Paris, Oct. 1882-Oct. 1883, pp. 159-180.
- Cornevin, Robert and Marianne : Histoire de l'Afrique.  
Paris, 1964.
- Cosnier, Henri : L'ouest africain français: ses ressources  
agricoles, son organisation économique. Paris, 1921.
- Crosson-Duplessis, Captain : Le chemin de fer de Kayes au  
Niger. excerpt from Bulletin de la Société Française  
des Ingénieurs Coloniaux, Paris, 1904, Pp. 99.
- Crowder, Michael : Senegal: A Study of French Assimilation  
Policy. London, 1967.
- \_\_\_\_\_ : West Africa Under Colonial Rule. Evanston, 1968.
- \_\_\_\_\_, ed. : West African Resistance London, 1971.
- Cruise O'Brien, Donal B. : The Mourides of Senegal. Oxford,  
1971.
- Cruise O'Brien, Rita : White Society in Black Africa. The  
French in Senegal. Evanston, 1972.
- Curtin, Philip, ed. : African and the West. Intellectual  
Responses to European Culture. Madison, 1972.
- \_\_\_\_\_ : The Image of Africa: British Ideas and Action,  
1780-1850. Madison, 1964.
- Dauzet, Pierre : Le siècle des chemins de fer en France  
(1821-1938). Fontenay-aux-Roses (Seine), 1948.
- Davies, Ioan : African Trade Unions, Harmondsworth, 1966.
- Delavignette, Robert : Service africain. Paris, 1946.
- Deschamps, Hubert : L'Europe découvre l'Afrique. Paris,

1967.

- \_\_\_\_\_ : Le Sénégal et la Gambie. Paris, 1964.
- Désiré-Vuillemin, Geneviève : Essai sur le gommier et le commerce de la gomme dans les escales du Sénégal. DES. Montpellier, 1962.
- Dessertine, André : "Naissance d'un port: Kaolack des origines a 1900," Annales Africaines, VII (1960), pp. 225-259.
- \_\_\_\_\_ : Un port secondaire de la côte occidentale d'Afrique: Kaolack. Etude historique, juridique, et économique des origines à 1958. edited by the Chamber of Commerce of Kaolack.
- Devèze, Emile : Formation professionnelle. Cours de personnel, 1956-1957. Government General, AOF. Direction Fédérale des Chemins de Fer de l'AOF. Thiès, n.d., [1956].
- Diagne, Pathé : Pouvoir politique traditionnel en Afrique. Paris, 1967.
- Diop, Abdoulaye Bara : Société toucouleur et migration. Dakar, 1965.
- Diop, Cheikh Anta : The Cultural Unity of Negro Africa. trans. Paris, 1959.
- Diop, Majhemout : Histoire des classes sociales dans l'Afrique de l'ouest. 2. Le Sénégal. Paris, 1972.
- Doukas, Kimon A. : The French Railroads and the State. New York, 1945.

d'Oxoby, Jean Daramy : Le Sénégal en 1925. Conseil Colonial du Sénégal. Paris, 1925.

Dresch, Jean : "Villes d'Afrique occidentale," Cahiers d'Outre-Mer, 3rd year, July-Sept 1950, no. 11, pp. 200-230.

Duchêne, Albert : Histoire des finances coloniales de la France. Paris, 1938.

Dupon, Jean François : "Tambacounda, capitale du Sénégal orientale," Cahiers d'Outre-Mer, no. 66, April-June 1964, pp. 175-214.

Duponchel, Adolphe : Le chemin de fer trans-saharien. Jonction coloniale entre l'Algérie et le Soudan. Paris, 1879.

\_\_\_\_\_ : Lettre à M. le Président et a Messieurs les membres de la Commission Supérieure du Trans-Saharien. Montpellier, 1880.

Epinay, Gilbert : Les droits domaniaux de l'état et la propriété foncière autochtone au Sénégal. thèse du doctorat. University of Paris, 1944.

Exposition Universelle de 1900 : Le Sénégal, organisation politique, administration, finance, travaux publics. Paris, 1900.

Faidherbe, Louis : Le Sénégal. La France dans l'Afrique occidentale. Paris, 1889.

\_\_\_\_\_ : Le Soudan Française, Chemin de fer de Médine au Niger. Lille, 1881.

- Faur, Jean-Claude : La mise en valeur ferroviaire de l'AOF, 1880-1939. thèse du doctorat. University of Paris, 1969.
- Faure, Claude : Histoire de la Presqu'île du Cap-Vert et des origines de Dakar. Paris, 1914.
- Feis, Herbert : Europe the World's Banker, 1870-1914. New York, 1930.
- Fieldhouse, D.K. : Economic and Empire, 1830-1914. Ithaca 1973.
- Firth, Raymond, ed. : Themes in Economic Anthropology. London, 1967.
- Flis-Zonabend, Françoise : Lycéens de Dakar. Paris, 1968.
- Fogel, Robert W. : Railroads and American Economic Growth: essays in econometric history. Baltimore, 1964.
- Fougeyrollas, Pierre : Modernisation des hommes: l'exemple du Sénégal. Paris, 1967.
- Fouquet, Joseph : La traite des arachides dans le pays de Kaolack et ses conséquences économiques, sociales, et juridiques (Etudes sénégalaises, no. 8). St. Louis, Senegal, 1958.
- France. Ministry of Colonies : Documents relatifs au chemin de fer de Dakar à Saint Louis. Paris, 1914.
- \_\_\_\_\_. Ministry of Colonies : Statistiques coloniales. 1895-1910.
- \_\_\_\_\_. Ministry of Commerce, Industry, and Colonies: Statistiques coloniales. 1888-1892.

- \_\_\_\_\_. Ministry of Marine and Colonies : Tableaux de population, de culture, de commerce et de navigation. 1878-1881
- \_\_\_\_\_. Ministry of Marine and Colonies: Statistiques coloniales. 1882-1887.
- Frankel, S. H. : Capital Investment in Africa. Oxford, 1938.
- \_\_\_\_\_ : The Economic Impact on Under-Developed Societies. Cambridge, Mass., 1953.
- \_\_\_\_\_ : The Railway Policy of South Africa. Johannesburg, 1928.
- Freycinet, Charles de : Souvenirs, 1878-1893. Paris, 1913.
- Fromm, Gary, ed. : Transport Investment and Economic Development. The Brookings Institution. Washington, 1965.
- Gaffarel, Paul : Le Sénégal et le Soudan Français. 6th ed. Paris, 1898.
- Gailey, Harry : A History of the Gambia. London, 1964.
- Gamble, David : The Wolof of the Senegambia. London, 1957.
- Ganier, Germaine : "Lat Dyor et le chemin de fer de l'arachide (1876-1886)," Bulletin de l'IFAN, XXVII (1965), Series B, nos. 1-2, pp. 223-281.
- Gann, Lewis H. and Duignan, Peter, eds. : Colonialism in Africa, Vol. I, 1879-1914, Vol. II, 1914-1960. Cambridge, 1969, 1970.
- Gasconi, Alfred : La propriété au Sénégal. Paris, 1884.

- Geismar, L. : "L'action gouvernementale et les coutumes indigènes en AOF," Outre-Mer, Revue Générale de Colonisation, 1934, 2nd trimester, pp. 157-166.
- \_\_\_\_\_ : Recueil des coutumes civiles des races du Sénégal.  
Saint-Louis, Senegal, 1933.
- Gide, André : Travels in the Congo. trans. by Dorothy Bussy. Berkely, 1962.
- Gifford, Prosser and Louis, Wm. Roger, eds. : France and Britain in Africa. New Haven, 1971.
- Girardet, Raoul : L'idée coloniale en France, 1871-1962.  
Paris, 1972.
- \_\_\_\_\_ : La société militaire dans la France contemporaine.  
Paris, 1953.
- Glaab, Charles N. : Kansas City and the Railroads. Madison,  
1962.
- Godfernaux, Raymond : Les chemins de fer aux colonies françaises. Paris, 1911.
- \_\_\_\_\_ : Aperçu de l'évolution des chemins de fer français de 1878 à 1928. Paris, 1928.
- Gorer, Geoffrey : Africa Dances. New York 1962.
- Gravier, Gabriel : Note biographique sur Paul Soleillet.  
Rouen, 1886.
- Gros. Jules : Les voyages et découvertes de Paul Soleillet dans le Sahara et dans le Soudan en vue d'un projet d'un chemin de fer transsaharien. Paris, 1881.

- Guèye, Lamine : L'itinéraire africain. Paris, 1966.
- Guiraud, Xavier : L'arachide sénégalaise. Paris, 1937.
- Hardy, Georges : L'enseignement au Sénégal de 1817 à 1854.  
Paris, 1920.
- \_\_\_\_\_ : Histoire de la colonisation française. Paris, 1953.
- \_\_\_\_\_ : Histoire sociale de la colonisation française.  
Paris, 1953.
- \_\_\_\_\_ : La mise en valeur du Sénégal de 1817 a 1854.  
Paris, 1921.
- \_\_\_\_\_ : Le Sahara. Paris, 1930.
- Hallett, Robin : The Penetration of Africa, European  
Exploration in North and West Africa to 1815. New York,  
1965.
- Hargreaves, John D. : "Assimilation in Eighteenth-Century  
Senegal," Journal of African History, VI (1965), no. 2,  
pp. 177-184.
- \_\_\_\_\_ : France and West Africa. New York, 1969.
- \_\_\_\_\_ : Prelude to the Partition of West Africa. London,  
1963.
- Haskin, Frederic : The Panama Canal. New York, 1913.
- Hauser, A. : "The Mechanization of Agriculture in Tropical  
Africa," in Social Implications of Industrialization  
and Urbanization in Africa South of the Sahara. Edited  
by the International African Institute (under the  
auspices of UNESCO), Paris, 1956, pp. 546-556.

- Hazlewood, Arthur : Rail and Road in East Africa. Oxford, 1964.
- Hervet, G. : Le commerce extérieur de l'Afrique Occidentale Française. thèse du doctorat. University of Paris, 1911.
- Hill, Polly : Rural Haussa: a village and a setting. Cambridge, 1962.
- \_\_\_\_\_ : Studies in Rural Capitalism in West Africa. Cambridge, 1970.
- Historique de la Mission de Thiès (Mission catholique), 1886-1920. typed copy in National Archives of Senegal.
- Hopkins, A. G. : An Economic History of West Africa. London, 1973.
- Hubler, J. : "De St. Louis à Joal par terre," Bull. SGCB, May 18, 1885, no. 10, pp. 294-301; June 1, 1885, no. 11, pp. 321-333.
- Huybrechts, André : Transports et structures de développement au Congo. Paris, 1970.
- Idowu, H. O. : "Assimilation in 19th Century Senegal," Bulletin de l'IFAN, XXX (1968), Series B, no. 4, pp. 1422-1447.
- \_\_\_\_\_ : "The Establishment of Elective Institutions in Senegal, 1869-1880," Journal of African History, IX (1968), no. 2, pp. 261-277.
- Johnson, G. Wesley Jr. : The Emergence of Black Politics in Senegal. Stanford, 1971.



- Joucla, E. : Bibliographie de l'Afrique Occidentale Française. Paris, 1937.
- Julien, Charles A., ed. : Les techniciens de la colonisation (XIX<sup>e</sup>-XX<sup>e</sup> siècles). Paris, 1947.
- July, Robert : "The Politics of Assimilation in Senegal," in The Origins of Modern African Thought. Edited by Robert July. New York, 1968, pp. 234-253.
- Kanya-Forstner, A. S. : The Conquest of the Western Sudan: A Study in French Imperialism. Cambridge, 1969.
- Kanya-Forstner, A. S. and Andrew, C. M. : "The French 'Colonial Party': Its Composition, Aims and Influence, 1885-1914," The Historical Journal, XIV (1971), no. 1, pp. 99-128.
- Kellett, John : The Impact of Railways on Victorian Cities. London, 1969.
- Kermorgant, Dr. A. : "Epidémie de fièvre jaune du Sénégal, du 16 avril 1900 au 28 février 1901," Annales d'Hygiène et de Médecine Coloniales, III (July-August-Sept 1901), pp. 326-432.
- Kindleberger, Charles P. : Economic Growth in France and Britain, 1851-1950. New York, 1964.
- Klein, Martin A. : "African Social History," African Studies Review, XV (April 1972), no. 1, pp. 97-112.
- \_\_\_\_\_ : Islam and Imperialism in Senegal. Edinburgh, 1968.

- Lajard de Puyjalon, Jacques : L'influence des Saint-Simoniens sur la réalisation de l'Isthme de Suez et des chemins de fer. Paris, 1926.
- Lambie, Joseph T. : From Mine to Market. New York, 1954.
- Landes, David : Bankers and Pashas. Cambridge, Mass., 1958.
- Lemaire, Eugène: Les chemins de fer coloniaux français, non compris l'Algérie et la Tunisie. Poitiers, 1900.
- Le Roy, Etienne and Niang, Mamadou : Systèmes fonciers africaines. Le régime juridique des terres chez les Wolof ruraux au Sénégal. Equipe de Recherche en Anthropologie Juridique Africaine, associée au C.N.R.S. sous le no. 201, Laboratoire d'Anthropologie Juridique, Paris, n.d. [1971].
- Levtzion, Nehemiah : Muslims and Chiefs in West Africa. Oxford, 1968.
- Lewis, Martin D. : "One Hundred Million Frenchmen: The Assimilationist Theory in French Colonial Policy," Comparative Studies in Society and History, IV (Jan 1962), pp. 129-153.
- Lewis, William H., ed. : French-Speaking Africa. The Search for Identity. New York, 1965.
- Little, Kenneth : West African Urbanization. Cambridge, 1966.
- Lombard, Jacques : Autorités traditionnelles et pouvoirs européens en Afrique noire. Le déclin d'une aristocratie sous le régime colonial. Paris, 1967.

- Lombard, J. : Géographie humaine (Etudes sénégalaises, no. 9- Connaissance du Sénégal, part 5), Saint-Louis, Senegal, 1963.
- Loti, Pierre : Le roman d'un spahi. Paris, 1947 (published originally in 1881).
- Lloyd, Peter C. : African in Social Change: Changing Traditional Societies in the Modern World. revised ed. Harmondsworth, 1969.
- Lloyd, Peter C. Mabogunje, A. L. and Awe, B. : The City of Ibadan. Cambridge, 1967.
- Ly, Abdoulaye : La Compagnie du Sénégal. Paris, 1958.
- [Mada, Commandant Geo] : La barre du Sénégal. Un fleuve sans issue. Une riche colonie inexploitée. Bordeaux, n. d. [1918].
- Mage, M. E. : Voyage dans le Soudan occidental (Sénégal-Niger). Paris, 1868.
- Mangolte, Jacques : "Le chemin de fer de Konakry au Niger (1890-1914)," Revue Française d'Histoire d'Outre-Mer, LV (1968), no. 198, pp. 37-105.
- Marty, Paul : Etudes sur l'Islam au Sénégal. 2 vols. Paris, 1917.
- Mauny, Raymond : Tableau géographique de l'ouest africain au moyen âge. Dakar, 1961.
- Mayer, Philip : "Migrancy and the Study of Africans in Towns," American Anthropologist, LXIV (June 1962), no. 3, pp. 576-591.

- Mazlish, Bruce, ed. : The Railroad and the Space Program.  
Cambridge, Mass., 1965.
- Meeks, Carrol L. C. : The Railway Station: An Architectural History. London, 1951.
- Meillassoux, Claude, ed. : The Development of Indigenous Trade and Markets in West Africa. London, 1971.
- \_\_\_\_\_ : Urbanization of an African Community: Voluntary Associations in Bamako. Seattle, 1968.
- Melady, Thomas P. and Suhartono, R. B. : Development-Lessons for the Future. Maryknoll, New York, 1973.
- Memmi, Albert : Portrait du colonisé précédé du portrait du colonisateur. Paris, 1957.
- Mercier, P. : "Evolution of Senegalese Elites," International Social Science Bulletin. VIII (1956), no. 3, pp. 441-452.
- \_\_\_\_\_ : "An Experimental Investigation into Occupational and Social Categories in Dakar," in Social Implications of Industrialization and Urbanization in Africa South of the Sahara. Edited by the International African Institute (under the auspices of UNESCO). Paris, 1956, pp. 510-522.
- Mersadier, Yves : "La crise de l'arachide sénégalaise au début des années trente," Bulletin de l'IFAN, XXVIII (1966), Series B, nos. 3-4, pp. 826-877.
- \_\_\_\_\_ : "An Experimental Investigation into Urban African

- Standards of Living in Thiès, Senegal," in Social Implications of Industrialization and Urbanization in Africa South of the Sahara. Edited by the International African Institute (under the auspices of UNESCO). Paris, 1956, pp. 535-545.
- Meynaud, Jean and Salah-Bey, Anisse : Le syndicalisme africain. Paris, 1963.
- Miller, Charles : The Lunatic Express. An Entertainment in Imperialism. New York, 1971.
- Miner, Horace M. : The Primitive City of Timbuctoo, revised ed. Garden City, 1965.
- Miner, H. Craig : The St. Louis-San Francisco Transcontinental Railroad. Lawrence, Kansas. 1972.
- Mollien, Gaspard Théodore : L'Afrique occidentale en 1818. Edited reprint presented by Hubert Deschamps. Paris, 1967.
- Monteil, P-L. : Notice pour servir a l'étude de la carte des établissements français du Sénégal. Paris, 1886.
- \_\_\_\_\_ : Un voyage d'exploration au Sénégal. Papeete, 1882.
- Monteil, Vincent : Esquisses sénégalaises. Dakar, 1966.
- Murphy, Agnes : The Ideology of French Imperialism. Washington, 1948.
- Myint, H. : "An Interpretation of Economic Backwardness," in The Economics of Underdevelopment. Edited by A. N. Agarwala and S. P. Singh, New York, 1963.

- Myrdal, Gunnar : Economic Theory and Under-Developed Regions. London, 1957.
- N'Diaye, Amadou Latyr : Monographie du département de Thiès. Ecole Nationale d'Administration du Sénégal, 1965.
- N'Diaye, Francine : "La colonie du Sénégal au temps de Brière de l'Isle (1867-1881)," Bulletin de l'IFAN, XXX (1968), Series B, no. 2, pp. 463-512.
- Nekkach, Lucien : Le mouridisme depuis 1912. typed report, 1952, in ARS.
- Newbury, Colin W. : "Credit in Early Nineteenth Century West African trade," Journal of African History, XIII (1972), no. 1, pp. 81-95.
- \_\_\_\_\_ : "The Development of French Policy on the Lower and Upper Niger, 1880-1898," Journal of Modern History, XXXI (1959), pp. 16-26.
- \_\_\_\_\_ : "The Formation of the Government General of French West Africa," Journal of African History. I (1960), pp. 111-128.
- \_\_\_\_\_ : "The Protectionist Revival in French Colonial Trade: The Case of Senegal," Economic History Review, XXI (1968), no. 21, pp. 337-348.
- \_\_\_\_\_ : "Victorians, Republicans, and the Paritition of West Africa," Journal of African History, III (1962), pp. 493-501.
- \_\_\_\_\_ : The Western Slave Coast and its Rulers. Oxford,

1961.

Newbury, Colin W. and Kanya-Forstner, A.S. : "French Policy and the Origins of the Scramble for West Africa," Journal of African History, X (1969) no. 2, pp. 253-276.

Ninine, J. : La main-d'oeuvre dans les colonies africaines. Paris, 1932.

O'Connor, A. M. : Railways and Development in Uganda. Nairobi, 1965.

Olivier, Marcel : Le Sénégal. Paris, 1907.

Oloruntimehin, B. O. : The Segu Tukolor Empire. London, 1972.

Orr, Charles A. : "Trade Unionism in Colonial Africa," Journal of Modern African Studies, IV (1966), no. 1, pp. 65-81.

Ortigue, Marie-Cecile and Edmond : Oedipe africain. revised ed. Paris, 1973.

Parisot, M. V. : Le chemin de fer transsaharien. Nancy, 1879.

Pasquier, Roger : Le commerce de la côte occidentale d'Afrique de 1850 a 1870. (pamphlet) Paris, 1970.

\_\_\_\_\_ : "En marge du centenaire de Dakar; Bordeaux et les débuts de la navigation à vapeur vers le Bresil," Revue Historique de Bordeaux et du Département de la Gironde, 1947, pp. 219-237.

- \_\_\_\_\_ : "Villes du Sénégal au XIX<sup>e</sup> siècle," Revue Française d'Histoire d'Outre-Mer, XLVII (1960), pp. 387-426.
- Pelissier, Paul : Les paysans du Sénégal. Saint-Yrieix, 1966.
- Person, Yves : Samori. Une révolution dyula. Vol. I, Dakar, 1968.
- Peterec, Richard : Dakar and West African Economic Development. New York, 1967.
- Pfefferman, G. : Industrial Labor in the Republic of Senegal. New York, 1968.
- Picard, Alfred : Les chemins de fer français, Vols. V and VI, Paris, 1884, 1885.
- Pile, Max : Les chemins de fer français de l'Afrique tropicale. Paris, 1907.
- Porges, Laurence : Bibliographie des régions du Sénégal. Republic of Senegal. Ministère du plan et du développement. 1967.
- Power, Thomas F. Jr. : Jules Ferry and the Renaissance of French Imperialism. New York, 1966.
- Pruneau de Pommeberge : Description de la Nigritie. Amsterdam, 1789.
- Pulvenis, Claude : "Une épidémie de fièvre jaune a Saint-Louis-du-Sénégal (1881)," Bulletin de l'IFAN, XXX (1968), Series B, no. 4, pp. 1353-1373.



- Quinn, Charlotte A. : Mandingo Kingdoms of the Senegambia.  
Evanston, 1972.
- Raffenel, Anne : Nouveau voyage dans les pays des Nègres.  
2 vols. Paris, 1856.
- Rau, E. : "La question des terrains de tound," Annales  
Africaines, 1956, no. 1, pp. 141-163.
- Renty, Captain E. de : Les chemins de fer coloniaux en  
Afrique. Vol. III. Paris, 1905.
- Ricard, Dr. F. : Le Sénégal: étude intime. Paris, 1865.
- Riembau, Frédéric : De Dakar au Niger. La question du  
chemin de fer et la mise en valeur des Territoires de  
la Sénégambie et du Niger. Paris, 1908.
- Roberts, S. H. : History of French Colonial Policy (1870-  
1925). 2 vols. London, 1929.
- Robin, Jean : "Fondation d'un marché: le marbat," Sénégal,  
nos. 54, 56, 58. July, September, November 1943, pp.  
248-250, 307-315, 376-379.
- Robinson, David W. : Abdul Bokar Kan and the History of  
Futa Toro, 1853-1891. Ph.D. dissertation. Columbia  
University, 1971.
- Rotté, Charles : Les chemins de fer et tramways des  
colonies. Paris, 1910.
- Roume, Ernest : "Les chemins de fer en Afrique et le  
Transafricain," Conférence faite le 19 mars 1912 a la  
Société de Géographie Commerciale de Paris, under the

- presidency of M. A. Lebrun, Minister of Colonies, pp.29.
- Rousseau, R. : "Le Sénégal d'autrefois. Etude sur le Toubé. Papiers de Rawane Boy," B.C.S.H.A.O.F., XIV (July-Sept 1931), no. 3, pp. 334-364.
- Sabatié, A. : Le Sénégal: Sa conquête, son organisation (1364-1925). Saint-Louis, Senegal, 1925.
- Saint-Martin, Yves : L'empire toucouleur et la France. Un demi-siècle de relations diplomatiques (1846-1893). Dakar, 1966.
- \_\_\_\_\_ : Une source de l'histoire coloniale du Sénégal. Les rapports de situation politique, 1874-1891. Dakar, 1966.
- Saint-Yves, G. : "Le transit entre l'Algérie et le Soudan et le projet du Transsaharien," Société de Géographie de Tours. Revue, 3rd year (Sept 1886), no. 9, pp. 285-297.
- Salsbury, Stephen : The State, the Investor, and the Railroad. The Boston & Albany, 1825-1867. Cambridge, Mass., 1967.
- Sarraut, Albert : La mise en valeur des colonies françaises. Paris, 1923.
- Savonnet, G. : La ville de Thiès. Etude de géographie urbaine (Etudes sénégalaises, no. 6). Saint-Louis, Senegal, 1955.
- Schnapper, Bernard : La politique et le commerce française

- dans le Golfe de Guinée de 1838 à 1871. Paris, 1961.
- Schumpeter, Joseph : Imperialism-Social Classes. trans. by Heinz Norden. Cleveland, 1955.
- Seck, Assane : Dakar- metropole ouest-africaine. Dakar, 1970.
- Sembène, Ousmane : God's Bits of Wood. trans. by Francis Price. New York, 1962.
- Senegal. Conséquences de la rupture de la Fédération du Mali sur l'exploitation du chemin de fer. October 19, 1960.
- \_\_\_\_\_. Ministère des Transports et des Télécommunications : L'évolution de la Régie des Chemins de Fer du Sénégal depuis sa création (le 20 aout 1960). Thies, 1962, Pp. 31.
- \_\_\_\_\_. Direction des Transports. Bureau d'études. Ministère des Travaux Publics, de l'Urbanisme et du Transport. Les flux et les moyens de transport de marchandises au Sénégal. May 1971.
- \_\_\_\_\_ : Rapport de l'étude sur la coordination des transports du Sénégal. University of Strasbourg. Mission du L.I.G.U.S. June-August 1954.
- \_\_\_\_\_. Direction des Transports du Ministère des Travaux Publics : Les transports terrestres au Sénégal. Thiès, 1964.
- Simms, Ruth P. : Urbanization in West Africa. Evanston, 1965.

- Skinner, Elliot : The Mossi of the Upper Volta. Stanford, 1964.
- Smaïlles, Arthur E. : The Geography of Towns. London, 1953.
- Smith, Willie : "Industrial Sociology in Africa: Foundations and Prospects," Journal of Modern African Studies, VI (1968), no. 1, pp. 81-95.
- Socé, Ousmane : Karim: roman sénégalais. 3rd ed. Paris, 1948.
- Société de Construction des Batignolles : L'oeuvre d'un siècle, 1846-1946. Paris, 1952.
- Soleillet, Paul : Avenir de la France en Afrique. Paris, 1876.
- Sources de l'histoire de l'Afrique au sud du Sahara dans les archives et bibliothèques françaises. I, Archives. Zug, 1971.
- Southall, Aiden, ed. : Social Change in Modern Africa. London, 1961.
- Stearns, Peter : Revolutionary Syndicalism and French Labor. New Brunswick, 1971.
- Suret-Canale, Jean : Afrique noire occidentale et centrale. Vol. I: Géographie, civilisations, histoire. Paris, 1968; Vol. II: L'ère coloniale (1900-1945). Paris, 1964.
- \_\_\_\_\_ : "Quelques aspects de la géographie agraire au Sénégal. Le cercle de Louga," Cahiers d'Outre-Mer, I (Oct-Dec 1948), no. 4, pp. 347-367.

- Sy, Cheikh Tidiane : La confrérie sénégalaise des mourides.  
Paris, 1969.
- Tamuno, Takena N. : The Evolution of the Nigerian State:  
The Southern Phase, 1898-1914. New York, 1972.
- Thiam, Iba Der : La grève des cheminots du Sénégal de  
Septembre 1938. 2 vols. mémoire de maîtrise. University  
of Dakar, 1972.
- Thioye, Mme Diouniang : Le régime foncier au Sénégal.  
Evolution et perspectives. Centre de formation et de  
perfectionnement administratifs-Sénégal.
- Thomas, Benjamin E. : Railways and Ports in West Africa,"  
Economic Georgraphy, XXXIII (January 1957), no. 1  
pp. 1-15.
- Thomassery, Marguerite : Catalogue des périodiques d'Afrique  
noire francophone conservés a l'IFAN (1958-1962). Dakar,  
1965.
- Thompson, Virginia M. and Adloff, Richard : French West  
Africa. Stanford, 1957.
- Trimingham, John Spencer : A History of Islam in West  
Africa. London, 1962.  
\_\_\_\_\_ : Islam in West Africa. Oxford, 1961.
- Turner, Victor, ed. : Profiles of Change, African Society  
and Colonial Rule. Cambridge, 1971.
- Vanhaeverbeke, André : Rémunération du travail et commerce  
extérieur. Essor d'une économie paysanne exportatrice

et termes de l'échange des producteurs d'arachides au Sénégal. Louvain, 1970.

Vigne, Dr. Paul : "Le port de Dakar. Son importance actuelle. Son rôle dans l'avenir commercial du Soudan français," Bull. SGCB, no. 16, August 15, 1887, pp. 486-494.

Villard, André : Histoire du Sénégal. Dakar, 1943.

Wane, Yaya : "Réflexions sur la recherche sociologique en milieu africain," Cahier d'Etudes Africaines. XXXIX (1970), pp. 384-406.

Wiener, Lionel : Les chemins de fer coloniaux de l'Afrique. Paris, 1930.

Wilson, George W. et al. : The Impact of Highway Investment on Development. The Brookings Institution. Washington, 1966.

Witherell, Julian : The Response of the Peoples of Cayor to French Penetration. Ph.D. dissertation. University of Wisconsin, 1964.

Wolfe, Martin, ed. : The Economic Causes of Imperialism. New York, 1972.

\_\_\_\_\_ : The French Franc Between the Wars, 1919-1939. New York, 1951.

Wright, Gordon : France in Modern Times. London, 1962.

Zeldin, Theodore : "Higher Education in France," in Education and Social Structure in the Twentieth Century.

Edited by Walter Lacqueur and George Mosse. New York, 1967, pp. 53-80.

Zuccarelli, Francois : "Le recrutement de travailleurs sénégalaises par l'état indépendant du Congo (1888-1896)," Revue Française d'Histoire d'Outre-Mer, XLVII (1960), nos. 168-169, pp. 475-481.

## PREFACE

In a dissertation, or any research subject for that matter, there are generally both narrow and broader queries that can be pursued on a given theme. The narrow theme in this case concerns the "motives for French railroad-building in Senegal." Unfortunately, despite prolonged searches through archival sources available in Senegal, it soon became obvious that there were simply too many missing particulars to be able to complete this story well. Even while searching out the missing information gaps for the narrow theme, however, it also proved possible to gather abundant material for the broader theme of the social impact of the railroad in Senegal, on trade patterns, on labor, and on land--sufficient material at the end of a two-year sojourn in Senegal to write a dissertation regardless of the missing gaps in the narrow theme.

These critical gaps had, in reality, been stored all along in Paris, mostly in unclassified cartons at the



French National Archives, Section d'Outre-Mer. Happily, all of this became available, just before I arrived in Paris, with the French government's relaxation of the fifty-year rule. Given the bonanza of information at Paris added to the riches already collected in Senegal, it thus became possible to write on either of the themes. It is hoped that the reader will welcome this attempt to combine some of the more promising elements of both narrow and broad themes within one dissertation, despite the consequent necessary neglect of interesting sidelights and omission of detail.

The narrow theme of French motives serves as the main chronological thread for the dissertation and forms the major concern within Chapters I, II, IV, and VII, and to some extent Chapter III. The more interesting and challenging problem of the role played by the railroad in shaping the colonial situation in Senegal is taken up more specifically in Chapter V on labor and Chapter VI on land. Chapters III and IV also grapple to some extent with the impact of the railroad on trade patterns and population movements. The complexity and abundance of the available material forced analysis at a more general

level, and the results are by no means definitive; but it is hoped that they may serve as a frame of reference for further studies.

French motives in building railroads, it should be added, also have their own broader implications because of the ways in which the actions and attitudes of Europeans toward Africa and Africans were conditioned by the sensed loss in mobility, and therefore a heightened sense of isolation, experienced by Europeans in the African environment--a notion that served to guide the general approach taken in this dissertation. Significant at first only because of the rigors of a foreign climate, this relative loss in mobility would become more perceptible and more vexatious to Europeans from the mid-19th century as mobility and the pace of life within an industrializing Europe grew. The growing disparity in the mobilities, indeed the internal rhythms, of European and African societies may have been only a secondary factor in the general encounter of the two societies, with their differing norms, symbols and values. But, this disparity imposed, nevertheless, certain constraints on the nature of their contact.

Time limitations required that the study be confined spatially to Senegal--to cover the Dakar-St. Louis and the Thiès-Kayes railroads and their small branch lines--to the neglect of the Kayes-Niger section of the Dakar-Niger rail line. The year 1878, when a definitive Dakar-St. Louis rail project was drawn up, was a logical starting date. Choosing the terminal point at 1933 was more arbitrary owing largely to the difficulty of carrying the story to 1948 within a reasonable time. However, in retrospect, 1933 turns out indeed to have been a very suitable cut-off point, since a major break in the economic and social history of Senegal, if not its political history, did take place at that time. For lack of space and time, the story of Lat Dior's struggle against the railroad--already done in some detail from documentary sources by Germaine Ganier and Vincent Monteil-- can only be touched on briefly.

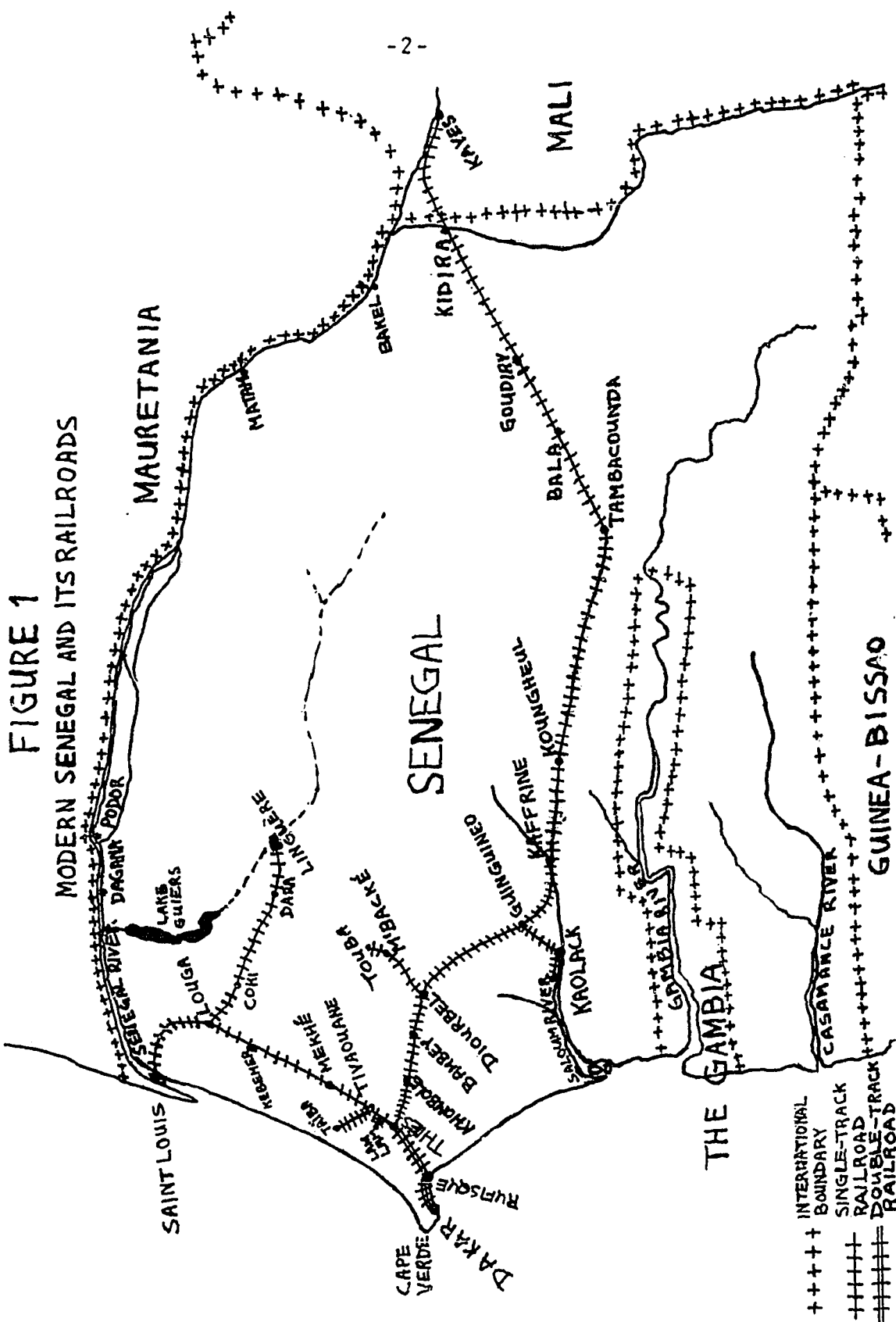
## CHAPTER I

### THE INCEPTION OF SENEGALESE RAILROADS

it is not alone and without arms, at the tail of a native caravan or under the inadequate care of camel drivers that we ought to penetrate there; but in a locomotive, with all the material power, all the moral prestige that our industrial and civilizing power permits us to have at our command; with the help of a railroad following us step by step--simultaneously an engine of conquest, of replenishment, and of exploration.

-A. Duponchel, 1880<sup>1</sup>

The first question that comes to mind is, why study railroads of all things? The impact of railroads seems familiar and obvious. Railroads were faster than earlier modes of transportation, could carry more, and were more convenient--at least until the motor car came along. These commonplaces, however, seem obvious simply because so little is really understood about the workings of our society or other societies of the past or present. In reality, the railroads have had a broad range of often subtle, intangible impacts on the fabric of society--altering it in ways that being untraceable or unmeasurable, have to be labeled indirect effects, perhaps only to be briefly mentioned before going on to the items that can be analyzed.<sup>2</sup>



For African society, a study of railroads seems even more vexing because the rail lines were, after all, inserted into Africa by the colonial powers for their own purposes, usually without much regard for the wishes of the Africans directly involved; moreover, these railroads impinged on the lives of these Africans in indirect ways generally--acting largely as instruments through which external economic forces and political control could be brought to bear on the local scene.

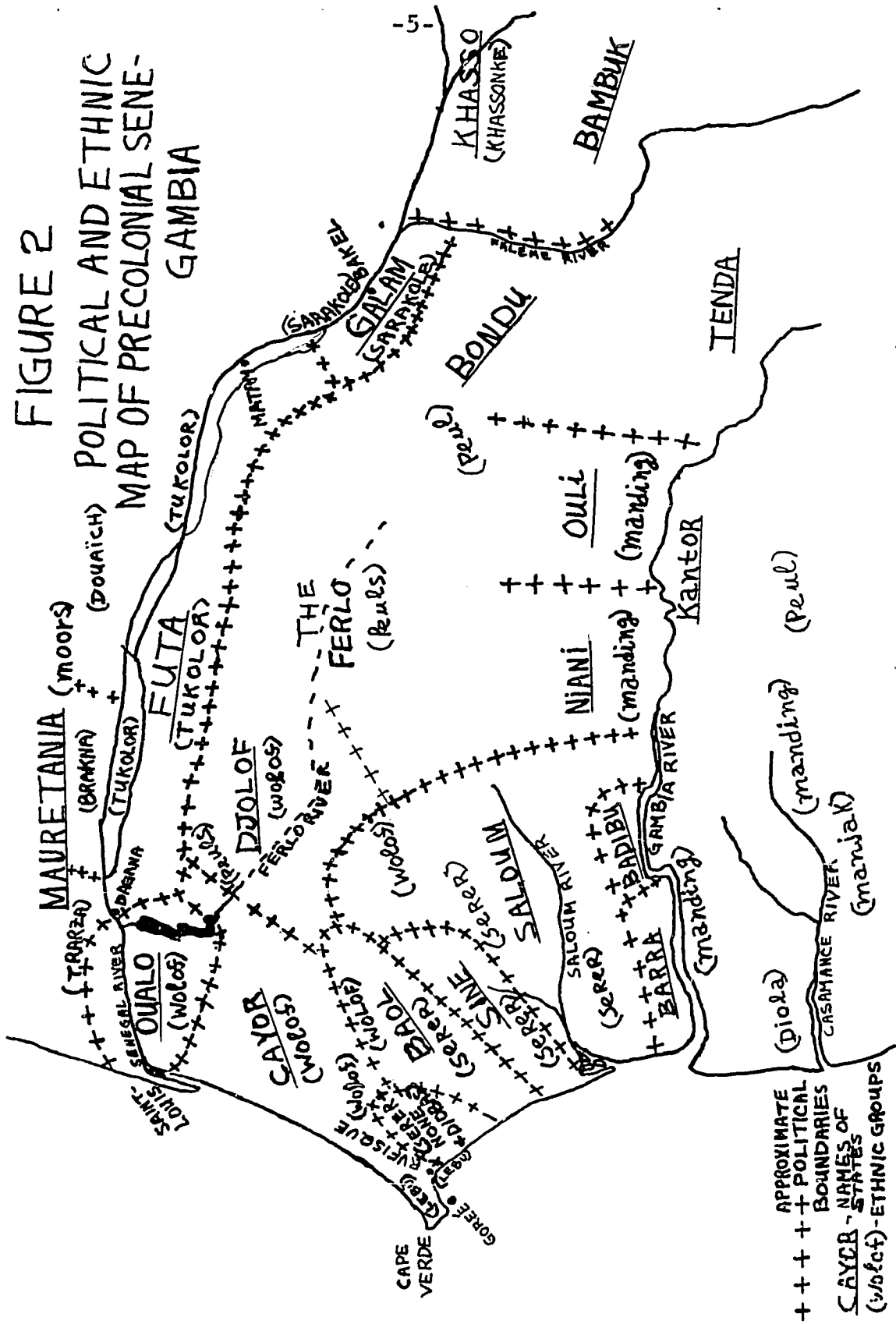
It would be immensely difficult to summarize in a few lines the intricately complex social and political developments in the West African societies of the Senegal-Sudan region before the advent of the railroad and the "scramble for Africa." But it may be said that the principal motifs were the distortion and decay of traditional political structures, first under the impact of the Atlantic slave trade, then on this trade's demise; the resurgence and expansion of Islam in a militantly reformist form; and the persistence, through adaptation, of characteristic African social structures and modes of thought.<sup>3</sup>

Historical change in precolonial Sengambia centered not so much upon the strife among social classes, nor upon the clash of one cultural "ethnic" group with another, nor even on the incessant struggles for political supremacy

among rival, but kindred aristocracies, nor on the promising concomittant growth of "legitimate" commerce with Europe--though all these developments did occur. Instead, change centered on the expansion of Islam throughout the region, particularly in the attempts of puritanical "marabouts" to forge immense Islamic empires--in great jihads, which could also act as vehicles for other aspects of social change (See Appendix 1 and Figure 2 for some details).

After the colonial conquest, however, the impact of the loss of political sovereignty to the French and the progressive absorption of the region's economy into a global trade market also became crucial processes generating change within Senegambian society, alongside the continuing, even more rapid Islamization of the region's inhabitants.<sup>4</sup> Thus, whatever the continued importance of Islamization in social change--and it may be argued indeed that Islamization was still the most important of these central processes--it is undeniable that Africans were obliged thenceforth to cope in their ordinary, everyday encounters and economic concerns with what Balandier has termed the "colonial situation."<sup>5</sup> The railroad was, of course, one element helping to shape the colonial situation that was intruding into African life, and it is in this sense that a study of the railroad merits particular

**FIGURE 2**  
**POLITICAL AND ETHNIC**  
**MAP OF PRECOLONIAL SENE-**  
**GAMBIA**





attention.

In Africa, as elsewhere, railroads offered promising solutions to the constraints imposed by nature since, unlike a fixed river valley, a railroad could carve out new, more convenient lines of communication far from the valleys, and it was less subject to seasonal variations. Yet, railroad construction and exploitation in West Africa differed substantially in certain senses from rail undertakings in other climes.

For H. S. Frankel, the distinctive feature setting off African railroads from those of other global regions lay in the continent's relative underpopulation, which impaired the financial profitability of railroad ventures and thereby hamstrung their potential for generating economic growth (or attracting capital).<sup>6</sup> Equal weight, however, should also be given to the question of political control and responsibility, since the African railroads were built in response to European needs in an African environment, rather than specifically for African needs.

Railroads built in Europe, for instance, took into account the preexisting social complex within which they were constructed. It was not simply that existing population centers were pivotal foci necessarily figuring in the calculations of railroad planners, but also that European governments had taken care to ensure that the

existing social and economic geographies of their own countries were not altered too quickly or in directions that were unacceptable to at least some local entrenched interests.<sup>7</sup> Less burdened by such considerations or by immoderate costs for right of way passage, "pioneering" rail lines in the American West could in contrast first be traced out with a freer hand on the basis of economic and geographical considerations. These lines then would supply the framework around which the society settling the West afterwards could spread out and grow.<sup>8</sup>

Colonial railroad building in West Africa offers a distinctive contrast to experiences in both the American West and Europe. In West Africa, as in Europe, the peoples of the social communities already settled in place had a vital stake in the existing regional social and economic geographies and in the manner of their alteration. However, those who made the decisions regarding the remolding of the West African economic and social geographies with railroads were Europeans, unaccountable as a rule to the Africans involved. Indeed they were often metropolitan Europeans who had never even visited Africa.

The French, whose movements were severely hampered by what was for them a hard, alien climate, were not thinking, moreover, in terms of the "presettled" model of railroad building applicable in Europe. Beholding in

West Africa an underpopulated region, unlike the densely-settled colonial areas of Asia, the French considered indeed that they were operating in virtually virgin territory, which was to be "opened up" by pioneering railroads around which a new society would grow.<sup>9</sup> It was the dazzling success of American railroad development, not of European, that captured the attention of French colonial railroad builders as the model to be copied for African railroads, and the French were acutely conscious that they were not simply implanting lines of steel rails in Africa, but also infusing a complex system of European substructure and culture along the thin ribbons of territory about these rails.<sup>10</sup>

Two difficult problems are encountered in trying to trace the social impact of the railroad in Africa. First of all, although the importance of the railroad economically, strategically, and politically is undeniable, its role as a conveyor of European innovations perhaps crucial in certain respects, it is often difficult to separate the specific impacts of the railroads, direct and indirect, on life in Senegal from those caused by other innovations carried into the region (often by the railroads themselves). Thus, while much of the prosperity of towns and ports served by rails was due to the railroad, it was really the European export commerce acting through the

railroad that had made the prosperity possible; and the morphological growth of these centers was also more closely linked to the needs of commerce and the municipal policies of the colonial government than to any intrinsic effects of the railroad on local geography. It is only possible, therefore, to understand the social impact of the railroad, if other broader developments are taken into account.

Furthermore, some effects specifically springing from the railroad can be so diffuse and intangible in their manifold, indirect social and psychological results that it becomes almost impossible to pinpoint or trace many of them, even if they may be significant. An analysis of the rail locomotive, or of Western machinery in general, as value-laden symbols in African society, for example, would be of great interest--certainly the French thought the locomotives would make a powerful, even terrifying impression; but this question requires special research efforts not attempted here.<sup>11</sup> The marabouts of Senegal, likewise, took to the rails at an early date, employing them as effective instruments for the wider propagation of Islam;<sup>12</sup> and many young men also took advantage of an increased accessibility of travel for enjoying in a new way the familiar pastimes of voyaging for pleasure and adventure. But how could this be measured?

Of these indirect social effects perhaps all that can be done for the moment is to sum them up in the catchword of "accessibility"--obviously the increased accessibility and exposure of Africans, particularly those previously isolated in the interior, to European military, economic, and cultural penetration and reciprocally the accessibility to Africans of European goods and ideas; but also the increased mutual reciprocal accessibility among Africans for interchanges of goods, lands, or ideas. This being said, the multitudinous, intangible aspects of accessibility, unfortunately, have to be left aside. It is in the more obvious sense of the notion of accessibility--that dominating the thought of French planners of colonial railroads--that the thread of the story can be more easily followed.

Geographical access Precolonial West Africa, and more specifically pre-railroad West Africa, was faced with particularly harsh transportation problems. Both the shape of the African continent as an essentially massive block without strongly indented coast lines and the region's shortage of navigable waterways inhibited the growth of a substantial water-borne traffic.<sup>13</sup>

With little dramatic relief, the key geographical features marking out the Senegambian region are indeed those of drainage, principally the Senegal and Gambia

rivers that rise in the Futa Djallon massif well to the south to flow in a generally westerly direction to the sea. Only slightly to the east, the Niger river rises in the Futa Djallon and Guinea highlands, but flows contrariwise in a northeastern direction into the Sudanese interior; then bends sharply southeastward after skimming the rim of the Sahara to flow down to the Gulf of Guinea--managing thereby to encompass in its path much of the expanse of the West African interior. The forms of these two river basins and their alignment with each other would suggest major highways for commercial traffic; but in fact there were a number of obstacles, physical, economic, and social, inhibiting the flow of commerce along them.

The prevalence of weather fronts roughly paralleling the southern tier of the West African coast, and their seasonal movement in north to south directions, created in West Africa a diverse range of climatic and vegetative conditions that encouraged domestic interchanges of goods among the differing zones (such as salt from the Sahara and kolas from forest areas toward the Sudanese grasslands). But these climatic and vegetative zones running generally (with local variations) in east to west belts--corresponding to decreasing annual rainfall and progressive dessication as one proceeds northward--tended to support domestic trade in a north-south direction rather than in the east to west

orientation of the Senegal-Niger axis.<sup>14</sup>

To compound transportation difficulties, extensive use of animal-borne traffic was precluded over substantial zones infested by tse-tse flies, whereas in dry regions free of the sleeping sickness carried by the tse-tse, water shortages could be a serious burden or even a peril to travellers.<sup>15</sup> Moreover, the dramatic seasonal movement of weather fronts could disrupt the regularity of both land and water-borne traffic in Sahelian and Sudanese West Africa. Thus, during the rainy season, water-borne traffic would flourish as rising water levels swelled the rivers and reinvigorated dry "marigot"beds; but many land routes were also cut by the same flooding waters. During the dry season, on the other hand, water traffic shrank or ceased when falling water levels dried marigot beds and left river channels clogged with emerging obstacles-- even while some land routes also became unusable for lack of drinking water.<sup>16</sup> The close relation between transportation ease and the quantity and timing of rainfall also made transit arrangements difficult to predict on a year-to-year basis.

Widespread domestic market systems did develop in West Africa despite the physical difficulties; but the currents of domestic and external commerce could have been stronger had there not also been economic and social

obstacles to the growth of commerce. Particularly crippling to the growth of long-distance commerce was the low value of most of the commodities that were likely to be traded (gold, ivory, slaves were high valued, easily-transported exceptions).<sup>17</sup> Low cost transportation over waterways aligned in the right directions might have stimulated the growth of commerce for the lower valued goods.<sup>18</sup> But even where such river alignments occurred, such as on the lower Niger river, unsettled political conditions, the interests of local trading monopolies, and the conservative mores of some social ethos often deterred much potential long-distance trade. Perhaps the real importance of the rivers in precolonial Sudanese Africa lay less in their role as highways of trade than as magnets for population--creating, with reliably abundant waters, populated centers within the parched Sudanese region.<sup>19</sup>

European interest Despite a long history of contact with the coast of tropical Africa in modern times, Europeans had displayed little relative interest in exploring the interior of Africa until just before the 19th century.<sup>20</sup> Already hampered by the geographic and climatic difficulties of the region, Europeans encountered in tropical Africa endemic diseases of a virulence unequalled in any other quarter of the globe, and they were soon easily



distracted by the allure of richer, more accessible lands elsewhere. The rigors of a foreign climate, with sudden, sharp fluctuations in temperature adding to the fierceness of sun and heat sapped the European's vigor even as deadly diseases took a heavy toll among his companions--a frightening experience since it was believed that the diseases sprang from the climate and the very soil of Africa. The difficulties of access to West Africa seemed all the more formidable to an outsider since access to the interior was guarded on the north by desert and semi-arid zones and along the southern littoral by a dense rain forest.

Perhaps the apparent disinterest arose, in large part, out of the poisoned atmosphere born of the Atlantic slave trade. With violence always possible, European traders rarely ventured into the interior, generally huddling instead on ships and offshore islands, or in forts that hugged the coast. For Africans, on the other hand, the arms procured by the trade were so important for security that the layers of intermediate African traders had every reason to discourage direct contact between the coast and the interior. In any case, an unremunerative European occupation of African soil in the face of the physical and military odds made little sense.

By the 19th century, several developments were acting to erode the strength of these physical and

psychological barriers. Successful humanitarian efforts to end the slave trade, for one thing, had turned popular European attention to the persistence of this trade in the African interior. Europe was industrializing, and the new industrial technology was disgorging a plethora of new devices and techniques. There were steady gains in the speed and capacity of modes of locomotion and communication, as well as enormous advances in improved weaponry of progressively increasing firepower. Thus, the power equation between Europe and Africa was strongly altered by a growing European military superiority, while a series of medical discoveries breaching the invisible barriers of tropical diseases allowed the new military technology to be brought to bear directly on the scene. By the 1880's and 1890's, Europeans had acquired so disproportionate a military edge, that relatively trivial numbers of Europeans leading African troops could prevail against well-organized African empires of military renown.<sup>21</sup>

At the same time, the needs of an industrializing Europe for the cheap, raw materials (peanuts, palm oil, rubber, etc.) available in West Africa also fostered a growing trade with the region, drawing to its coasts new merchants and new attention. For European traders, the rivers would immediately suggest avenues for penetration into the interior, moving highways on which trade might

flow easily and cheaply, and on which Europeans could glide quickly in relative security and comfort on their own vessels. But even if Europeans did use the rivers to establish trading posts farther inland, much, if not most of the trade with the interior, even along the rivers, was in the hands of African intermediaries. Occasional European visits to the interior generally had the character of adventures of little regularity, and Europeans seem to have known little of realities in the interior or of the active African trade networks of the region.

A growing trade had sparked new interest in West Africa and had given some Europeans a new material stake in the region; but it hardly follows that this impelled the European governments to occupy large slices of African soil. Perhaps it was rather that a Europe enriched by the surpluses of industrialism could now afford to indulge in such overseas enterprises with little return as the difficult conquest of West Africa.<sup>22</sup>

Early French expansion Durable French trading contacts with the Senegambian region date from 1659. Objects of the rivalries of the European maritime powers in the 17th and 18th centuries, the island port of St. Louis in the Senegal river's mouth and Gorée, 150 kilometers to the south, definitely passed to the French in 1816. Farther

down the coast lay other French posts scattered from the "Petite Côte" to the Saloum, the Casamance, the "Southern Rivers," even down to Gabon. Interspersed with these posts were strings of colonial trading posts of other European nations--such as the Portugese at Bissau and on the Casamance and, most importantly, the solid British positions at Sierra Leone and on the Gambia river--the posts on the latter virtually blocking French penetration by this route.<sup>23</sup>

The Senegal river, of course, afforded the French a major avenue for penetration into the interior. The French had indeed taken advantage of this opportunity in making a number of notable forays to the Upper Senegal, even in the 17th and 18th centuries. But these efforts were sporadic in nature, especially since the upper parts of the river were navigable only for a short season from August to mid-October, and even then with difficulty. After the failure, from 1816, of French officials to turn Senegal into an agricultural plantation colony, the river trade largely remained in the hands of African and creole intermediaries based at St. Louis.<sup>24</sup>

The Senegal river, indeed, was the primary axis for the first major attempt at territorial conquest in the interior. While commercial motives were not entirely absent, this forward movement of French imperialism in

the Senegambia from the 1850's seems to have been provoked by military officers who refused to tolerate any longer any form (real or token) of subordination to neighboring African powers and who resolved to end with military force the local civil and religious wars that were disrupting trade with the interior.<sup>25</sup>

From 1854 on, the colony of Senegal took on a decidedly martial tone, with especial emphasis on the domination of the Senegal river's banks by ships' artillery and well-placed military posts. At the end of 1854, a new governor, Louis Faidherbe, launched a program of continental expansion based frankly on the Algerian model.<sup>26</sup> Along the river, the neighboring arabo-berber Moors were vanquished, chased out of Oualo, and then forced to trade gum on French terms, even while Oualo itself was annexed by the colony (see Figure 2). While the Tukolor nation along the middle Senegal river was overawed with French arms, the reformist Tukolor marabout El Hadj Umar was turned back from the Upper Senegal, and a French post installed permanently at Médine in Khasso.<sup>27</sup>

French forces were soon equally active along the Atlantic coast, with Cape Verde, next to Gorée, occupied and annexed in 1857 and Rufisque taken in 1859. Expeditions were launched into the interior to overawe Cayor, Sine, Saloum, and the Casamance, while new posts were es-

tablished along the African coast farther south, down to Gabon.

One of the most vexing strategic problems of this unfolding expansion was the separation of St. Louis and the Senegal river basin from French bases at Gorée and Dakar by the powerful kingdom of Cayor lying between. A project submitted by one French officer in 1856 suggested linking the two wings of the colony with a coastal railroad; but finally only a connecting coastal telegraph protected by military posts was actually undertaken.<sup>28</sup> Even for the telegraph, Cayor had first to be invaded in force in 1861, a French protégé installed as "damel" of Cayor, and a strip of Atlantic seaboard for the line annexed by the colony. When control of Cayor through a pro-French damel failed, all of Cayor was conquered and annexed directly to the French colony.

Warriors of progress The striking prominence of military engineers in colonial expansion--those of the colonial artillery as well as the corps of engineers--was not accidental but indeed indicative of a cardinal aspect of the process of French imperialism in West Africa that was to emerge full-blown in the 1880's. From a modern perspective, the imperialist proconsuls may appear as well-shod barbarians perverting a new technology for aggressive purposes; indeed it would be easy to assemble a compendium

of brutal, even grisly imperialist acts.<sup>29</sup> One should not ignore, however, the very firm, contrary belief of officers spearheading the imperialist advance (governors Faidherbe, Pinet-Laprade, among others) that they stood indeed in the forefront of modernism--as the advanced cutting edge, on a planetary scale, of a triumphant industrial society. The undeniable sincerity of this belief is indeed underscored by the striking penchant of French colonial officers and officials to introduce, sometimes prematurely, the latest technological devices into Africa--telegraph and railroad lines in the 1850's, electrical municipal lighting in the 1880's, the automobile in 1899, the airplane in 1918.<sup>30</sup>

Perhaps part of the reason for the prominence of military engineers in imperial expansion lies in the well-known élan and solidarity of graduates of the French Ecole Polytechnique.<sup>31</sup> Much more of the answer lies in the apparent challenge presented by the physical obstacles in West Africa that seemed so forbidding to intruders. It was here within this environment, that a certain type of mentality, fusing complementary elements of the (ideal) characters of technologist and military conqueror, could find a wide arena for expression in a way that would have seemed inappropriate in the prosaic atmosphere of metropolitan Europe. For in Africa, both exploratory penetra-

tion and engineering ventures, even in the name of peaceful expansion, would take the form of assaults upon a powerful, contrary, even hostile nature.<sup>32</sup> This struggle need not be grim but even exuberant. Certainly a sense of joy is manifest in Pinet-Laprade's espousal of a coastal railroad in 1856, as he wrote,

what nature has done and would certainly never do, the Genius of man has provided the means to accomplish. The marvels of our century, the application of steam and electricity to useful things are the most powerful means that man has ever manipulated . . . Already our small steamships are considered in these parts, with reason, as the most powerful means to enlarge our relations with the interior of Africa . . . is it not certain that one day it will be desirable to unite the important centers by other routes? Will this operation be accomplished by ordinary roads with their slow, incessant traffic, or by the perfected means of railroads? <sup>33</sup>

Retrenchment But these early dreams of soldiers and builders were soon dashed, more by decisions made in the metropole than by the actual physical difficulties encountered in the colony. Following Faidherbe's departure and his successor Pinet-Laprade's death in 1869, the area of French-held territory was sharply reduced. French garrisons were withdrawn from many posts. Cayor was abandoned, except for Diander with its port of Rufisque and the thin telegraph corridor from Cape Verde to Gandiole.

The French defeat in the Franco-Prussian war certainly accelerated the French retreat. But for budgetary



reasons, French authorities had already embarked beforehand, in 1869, on a policy of retrenchment in Senegal.<sup>34</sup> If financial austerity now became paramount, transportation and communication difficulties in Senegal certainly played a major role in determining where retrenchment would take place. Thus, it was easier to maintain a post at far-off Médine on the Upper Senegal than in nearby Cayor, where even modest road-building efforts had failed and where military rule could be enforced only with periodic cavalry sweeps.<sup>35</sup> The gravity of the problem is perhaps best expressed in an account of the later conquest by a French officer of the 1890's, who wrote,

One imagines that the native constituted the greatest obstacle, the most fearsome peril. That's not so! The Negroes, except in certain regions, were neither warlike enough nor sufficiently organized to resist us. It was nature itself that in its tropical zeal raised itself against the European . . . The Negro, the savage of the woods, the cannibal, the Mahdist armies were nothing; their arrows or their rifles didn't count; the insurmountable obstacle was always the transportation of an enormous, heavy ordnance across a country without roads.<sup>36</sup>

Railroads, of course, offered one solution of the military logistics problem; but, there were no funds for that. Instead the French retreated back into a scattering of trading and military posts dotting the coast and the Senegal river. Still a paramount military power in the region, the colony had become, in some senses, once again peripheral to it.<sup>37</sup>

The Transsaharan As is well-known since the important article by Newbury and Kanya-Forstner, it was an enthusiasm in the French metropole for a rail line across the Sahara that rekindled, in 1879, French colonial expansion in Senegal.<sup>38</sup> Scorned in this century because it was so ill-conceived at the time, the Transsaharan project has not received the attention it deserves, for the contemporary debates on this project, occurring as they do on the eve of the "scramble for Africa," offer certain absorbing insights into the nascent French colonial party.<sup>39</sup>

Sparked itself by an enthusiastic public response to the engineer A. Duponchel's book Chemin de fer transsaharan, a serious study of the Transsaharan had been undertaken in 1879 under the auspices of the Ministry of Public Works.<sup>40</sup> The leading actor in this effort was Charles de Freycinet, the Minister of Public Works, who had been preparing since entering this post in 1878 an ambitious program for 4500 kms of new rail lines in metropolitan France together with proposals for extension of the Algerian rail network. What was more natural than the study of a Transsaharan railroad as well?<sup>41</sup>

Freycinet first formed a preliminary study commission on the Transsaharan in May 1879; and when this body issued a favorable report, he formed a full commission, seating parliamentary and ministerial representatives alongside explorers, railroad managers, geographic society members,

and such "personalities" as Ferdinand de Lesseps.<sup>42</sup> The full commission was divided by Freycinet into four sub-commissions, whose members were soon at loggerheads over which route should be followed into the Sahara. Commission meetings continued inconclusively into 1881, when the massacre of the Flatters expedition in the Sahara exposed more clearly the drawbacks and perils of the enterprise.<sup>43</sup>

It is in the various arguments raised during debates on the Transsaharan that one can see a fascinating mixture of motives: the already archaic humanitarian concerns of an earlier generation mingling with the prophetic stirrings of a coming, harder imperial age. One humanitarian argument, soon also invoked to justify occupation of the Congo, was of the need to interdict slave caravan routes in Africa--a function that the Transsaharan would presumably perform as it traversed the Sahara. But the main thrust of the Transsaharan lay elsewhere.

Designed to overleap the barrier of the Sahara desert, which separated Algeria from the Sudan and blocked French access to the interior from the direction, the Transsaharan was only one of a number of bold concepts conceived by the fertile imaginations of French engineers in the 19th century. The reconstruction of Paris, the piercing of Alpine tunnels, and the ports and railroad nets built in France and elsewhere testify indisputably to their techni-

cal virtuosity.<sup>44</sup> The creation of the Suez canal, in particular, was a glorious triumph, and even the abortive Panama canal scheme was vindicated later on as a general concept. A Transsaharan railroad was even more imaginative than the canals since it aimed, like the contemporary American Transcontinental and the future Trans-Siberian, at transforming the nature of a vast continental region.

Unfortunately, as logically seductive as the Transsaharan might be, it was based at the time largely on two mistaken ideas. European explorers had indicated earlier that parts of the Sudan were rich and thickly populated. Speculation extrapolated the observed riches into an imagined opulence covering all of the Sudanese interior, although prudent observers realized that only the Hausa country in the east was known to be prosperous. Far more serious was the mistaken notion--which persisted until disproved by Binger's mission of 1886-1889--that the Sudanese heartland was isolated from easy access to the West African littoral by a chain of high mountains paralleling the coast: the mythical mountains of Kong (see Figure 3). In accordance with this idea, the possession of bases in Algeria, as well as at other coastal springboards at Senegal and Gabon, gave France an immense positional advantage over other European nations. A bold advance from Algeria would presumably deliver this rich

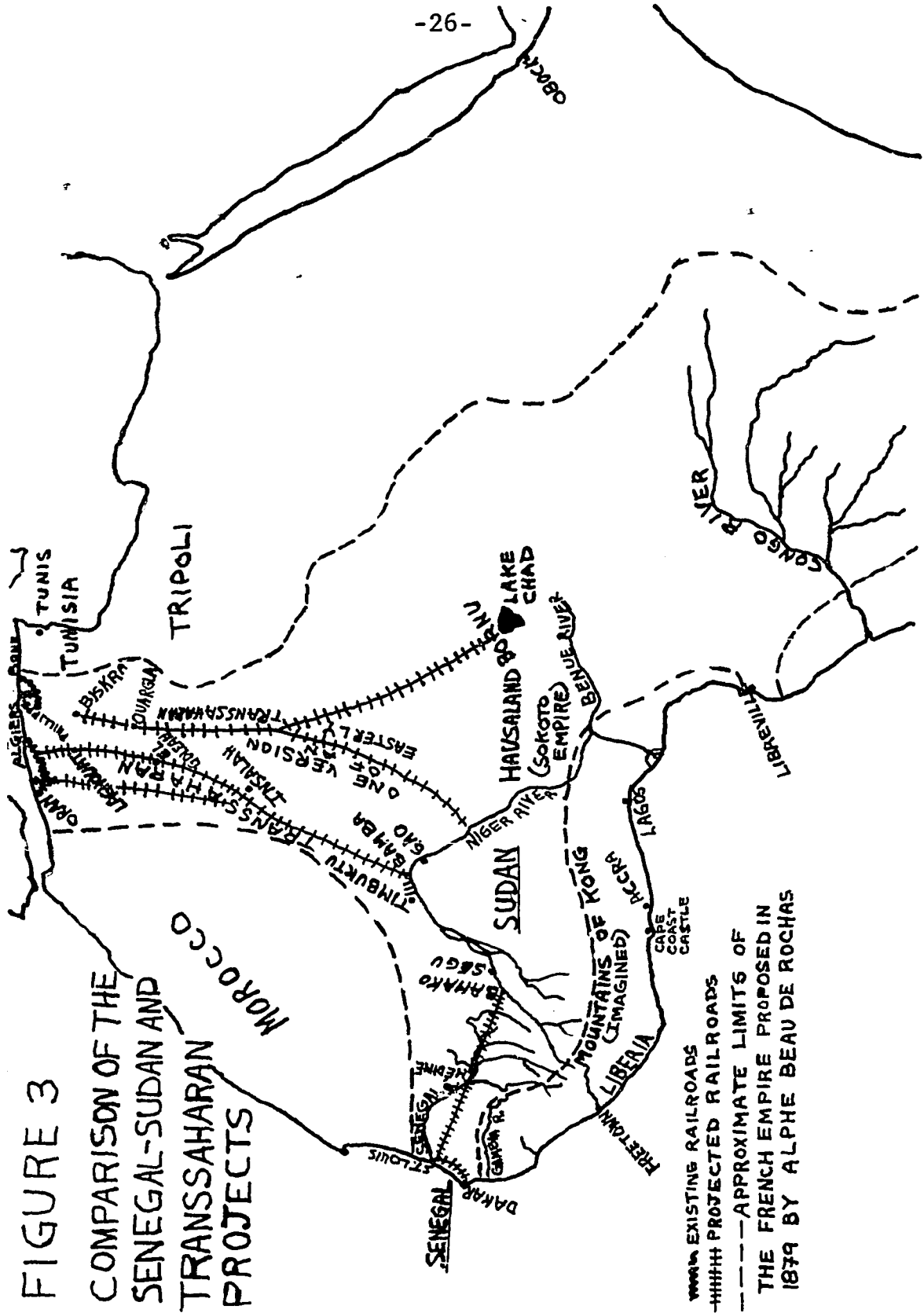


FIGURE 3  
 COMPARISON OF THE  
 SENEGAL-SUDAN AND  
 TRANSSAHARAN  
 PROJECTS

WAVY EXISTING RAILROADS  
 DASHED WITH CROSS-TICKS PROJECTED RAILROADS  
 LONG-DASHED APPROXIMATE LIMITS OF  
 THE FRENCH EMPIRE PROPOSED IN  
 1879 BY ALPHE BEAU DE ROCHAS

Sudanese heartland into French hands. The French need move quickly, it was argued, because rival powers were supposedly preparing to outflank a French Transsaharan with their own railroad projects--from Morocco to Timbuktu (a British scheme supposedly), from Tripoli to Bornu (German), or from Liberia to the Upper Niger (American and British).<sup>45</sup>

The Transsaharan enthusiasm was, of course, strongly permeated by an underlying anxiety shared by Frenchmen at this time over the apparent decline of French power. Even in the 1860's, some Frenchmen had already been uneasy about the greater potential strength of such powers as Britain, Russia, and America, which controlled much larger masses of land and people than France. These fears were generalized within France and intensified acutely by the military defeats of the Franco-Prussian war and the subsequent humiliating territorial losses to a newly-born German empire. A vivid demonstration of the nation's vigor seemed necessary to restore confidence; but renewed warfare in Europe was unthinkable at the time. Expansion overseas, however, might serve the same purpose.<sup>46</sup>

In this sense, an expanded Algeria could be regarded not only as a replacement for the lost Alsace-Lorraine, but also as France's equivalent of the American frontier, with the potential to create new fields of opportunity

for French enterprise while expanding the nation's power base. A bold stroke of technical ingenuity by French talent might restore French eminence by opening up a new continental frontier or a new African India.

It is not surprising, therefore, to find the Transsaharan enthusiasts insisting on a French, and not an international complexion to the enterprise. A scheme outlined by one enthusiast, the engineer Alphe de Beau Rochas, would have had the Transsaharan opening up an immense French imperium in the center of Africa, extending down from the Sahara to embrace the entire Sudan and generous portions of the equatorial hinterland, including the northern Congo basin. A network of new Transsafrican railroads crisscrossing this empire would even have spanned the continent to link up with the French-held east African port at Obock.<sup>47</sup>

Railroads had been a great boon to commerce and industry in Europe and America. The common supposition of the Transsaharan enthusiasts was that railroads would generate a comparable phenomenal growth of peaceful commerce in the interior of Africa. The railroad was expected to bring not only a new prosperity to the region, but also peace as it curtailed and supplanted the slave trade--the major source of chronic, endemic warfare in the interior.

There were, however, important differences in opinion over the manner in which construction would be undertaken. For example, in his advocacy of reconnoitering possible rail traces for a Transsaharan with unarmed individuals dependent on local African authorities and at their mercy, Paul Soleillet was clinging to an earlier vision of the European explorer in Africa as the heroic figure on which metropolitan Europe had lavished so much adulation in the recent past. Soleillet's approach, however, also had the merit of making rail construction in Africa hinge on the assent and cooperation of local African authorities.<sup>48</sup>

Others, even while paying lip service to the principle of peaceful penetration in cooperation with Africans, were obviously inclined to more forceful methods. Duponchel, for one, in roundly opposing Soleillet's gentler projects and methods, clearly heralded a new, harsh era in Euro-African relations. When poor Soleillet advocated his contrary opinions too openly and too indiscretely, he was summarily ejected from Senegal by the French governor and obliged to do exploring elsewhere.<sup>49</sup> Even Duponchel was elbowed aside in Algeria by others, including ambitious military officers eager to lead the large armed parties sent to reconnoiter likely traces for the railroad into the Sahara.



Few tears, however, need be shed for Duponchel, whose work hardly merited the attention it received. Though his credentials as an engineer could lend credence to the practicability of the project, Duponchel had, as he himself admitted, drawn up his Transsaharan scheme on the basis of sketchy accounts of earlier explorers of the Sahara and Sudan instead of making personal surveys of the interior himself.<sup>50</sup> He had not been above making misleading comparisons with the American Transcontinental, and when his proposed trace was criticized, he easily abandoned it to advocate another.<sup>51</sup> Duponchel was, in fact, less interested in the technical difficulties of a Transsaharan than in assuming command of a special "Direction" charged with constructing the railroad, and he pressed for the immediate opening of construction work on the Transsaharan without waiting for precise information on the terrain beyond.<sup>52</sup>

It was fortunate, of course, that the Transsaharan project was not undertaken. Aside from the geographical misconception about the mountains of Kong and the obvious economic weaknesses of a long railroad passing through a desert, it is probable that a reliable Transsaharan railroad was never really technically feasible.<sup>53</sup>

The exaggerated faith of the promoters in the potential of the Transsaharan, of course, was a common

vice of railroad advocates in the 19th century.<sup>54</sup> Nevertheless, it is important to note that the project had been foundering even before 1881, not so much on the impracticalities, but because its advocates were hopelessly divided into three irreconcilable factions, each based on a different department of Algeria--Oran in the west, Algiers in the center, and the Constantine-Philippeville area in the east. The central trace originally proposed by Duponchel and Soleillet was of little interest to the eastern railroads (the Bone-Guelma and East-Algerian), which had no rail line with Algiers at this early date, or for the ardent partisans of Oran, eager to make their region the terminus of an expanding frontier.<sup>55</sup> Each Algerian region could marshal friends in the metropole, and the choice of a departure point soon deadlocked the Transsaharan commissions.

About the best chance for a rapid solution came during the July 29th session of the 2nd sub-commission, which recommended a line of departure from Biskra to Ouargla--a trace equally accessible from Algiers or Constantine.<sup>56</sup> However, led by military officers sympathetic with a trace from Oran, the first and third sub-commissions soon rallied against the proposal, and it was quashed in a plenary session of the full Commission.<sup>57</sup> Henceforth, studies were pursued along a multitude of traces,

until the debacle of the Flatters expedition quenched the Transsaharan enthusiasm. The divisions of the Transsaharan enthusiasts, however, presented an ideal opportunity for exponents of another scheme for reaching the Sudan from a different direction--from the colony of Senegal.

Jauréguiberry The arrival in Senegal of Louis Brière de l'Isle, colonel of marine infantry, as governor in 1876 is often cited as opening the second period of expansion of the colony. Brière's governorship from 1876 to 1881 was a period of intense activity during which the contours of the future Senegal began to take shape.<sup>58</sup>

Brière was indeed intent on resurrecting Faidherbe's dreams of military expansion, and he proceeded in short order to initiate military actions in two widely separated areas--on the Upper Senegal and in the coastal "Southern rivers."<sup>59</sup> Ineffectively restrained by a not always well-informed Ministry of Marine and Colonies in Paris, Brière's scope for aggressive action was, nonetheless, very limited until the appointment in January 1879 of Admiral Jean Bernard Jauréguiberry as Minister of Marine and Colonies--a key figure, as Newbury and Kanya-Forstner have pointed out, primarily responsible for initiating the rebirth of colonial expansion in Senegal.<sup>60</sup>

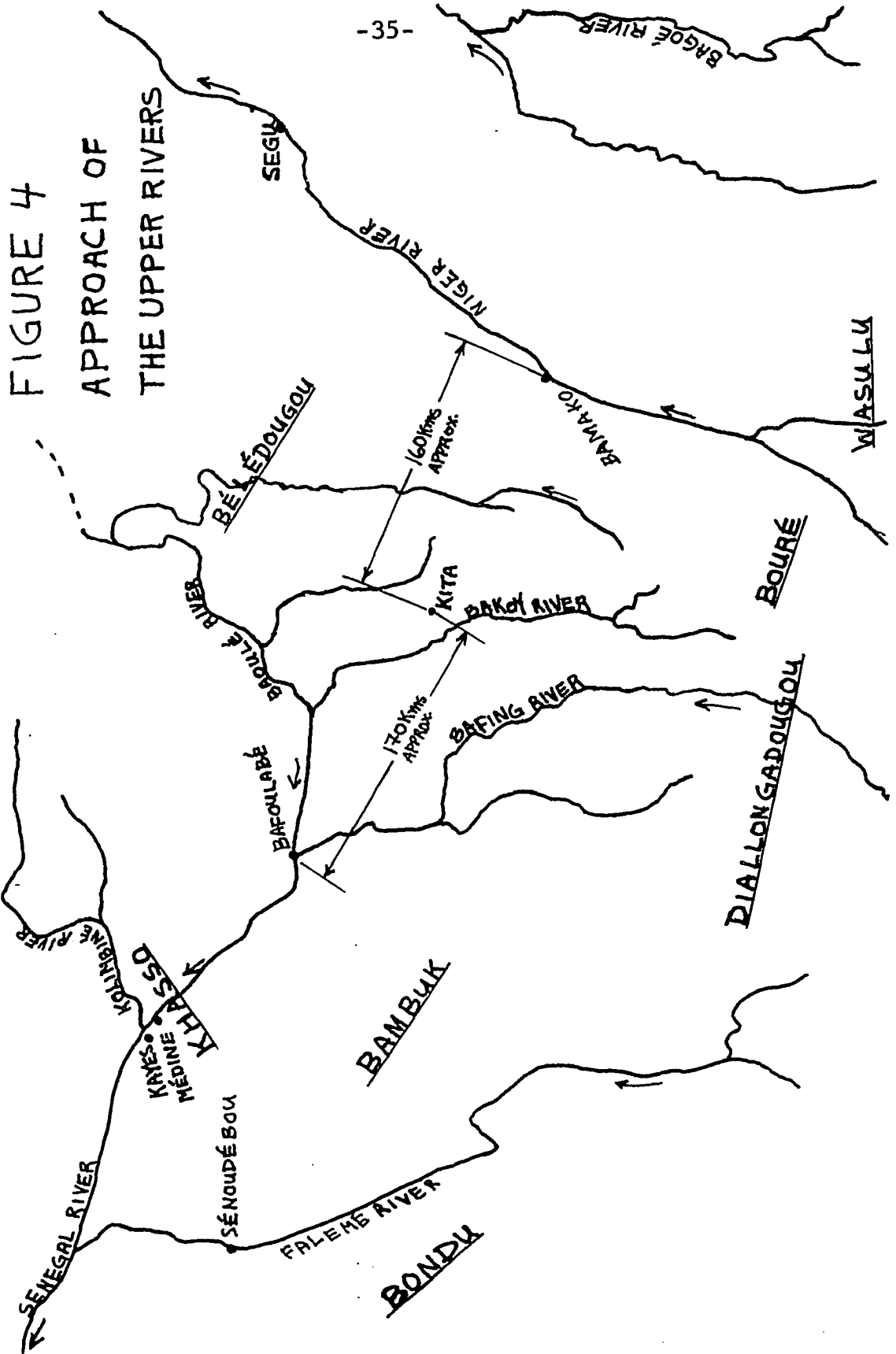
On taking office in 1879, Jauréguiberry was reach-

ing the pinnacle of a career in which he had already distinguished himself as a commander in Vietnam and China during the Far Eastern campaigns.<sup>61</sup> Rewarded afterward in December 1861 with the governorship of Senegal, replacing Faidherbe, the young Jauréguiberry had erred badly in a treacherously-complicated situation in Cayor, and the situation was retrieved only with the return of Faidherbe. As governor in 1862, Jauréguiberry had proposed subduing Cayor by building a good road, then a railroad, to the post of N'Dande in the interior.<sup>62</sup> He can only have been delighted 17 years later, when Brière submitted to the ministry a new, updated and detailed version of a railroad project into Cayor.

Brière's project concerned only construction of a railroad between Dakar and St. Louis. But it was obvious that the current enthusiasm for a Transsaharan provided an excellent opportunity for more ambitious projects from Senegal.<sup>63</sup> A glance at a map would immediately show that a railroad of 1200 kms from Senegal to the Sudan made much more sense than a 2400 km Transsaharan built across a desert; and a Senegal-Sudan project, as Duponchel for one recognized, was in reality a dangerous rival to a Transsaharan scheme (See Figure 3).<sup>64</sup> Rapidly, Brière was able to put together a plausible program calling for exploratory studies of a long rail line consisting of three major links: one from Médine on the Upper Senegal to the

Niger; one between Dakar and St. Louis; and one intermediary link between St. Louis and Médine. This was not difficult, because the general idea had been entertained in one form or another over the previous twenty-odd years.

The Senegal-Niger link The origin of French ambitions on the Upper Niger lay in Anne Raffenel's observation in 1856 of the flat profile of the watershed between the upper reaches of the Senegal and Niger rivers, whose tributary systems seemingly stretch out to approach each other closely at some points (see Figure 4).<sup>65</sup> Given contemporary revelations about the richness of Hausa country in the east, it seemed as though a lucrative trade might be established to this region from Senegal if only a relatively short gap between the Senegal and Niger rivers could be bridged. With this in mind, Faidherbe had sent a preliminary mission in 1863 under Lt. E. Mage to reconnoiter the terrain between the upper rivers and to negotiate with the Segu Tukulor empire for an exclusively French commercial route to the Niger, guarded by five new posts.<sup>66</sup> Little had come of it; but by the late 1870's it was still thought that construction of a railroad or a canal between the two riverways would form a thin, but firm link from the coast into the Sudanese heartland. Speculatively wild as the notion of an inter-river canal or railroad far in the interior may appear



to the modern observer, the notion--bolstered as it was by the misconception about the "mountains of Kong"--did not seem unreasonable to contemporaries witnessing a phenomenal growth in the Americas along rails and canals.<sup>67</sup> Certainly these speculations could be used to justify previous and ongoing French sacrifices to control the imperfect, irregular Senegal river, which at least was situated more closely to the Niger than the shorter, nautically superior Gambia held by the British.

Despite the hostility of some members of the Transsaharan Commission, the Senegal scheme had, in fact, little trouble in obtaining quickly a strong measure of acceptance on the commission. Freycinet's benign attitude certainly played a role in this acceptance, for the Senegal rail project soon won an equal priority with the Transsaharan.

Jauréguiberry made Inspector of Naval Works N. Legros directly responsible for steering the Senegal-Sudan rail project past administrative shoals on its way to approval and funding, and Legros was specifically authorized to correspond directly with the governor of Senegal on this question.<sup>68</sup> It was Legros who, in expounding the merits of a Senegal-Sudan rail link (claiming notably a gap of only 180 kms between navigable portions of the Senegal and Niger river systems), obtained full recognition for the

Senegal project in the resulting decree of July 13, 1879.<sup>69</sup> This decree, which set up a full commission to study the Transsaharan not only implicitly legitimized future exploratory studies of a Senegal-Sudan route, but specifically turned over responsibility for these studies to the Minister of Marine.<sup>70</sup>

Likewise, the full Transsaharan Commission posed few problems for Legros. One of the advocates of an easterly Transsaharan even issued a report recommending that the Transsaharan should be directed eastward toward Hausa country and Lake Chad, while leaving Timbuktu and the upper Niger valley to a railroad from Senegal.<sup>71</sup> An easterly Transsaharan, unlike the original goal of Timbuktu, would certainly have been complementary to a Senegal rail scheme, and perhaps a conjunction of interests between advocates of an eastern Transsaharan and those of a Senegal link may have been translated into political cooperation. It may not have been entirely coincidental that the parent company of the east Algerian Bône-Guelma railroad later became the builder of the Dakar-St. Louis railroad in Senegal. In any case, Legros was able to obtain resolutions favoring the Senegal project during the July 29th and August 14th sessions of the second sub-commission and the August 18th session of the first sub-commission.<sup>72</sup> He even hoped to obtain funding for exploratory studies



from the Ministry of Public Works, but Freycinet declined, even while approving the Senegal scheme in principle.<sup>73</sup>

Jauréguiberry's precipitous occupation of Bafoulabé, a strategic point 100 kms east of Médine, during the parliamentary recess did not fail to arouse adverse comment from members of the third sub-commission; but Legros merely shrugged it off.<sup>74</sup> Foes of the Senegal scheme on the Transsaharan Commission were able to draw blood only in obliging Legros to abandon plans for an intermediate rail link along the heights paralleling the Senegal river. A minor flaw then in the general picture, it unfortunately forced postponement of plans for any intermediate railroad after a reconnaissance in 1879 of an alternative route across the Ferlo to Bakel revealed that this barren region was entirely unsuitable for a rail line.<sup>75</sup> Ultimately, the omission of this part of the overall project was to cripple severely the construction of an Upper Senegal rail link inadequately supplied by the unreliable Senegal river.

In February 1880, nevertheless, Jauréguiberry deposited a bill with parliament calling for authorization and funding of construction on two rail links: a Médine-Bafoulabé line as the first leg of an Upper Senegal railroad; and a Dakar-St. Louis rail line.<sup>76</sup> Only the Dakar-St. Louis rail link had ever been the object of an extensive studies.

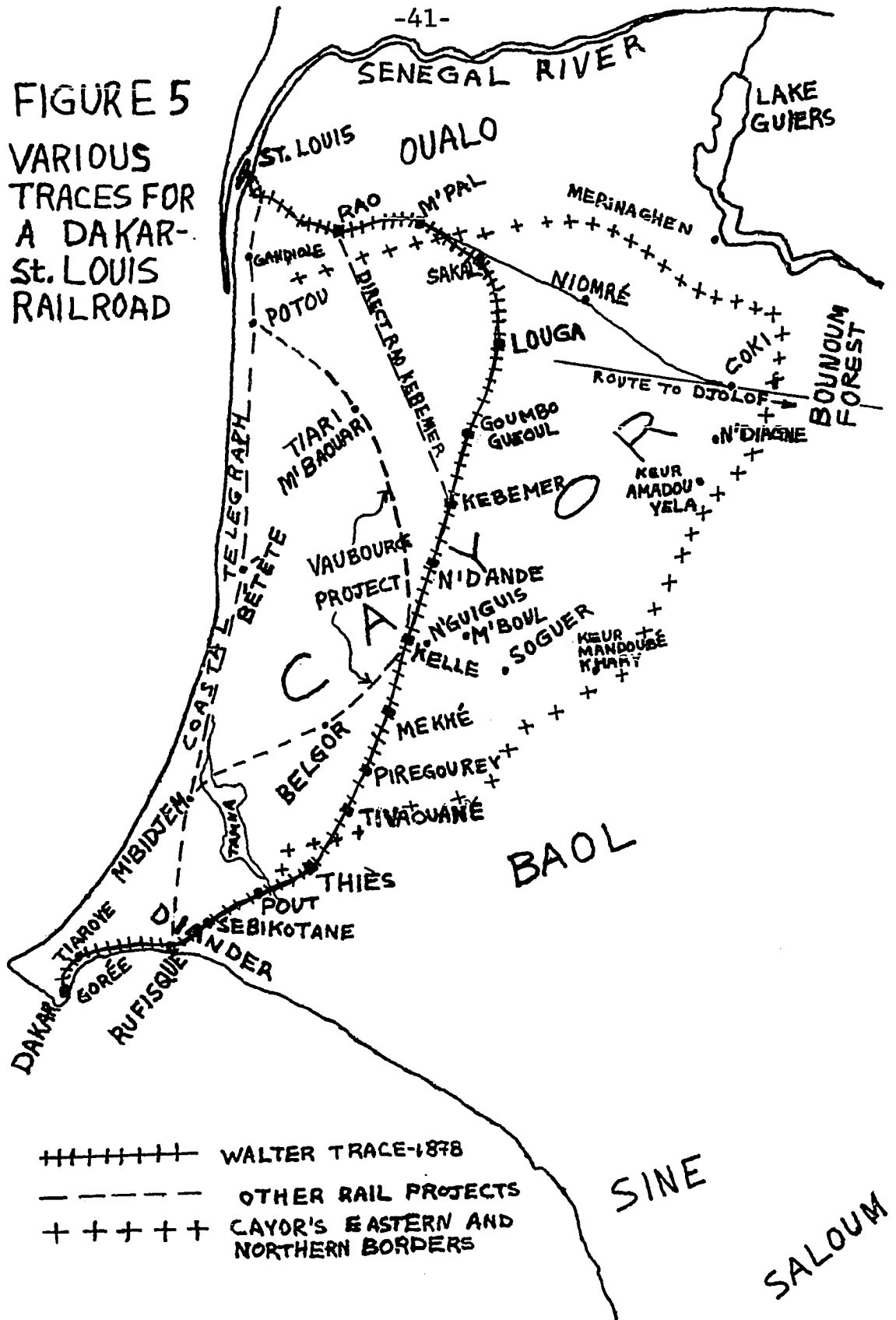
The Dakar-St. Louis railroad    The Dakar-St. Louis rail project of 1880 embodied two strategic concepts. To begin with, a rail line to Dakar would remedy the disadvantages of a difficult entry to the port of St. Louis by providing a direct link between the two ports. On the one hand, this would simplify political and administrative control of the colony by assuring communications between its two major centers. On the other hand, this rail line would also seemingly assure St. Louis and the Senegal river basin a more reliable commercial link to the sea at Dakar by allowing through transshipment by rail. This concept had been the driving force behind the coastal rail line proposed by Pinet-Laprade in 1856, at a moment when the political division of the two wings of the colony into independent units from 1854 to 1859 was already proving unsatisfactory.<sup>77</sup> Though recognized as overoptimistic in its cost estimates, Pinet-Laprade's proposal was indeed favorably received by the Minister of Marine in Paris, who was prepared to go as far as endorsing a scaled-down effort with rail transport on horse-drawn carts.<sup>78</sup> The proposal, however, apparently met with stiff opposition from Faidherbe himself. The governor of Senegal was in fact reversing an earlier call that he himself had made in 1853 for an overland rail link between St. Louis and Gorée.<sup>79</sup> In 1857, however, it had been plain that a

possible diversion of river trade to Dakar from St. Louis would imperil the commercial prosperity of the town that Faidherbe had selected as the principal base for his dreams of imperial expansion.

A second strategic concept--that of the military dominance of Cayor--was however also emphasized increasingly in subsequent proposals for a Dakar-St. Louis railroad. Already in 1862, Jauréguiberry had proposed for military reasons a narrow-gauge animal-drawn railroad detouring from the coastal trace at Potou towards a post at N'Dande in central Cayor.<sup>80</sup> In 1872, a colonial official, Hippolyte Vaubourg, came up with a similar version of a Dakar-St. Louis railroad penetrating deeply into Cayor. Beginning with a coastal trace at St. Louis, Vaubourg's line would also have veered sharply inland at Potou and passed via Tiari M'Baouar to Kelle, a caravan junction not far from N'Guiguis. From Kelle the trace ran southward via Belgor to rejoin the coastal trace at M'Bidjem before reaching first Rufisque, then Dakar (see Figure 5).<sup>81</sup>

Vaubourg hoped to astound the Africans of Cayor with a locomotive clipping along at 35 to 40 km per hour and belching fire and smoke. But clearly it was the military and strategic aspects of the railroad that interested him. A railroad for one thing, he noted, would

FIGURE 5  
VARIOUS  
TRACES FOR  
A DAKAR-  
ST. LOUIS  
RAILROAD



- +++++ WALTER TRACE-1878
- OTHER RAIL PROJECTS
- +++++ CAYOR'S EASTERN AND NORTHERN BORDERS

weaken the political influence of the Moors in Cayor by ending their dominance of the carrying trade in that country. "Next," he wrote,

an immensely weighty advantage of the first order arises; that is, the immediate and inevitable end of all our wars with Cayor . . . that we would dominate by the rapidity with which we would throw our expeditionary columns into the area where the damel would be found in case he tried to interfere with the operation of the railroad.

Vaubourg also vaguely predicted a doubling of peanut production in Cayor, but neglected to advance any figures. He estimated instead that the railroad's main revenues would come from goods shipped from St. Louis and Rufisque to Dakar and vice-versa. In any case during that era of budgetary restraint, Vaubourg's project received scant attention from the incumbent governor and even failed to arouse much enthusiasm from the local merchants.<sup>82</sup>

The Dakar-St. Louis rail project was taken more seriously by Brière as soon as he arrived in the colony. Aside from the strategic advantages of assuring the colony a reliable access to the sea from St. Louis, Brière was plainly intent, despite skepticism encountered in the colony, on using the railroad to dominate Cayor.<sup>83</sup> During his governorship (1876-1881), Brière enjoyed good relations with the damel of Cayor. But in relaying his railroad project to the ministry in Paris, in 1878, Brière wrote,

It is to be feared that either by the progress of Islam or under the press of events that cannot be foreseen . . . that the administration of the colony, tied down on the Upper River or the countries of the middle Senegal, finds itself on a given day very embarrassed by Cayor--this turbulent country of difficult access--while it would always be at our discretion, if it were traversed by a railroad.<sup>84</sup>

Indeed as early as 1876, renewed studies of a Dakar-St. Louis rail project were calling for a trace passing even more deeply into Cayor with military domination the obvious intention. This was evident in a report of 1876 rejecting a proposed direct, linear rail trace between the villages of Rao and Kebemer in favor of another plunging much farther inland.<sup>85</sup> First of all, this report remarked, a linear Rao-Kebemer trace, passing through areas alternately uninhabited or creased by deep ridges, would have been "placed too near the maritime zone, a depopulated land, without commerce, without agriculture, and without a future . . . too far from the rich eastern countries of Cayor; it will leave unserved the most populous centers, and their transports to St. Louis will be lost."<sup>86</sup> Then, continued the author, turning to his primary concern,

The combats that have had important results always took place in the east where the wealth of the country drawn from the countryside would permit indigenous armies to subsist freely and from which these same armies could flee after defeat to the forest of Bounoum, which would conceal them from any serious pursuit by us. An army of Cayor is not going to put itself so close to the sea where it could be trapped and consequently destroyed. Besides [our] columns will always avoid operating in a country so overgrown . . . Thus a [direct Rao-Kebemer] rail line

could be used only for a special case--the transport of troops from St. Louis to the south of Cayor.

A trace detouring into populated areas farther to the east therefore not only had certain commercial and technical virtues, but would enable French troops to seize quickly Cayor's major centers of resistance and granaries in case of war.

When a full technical study of a railroad trace was issued in 1878 under Brière's watchful eye, it barely alluded to these strategic principles, but indeed clearly incorporated them. Drawn up by Walter, the chief of the colony's Ponts et Chaussées service, this project called for an inexpensive, one-meter gauge, single-track railroad on a path well to the east, roughly through the geographical center of Cayor.<sup>87</sup> The strategic value of this 260 km trace is evident. Starting from Dakar, the trace ran through French territory, passing Rufisque to reach Thiès, a military post overlooking the strategic junction between Cayor and Baol.<sup>88</sup> At its northern end, the line ran eastward from St. Louis to M'Pal, a military post overlooking, on Cayor's northern border, the main routes for Djolof to the east and Lake Guiers to the north. Between Thiès and M'Pal, the railroad trace would imbed in Cayor nine stations or way-stations, spaced 10 to 22 kms apart (out of a total of 18 stations for the entire rail line). While this trace missed many large

villages of Cayor--notably Niomré, Coki, Soguer, K. Mandoubé Khary--the inflection of the line as much as 30 kms inland from the earlier projects (the Rao-Kebemer detour alone adding some 27 kms of extra track) brought the line much closer to those centers, while closely approaching such well-sized villages like Louga, Mekhé, Kelle, and Pire.

The Walter project, largely a technical analysis of construction specifications and cost estimations based on on-site surveys of the terrain, asserted, like the Vaubourg project, that the railroad would develop trade with Cayor. Nevertheless, Walter estimated that only 3% of the railroad's revenues would come from passenger traffic within Cayor, and he made no estimate of freight traffic with the interior. Like Vaubourg, Walter based his optimistic estimates for rail revenues almost entirely on the movement of goods and passengers to Dakar from the towns of St. Louis and Rufisque, and vice-versa.

Selling a railroad The Transsaharan commissions had posed relatively few problems for the Senegal-Sudan rail project but the National Assembly was to prove another matter. One major, consistent theme of later imperialist hagiographic literature (and publicity) was the supposedly shortsighted parsimony of the metropolitan parliament, for indeed budgetary problems lay at the crux of the



French colonial problem. It had been budgetary frugality that had stifled a budding French expansion in the region in the 1860's; budgetary restrictions were to mold the shape of colonial policy forcefully later in the 20th century. In the late 1870's, the promoters of French imperialism were still trying merely to wedge open the coffers of a closed French treasury, and it was their distinction that they succeeded in large measure.

Although the cynicism of the principal actors may be difficult to gauge in the unfolding drama, Kanya-Forstner certainly seems correct in asserting that it was (at least in part) a question of officers seeking promotion by provoking "glorious" combats and conquests.<sup>89</sup> An unavoidable part of this process involved obtaining the funding--and the specialized personnel and equipment that would be acquired along with the funding--to enable the "glorious" actions to take place. It was a matter of that well-known bureaucratic game of justifying an expanded budget and staff, even in the face of government frugality.

Provoking incidents and misrepresenting them as defensive was, of course, one method of obtaining funds.<sup>90</sup> But Briere's complaints about the "anarchy" in neighboring African states or about alleged British encroachments from the nearby Gambia into the interior could have had only a limited appeal at the time; it had all been said before in the 1860's. A project for peaceful penetration

by rail had a more appealing ring, and subsequent correspondence between the ministry and the colonial government in Senegal was indeed drafted to bolster assertions that this was what was taking place in the colony.

The decree of July 1879 authorizing studies of a railroad had already been enough to justify a spate of new reconnaissances throughout the Senegal-Sudan region, and even some armed expeditions.<sup>91</sup> It was indeed because Soleillet had protested too loudly about the military nature of these expeditions that he had been tossed out of the colony in 1880.

Legros' attitude is revealed succinctly in his handling of budgetary estimates for the costs of rail construction. Walter's optimistic estimate of 1878 for a 260 km, narrow-gauge Dakar-St. Louis railroad was the bargain price of 6,500,000 francs, or 25,000 francs per kilometer--but then, Walter was known for overoptimism.<sup>92</sup> The ministry's Council of Naval Works had revised the estimate upward radically to 12 million francs, or 46,200 Fr/km, and in November 1879 Legros was estimating construction costs at 50,000 Fr/km for the Dakar-St. Louis link, 60,000 for a St. Louis-Médine link, and 80 to 90,000 Fr/km for the Médine-Niger link.<sup>93</sup> By December 20th, Legros had hiked his estimates for the two former lines to 62,440 Fr/km and 71,800 Fr/km respectively; but these

estimates, as incorporated in a note of the ministry's Director of Colonies, were rejected as too optimistic by Jauréguiberry himself.<sup>94</sup> Replying in a note of January 8, 1880, Legros merely rounded off previous estimates to offer an overall cost estimate of 120 million francs total for all three rail links. Legros confessed that only his figures for the cost of transporting materiel to Senegal might be accurate. "I refrain," he wrote, "from being as affirmative about the other items of evaluation, for it is manifest that my calculations only rest on hypothetical data, except for the DSL line, which was studied on site." But, he asserted,

it would be difficult, if not impossible, to indicate in advance even approximately a figure for additional expenses . . . and besides it does not seem to me that it is worthwhile being obsessed with it, considering that for most lines under construction today in the metropole, the cost of putting in the substructure reaches 100,000 to 150,000 [Fr/km]; which does not impede parliament from voting [the credits] on the recommendation of the Minister of Public Works, although from the viewpoint of the general interest of the country, they undoubtedly have much less importance than the lines projected in Senegal.<sup>95</sup>

Thus, the Senegal-Sudan rail link was, like its contemporary rival, the Transsaharan, a leap into the unknown carrying with it patriotic dreams and personal career ambitions. But would the rest of the country go along?

Legros hoped to convince a skeptical parliament with a careful orchestration of information arriving from Senegal. Like the Transsaharan, the Senegal scheme was

presented as an eminently pacific project designed to reduce internecine warfare in the African interior by promoting commerce. It was asserted that the terrain to be crossed was flat (largely true), that Africans welcomed the railroad (untrue), that cheap African labor could be recruited easily (untrue), and that materials for construction could be found in Africa (misleading). On the other hand, there was virtually no serious discussion of the colony's malignant sanitary problems, although the recent yellow fever epidemic of 1878 had killed fully half the whites then residing in the colony.<sup>96</sup>

For one thing, Brière was ordered to elicit a nominal subsidy for the Dakar-St. Louis rail project from the colony's elected General Council, in order to demonstrate publicly the willingness of the colony's citizenry to participate in financing the railroad. This was relatively easy to obtain, despite some local skepticism, since the rail projects would obviously have stimulated local business activity.<sup>97</sup> Senegal's deputy to parliament was an ardent partisan of the railroads, and one local commercial house even offered to undertake construction of a rail link between St. Louis and Médine.<sup>98</sup> The ministry's solicitation of this subsidy was however something of a sham, for the ministry was also dead set on preventing the General Council from having a voice in setting railroad policy as a subsidy would have entitled it. When the General Council asked, a short time later, to be

released from its commitment, the ministry consented willingly.<sup>99</sup>

Likewise another piece of useful publicity for the railroad was the treaty of September 10, 1879 signed by the damel of Cayor to authorize construction of the line through his realm along with a second convention promising aid in obtaining labor locally for construction work.<sup>100</sup> On the surface, this would tend, along with other treaties being obtained on the Upper Senegal, to corroborate ministry claims that Africans were welcoming the railroad.<sup>101</sup> In reality, the damel Lat Dior had probably only signed the treaty, without really understanding its terms, simply in order to obtain French support during coincidental domestic troubles in Cayor.<sup>102</sup> The treaty's vague references to **the** "route commercial" and way stations for travellers to be built in Cayor (there were no references to rails and only one to locomotives) were certainly not designed to enlighten Lat Dior too much. Perhaps colonial authorities really did hope to beguile the damel as well as the French public. However, when Lat Dior perceived the colony's true intentions in 1881, he promptly repudiated the treaty and forbade construction of a railroad through his domains.

It is doubtful that Jauréguiberry himself really believed the optimistic assessments that he was receiving from Briere or ministry officials. As a former governor of Senegal, Jauréguiberry would have been well aware both

of the pitfalls of treaties in this region of confused internecine warfare and of the difficulties of construction in a tropical climate. Certainly Jauréguiberry was also being warned of some of the risks of the undertaking by skeptical correspondants in Senegal.<sup>103</sup> He chose, however, to discount these warnings while merely admonishing Brière mildly to temper his more optimistic forecasts. Brière frequently asserted that his difficulties with adjoining African states and in Paris had really originated from the secret machinations of prominent Senegalese merchants against his administration, and ministry officials apparently accepted these assertions to some degree.<sup>104</sup> At any rate, the rail projects soon came to grief against increasing difficulties.

The Dakar-St. Louis blocked Legros, who had probably believed Brière's assurances about the ease of recruiting African laborers for construction work on the Upper Senegal, had hoped to start railroad construction early in 1880 by building a good supply road from Médine to Bafoulabé on which the tracks would later be laid.<sup>105</sup> However, recruiting workers was difficult in a labor-scarce region where those working at menial tasks for the white would be scorned as servile. Some chiefs on the Upper Senegal might have promised facilely to supply workers; but few workers appeared. By March, little had been done on the

road. Never one to admit errors, Brière tried to use the unpromising start to get more technical personnel assigned to the colony, and he finally blamed the debacle on the luckless engineer charged with the project.<sup>106</sup> But, it was henceforth evident that recruiting laborers for road or railroad construction was going to be a major stumbling block in this region.

An episode occurring shortly thereafter in May had even more serious immediate consequences. A combined exploratory and diplomatic mission to the Segou Tukolor empire was ambushed enroute and its baggage taken. The members of the mission managed to reach Segou safely; but its ruler was so irate at the mission's attempts enroute to treat with his enemies that he confined its members to a small, nearby village instead of allowing them to enter Segou. Eventually, a treaty was arranged (the treaty of Nango of November 1880), but meanwhile the mission's plight was embarrassing for proponents in parliament of a "peaceful" Senegal-Sudan railroad.<sup>107</sup>

Legros, who had already agreed to whittle down to 40 kms the earlier project request for a 100 km line to Bafoulabé, was startled in June 1880 when the Budget Commission of the Chamber of Deputies rejected this compromise. Members of the Commission had expressed surprise at the "novelty, audacity, and breadth" of the

ministry's projects, and at "the insistence with which it had set out to obtain a quick vote."<sup>108</sup> Legros was furious. The Commission's "rapporteur" had forgotten, Legros wrote, that

if one wishes to advance to the Niger, it is of the highest import to pursue the enterprise with no delay, with no hesitation. If . . . the minister is not assured of parliament's support under the conditions he specified, if he is begrudged the necessary credits, there will be no choice, except to leave the bill deposited with parliament while disclaiming all responsibility, until the program is accepted without restriction. 109

It was not an approach that would win many friends; and in the interim only a meager appropriation of 1.3 million francs was granted, much of it for funds already spent.<sup>110</sup> When the railroad bill finally reached parliament in November 1880, Jauréguiberry had been replaced as minister by Admiral Georges Cloué, whose bumbling support of the bill during parliamentary debates did not help its passage. The questionable practicality of the railroad from Médine drew much criticism during parliamentary sessions in November 1880 and February 1881; but opponents of the measure, including some advocates of the Transsaharan, preferred the tactic of amending important financial details of a proposed concession of the more practical Dakar-St. Louis rail link.<sup>111</sup> As a result, there were successive delays in adopting the measure despite nominal majorities in its favor, and the opposition was



even able to force a technical review of the Dakar-St. Louis project in March 1881.<sup>112</sup> In a neat parliamentary maneuver, however, the project's supporters detached from the bill those unamended provisions concerning only the Médine line; and these were quickly passed, while the Dakar-St. Louis provisions were sent back to committee.<sup>113</sup> By a strange quirk, the government was able to undertake the least accessible, least practicable portion of the Senegal-Sudan rail project. With only the Senegal river as a connecting link, the two separate wings of the Senegal rail scheme were henceforth to pursue their own separate destinies. That in the Sudan was to form a major part of the rationale for the opening campaigns of military expansion into the Sudan.<sup>114</sup> But, for about a year the Dakar-St. Louis project marked time.

Jauréguiberry returns Although the ministry remained interested in Senegalese railroads under Cloué's administration, the question was pursued with much less resolve. In March 1881, Cloué summarily relieved Brière of his command in Senegal and Legros was also obliged to retire from involvement with the rail projects.<sup>115</sup> In July 1881, the Senate passed a modified form of the bill authorizing a Dakar-St. Louis railroad; but it was too late to send it on to the Chamber. On the Upper Senegal, yellow fever and transportation snarls completely ruined the first railroad construction campaign of 1881-1882. In Cayor,

the damel Lat Dior, apprised in the spring of 1881 by an indiscrete interpreter that the railroad would allow steam-driven "land-ships" to roll through the middle of his realm (and thereby dominate it militarily), chased surveying parties from the countryside and threatened war in case the rail project was undertaken.<sup>116</sup> Only Lat Dior's own precarious domestic situation prevented him from warring with the French colony, which was badly weakened at the time by a reappearance of yellow fever.<sup>117</sup>

The situation changed decisively with Jauréguiberry's reentry into office as Minister of Marine in Freycinet's second government in February 1882.<sup>118</sup> The colonial department, briefly annexed to the Ministry of Commerce during Gambetta's ministry, was transferred back to the Ministry of Marine. In Senegal, Vallon, a naval officer sympathetic to Jauréguiberry's views, replaced an incumbent governor too pessimistic about plans for Senegalese railroads or military expansion; and when Vallon also began to doubt, he too was replaced.<sup>119</sup> Once again Legros was also consulted about technical aspects of the Dakar-St. Louis railroad.<sup>120</sup>

Jauréguiberry also moved decisively in parliament to clear the way for a Dakar-St. Louis railroad. This was to be no mean feat, for the recent demise of the Union Général bank in France heralded a period of financial contraction and, thus, resistance from the Ministry of Finance

to additional governmental expenditures.<sup>121</sup> Perhaps Jauréguiberry now found the atmosphere in parliament more congenial than a year before simply because the rival Transsaharan scheme no longer competed with the Senegal scheme for the divided attention of a nascent colonialist party. Several details on the bill already passed by the Senate in 1881 were clarified by May 1882, and this bill authorizing construction of the Dakar-St. Louis railroad passed in the Chamber on June 29th.

The damel of Cayor, of course, still remained as an obstacle. Jauréguiberry had hoped at first to persuade Lat Dior to accept the railroad once again by appeasing the damel on other issues.<sup>122</sup> But Lat Dior, a proud, battle-hardened warrior, was firmly decided against a railroad that posed such a clear military threat. In May 1882, even as the railroad bill was about to be sent to the Chamber, the damel staged a military demonstration of 1000 cavalry and 300 infantry.<sup>123</sup> He pitched another rally in August with an even greater host and was observed reknitting ties to Djolof and the Trarza Moors.<sup>124</sup> Lat Dior's domestic enemies had been assuring the colonial government in secret correspondence that they would welcome a railroad; but those of the strongest of these mutinous factions--the chiefs of the crown bondsmen with their candidate for damel, Samba Laobé--were playing a

double game, and would fight the French when they invaded Cayor.<sup>125</sup>

Jauréguiberry had urged that all means of conciliation be exhausted first, but French officers were planning a campaign in Cayor as early as July 1882, and Jauréguiberry assured the governor of Senegal in October that reinforcements would be sent to the colony.<sup>126</sup> Jauréguiberry was happy to ratify, on December 20th, the governor's decision to end Lat Dior's interference by launching a military force from St. Louis into Cayor.<sup>127</sup>

Cayor taken Thus, on December 26th a flying column of horse cavalry and camel-mounted infantry entered Cayor, its maneuverability and speed increased by new, sturdy supply carts.<sup>128</sup> The column swept easily through the length of Cayor, reaching the capital of Soguer by January 3rd without encountering opposition.<sup>129</sup> With Cayor taken, the French promptly carved its three northern provinces into two new protectorates of N'Diambour and N'Guick-Mérina under the command of reliable chiefs. Over the remnant of Cayor they installed the pretender Samba Yaye Fal as the new damel Amadi N'Goné Fal II, and then undertook to build new posts within the conquered area--first at Louga, then N'Dande.<sup>130</sup>

Taken by surprise, the damel and his supporters had fled immediately from Cayor toward the Saloum. Mass withdrawal from the vicinity of a more powerful enemy, leaving wide

stretches of territory empty in order to deny his armies food and labor, was a basic, sound military strategy in precolonial Africa.<sup>131</sup> Lat Dior had, in fact, repeatedly warned Senegal's governors that if a railroad entered Cayor, he would lead all of his people from the realm.<sup>132</sup> The French colony, with its interest in trade within the interior, would seem particularly vulnerable to the strategm; and indeed with much of Cayor emptying out in 1883 (partly in fear of the war raids to come), the merchants of St. Louis were already complaining of the impending loss of next year's crops.<sup>133</sup>

But a mass exodus from ancestral lands was only possible if the leadership of Cayor displayed a firm unity of purpose. At first the French strategy seemed indeed to be breaking down, as raiding parties led by Samba Laobé and the crown bondsmen in March easily compelled N'Goné Fal to flee to the French for safety. But soon mobile French columns crisscrossing Cayor were harrying Samba Laobé's raiders badly. Frustrated, Samba Laobé and his chief supporters chose to come to terms in return for readmission to Cayor;<sup>134</sup> and the French were well repaid for this leniency as the returning warriors induced many peasants to reenter Cayor for the summer planting.<sup>135</sup>

This desertion badly undermined Lat Dior's increasingly untenable position. Unable to settle in the

Saloum or to check desertions in his dwindling host, the damel was finally forced to seek refuge in nearby Djolof with a few loyalists. Neither his appeals to the French government for clemency nor his raids into Cayor were successful.<sup>136</sup> Lat Dior's plight became even more hopeless as the French chose to reward Samba Laobé in August 1883 by recognizing him as damel in place of the weak N'Goné Fal.<sup>137</sup> Thenceforth, if Lat Dior dared to enter Cayor, he would be faced with the tough cohorts of the new damel's supporters and compelled to leave.<sup>138</sup> For a time, Lat Dior found refuge at a village on the Djolof-Cayor border; but the peace treaty of April 1885 between the French and Djolof ousted him from even this haven. Lat Dior reentered Cayor, begging French authorities for permission to stay, but was expelled again in September 1885.<sup>139</sup>

By then a finished Dakar-St. Louis railroad lay astride Cayor. This thin, binding steel cord of rails had been encased, moreover, within a wider protective sheath of land yielded to the French by Samba Laobé and his supporters in August 1883 as the price for the crown; then widened in December 1884--a narrow strip 50 meters on either side of the track with 300 meter perimeters around each rail station.<sup>140</sup> Now, under these conditions, Cayor lay open indeed to French penetration and domination.

Conclusions The inception of Senegalese railroads reveals more about conditions in metropolitan France than about Senegal itself. Certain military officers serving or having served in Senegal played crucial roles in launching the project; but they had done so within the context of France's role in the world and of their own professional careers, rather than the needs of the peoples of Senegal, or even of the tiny colony already there. In imposing the railroad on the colony, they were projecting their dreams on the distorted picture that they had of Africa and revealing their ignorance of it.

The Senegal-Sudan railroad was based on the same geographical misunderstanding that had spawned the Transsaharan; namely that a rich Sudanese heartland was cut off from the southern coast by the imagined barrier of the Kong mountains.<sup>141</sup> And by following the line of the upper rivers to avoid a nonexistent barrier, the colonial enthusiasts were saddling France with a huge, but underpopulated and relatively unproductive empire.

It is possible to see, in this bizarre imperialist venture that yielded few overall profits to the metropole, the fine hand of selfish, narrow interests profiting at the expense of French taxpayers--namely certain colonial officials and officers who reaped promotions as well as honors. But in so doing, one must not overlook the

psychological and social dimensions of the situation--the fact that it is in blending personal ambitions with ideological fervor that the more potent elixirs for driving social movements are created.

Georges Balandier's observations on apparently economically-irrational behavior among the Fang and Ba-Kongo, interestingly enough, suggest one mechanism that seems to apply to societies in general under the stress of rapid economic and social change. Balandier divined that certain ritualized, competitive gift-giving ceremonies among these people not only served as therapeutic outlets for antagonisms and created new bonds of cooperation between potentially rival parties, but that the ceremonies themselves in dramatizing economic and social relations, "providing as it were a summary of a society as a whole," enabled the participants to grasp the nature of their own social system.<sup>142</sup> Without reading too much into Balandier's particular example, a similar mechanism can also be seen as operating in a wider sense in French society.

It must be remembered that imperial expansion became popular in France at a time when this country was not only being challenged abroad, but badly rent by multiple political and social fissures at home. It was a time when Opportunist politicians and Gambettists were groping for the grounds of a fraternal, national reconci-



liation with such projects as the industrial exhibition of 1878 and Freycinet's railroad program.<sup>143</sup> If garbed in the colors of patriotism and humanitarianism, colonial expansion could also become a terrain for national reconciliation, particularly since the colonies could serve as arenas where certain trusted "verities," new and old, could be displayed and validated; in which soldiers and technologists could be seen not as conquering oppressors, but in their roles as explorers and builders, as benefactors bearing moral truths as well as material benefits. It was an arena in which order and the military virtues could be explicitly reconciled with the forces of nationalism and industrialism.<sup>144</sup>

It would be ridiculous, of course, to dismiss European imperialist acts as merely part of an imperfectly-enacted gigantic dramatic device. But the imperialist efforts were definitely, in part, shadow plays used by each of the European competitors, like the modern space race, to act out basic inter-European antagonisms--demonstrating the national vigor and the validity of its social verities, while avoiding direct confrontations in Europe. The play would never be allowed, as Fashoda showed, to spark war between the colonial powers.<sup>145</sup>

However psychologically pleasing these activities might be, they were producing material results. Momentarily, at least, the treasury's sluiceways had been pried

open to pour cash into the colonies; pieces of territory were being collected to form an empire; a railroad was being installed in Africa. How were the imperialists going about this, and what were they to do with it?

Notes

1. A. Duponchel, Lettre à M. le Président et à Messieurs les membres de la Commission Supérieure du Trans-Saharien (Montpellier, 1880); copy in National Archives of France, rue Francis-Bourgeois (henceforth ANF), F14/12439.
2. The excellent study by John Kellett, The Impact of Railways on Victorian Cities (London, 1969), pp. 1-20, makes a careful distinction between "direct" and "indirect" effects of railroads on Victorian England.
3. See inter alia, J. Lombard, Géographie humaine au Sénégal (St. Louis, Senegal, 1963); Pathé Diagne, Pouvoir politique traditionnel en Afrique occidentale (Paris, 1967); Jean Suret-Canale, Afrique noire, Vol. I, Géographie, civilisations, histoire (Paris, 1968); Donal Cruise O'Brien, The Mourides of Senegal, (Oxford, 1971); Lucy Behrman, Muslim Brotherhoods and Politics in Senegal (Stanford, 1971); Martin Klein, Islam and Imperialism in Senegal, 1847-1914 (Stanford, 1968); B.O. Oloruntimehin, The Segu Tukolor Empire (London, 1972); G. Wesley Johnson, The Emergence of Black Politics in Senegal (Stanford, 1971).
4. See inter alia, the argument applied to Africa in general in J. F. A. Ajayi, "Colonialism: An Episode in African History," in Colonialism in Africa, 1870-1960, Vol. I, ed. by L. H. Gann and Peter Duignan (Cambridge, 1969), pp. 497-509
5. Georges Balandier, The Sociology of Black Africa, trans. by Douglas Garman (New York, 1970), pp. 21ff.; Ajayi, "Episode," p. 508
6. S. Herbert Frankel, Capital Investment in Africa (London, 1938), pp. 375-376.
7. A classic example is the enhancement of the importance of Paris by barring any interconnection between the lines terminating in Paris. See Pierre Dauzet, Le siècle des chemins de fer en France, 1821-1938 (Fontenay-aux-Roses, 1948), and especially Marcel Blanchet, Géographie des chemins de fer (Abbeville, 1942), pp. 164-167.

8. Blanchet, loc. cit., for instance, emphasizes the distinction between the American and European experiences. Local communities and interests could influence railroad construction in America as well (as in Charles Glaab, Kansas City and the Railroads [Madison, 1962]; nevertheless, there does seem to have been a difference in kind as well as degree between the American Far West and European experiences.
9. The French classified their African railroads either as railroads of "penetration" designed to reach deeply into the interior or as railroads of "exploitation" for promising areas near the coast. But in both cases, they were clearly thinking in terms of "pioneering" railroads.
10. The latter point was made explicitly by the first Director of Operations on the Dakar-St. Louis railroad: Alexis Bois, Sénégal et Soudan, travaux publics et chemins de fer (Paris, 1886), p. 39. The Pinet-Laprade railroad project of 1856 referred explicitly to the American example (see Jacques Charpy, La Fondation de Dakar, 1845-1857-1869 [Paris, 1958] pp. 106-108).
11. On the imagery of railroads, see Leo Marx, "The Impact of the Railroad on the American Imagination . . .," in The Railroad and the Space Program, ed. by Bruce Mazlish (Cambridge, Mass., 1965), pp. 202-216. An example of French hopes of astonishing Africans is voiced in Vaubourg's railroad project of January 18, 1872, National Archives of France, Section Outre-Mer (henceforth FOM), Senegal XII,40 (cited in Julian Witherell, "The Response of the Peoples of Cayor to French Penetration," Ph.D. dissertation, University of Wisconsin, 1964, p. 93).
12. Paul Marty, Etudes sur l'Islam au Sénégal, Vol. I (Paris, 1917), pp. 10-11, 17-18.
13. See R. J. H. Church, West Africa: A Study of the Environment and of Man's Use of It (New York, 1968). The African continent's rivers generally rush to the sea through rapids from an inland plateau only a few miles from the coast.
14. Ibid., pp. 14-78; see especially the maps on pp. 47, 64. There are local variations, however, from this east-west pattern. See Raymond Mauny, Tableau géographique de l'ouest africain au moyen age (Dakar, 1961), pp. 356ff.

15. Frederic Riembaud, De Dakar au Niger (Paris, 1908), pp. 72-75, notes the high mortality of horses and camels in such areas as Bondou, the "cercle" of Bakel, and Niani-Ouli. Donkeys, however, had a better resistance than horses or camels, Cf., Mauny, pp. 276ff.
16. The general problem of water scarcity in Senegal and the use of subterranean water is covered in Gerard Brasseur, Le problème de l'eau au Sénégal (St. Louis, Senegal, 1952), pp. 12-15, 65-73.
17. West Africa is a region dotted with markets, both local and long-distance. A. G. Hopkins, An Economic History of West Africa (London, 1973), pp. 51-71, argues effectively concerning the importance of markets for precolonial West Africa. He also argues perceptively that low trade volumes were a question not simply of the low value of products, but also of the low density of potential customers in the region (op. cit., pp. 72-77).
18. One of the more famous routes passed northward via the Bani river, a confluent of the Niger river, to Djenné and beyond to Timbuktu. See Mauny, pp. 406-409.
19. The rivers would draw settled agricultural populations that would exploit the seasonally renewed fertility brought by river inundations. In the case of the Senegal river, for example, cultivation would then shift seasonally (see e.g., Abdoulaye Bara Diop, Société toucouleur et migration / Dakar, 1965, pp. 36-39). Migratory Peul herdsmen in Senegal would also be locked into a migratory cycle of transhumance, alternatively approaching or avoiding the river valleys seasonally.
20. See Hubert Deschamps, L'Europe découvre l'Afrique (Paris, 1967), pp. 13-24; Robin Hallett, The Penetration of Africa (New York, 1965), pp. 125-133.
21. Hopkins, Economic History, pp. 150-151, notes the key role of the steamship; on the military aspect, see Michael Crowder, ed., West African Resistance. The Military Response to Colonial Occupation (London, 1971), especially the Yves Person article, "Guinea-Samori," pp. 111-143.

22. The Hobson-Lenin thesis, which ascribed modern imperialist expansion in great part to the need of European capital for colonial investment is not sustained in the case of French expansion in West Africa, where even the Dakar-St. Louis railroad was largely funded by government subsidies rather than private capital. It is argued here instead simply that the earlier imperialism, of necessity, had to be remunerative in order to be self-sustaining (India, for example, easily comes to mind). The new imperialism could afford to be more profligate.-- For the questionability of the Hobson-Lenin thesis, see Martin Wolfe, ed., The Economic Causes of Imperialism (New York, 1972), pp. 1-18.
23. See inter alia, Abdoulaye Ly, La Compagnie du Sénégal (Paris, 1958); Georges Hardy, La mise en valeur du Sénégal de 1817 à 1854 (Paris, 1921); John Hargreaves, Prelude to the Partition of West Africa (London, 1963); Oloruntimehin, Tukolor Empire; Yves St. Martin, L'empire toucouleur et la France. Un demi-siècle de relations diplomatiques (1846-1893) (Dakar, 1966).
24. E.g., A. Aumont, pamphlet for the National Colonial Congress, Paris, March 10, 1889, first galley proof in ANF, 148AP2, pp. 3ff.
25. See A. S. Kanya-Forstner, The Conquest of the Western Sudan (Cambridge, 1969), pp. 28ff. One token of subordination was the payment by the colony--until 1855 when the practice was stopped by Faidherbe--to the chief of the village of Sor for the land occupied at St. Louis itself. See copy of report by Director of Political Affairs accompanying the "arrêté" of January 24, 1865, FOM, unclassified cartons on colonial public works (henceforth TP), (Rawane Boye affair). Cf., R. Rousseau, "Le Senegal d'autrefois. Etude sur le Toubé-Papiers de Rawane Boy," B.C.E.H.S.A.O.F. XIV (July - Sept. 1931), no. 3, pp. 351, 361-364.
26. Kanya-Forstner, Western Sudan, p. 29; Faidherbe specifically referred to Senegal as a new Algeria in a memorandum on Senegal, August 1856, FOM, Senegal I, 43.
27. Oloruntimehin, Tukolor Empire, pp. 85ff.

28. "Rapport sur le défense de la presqu'île du Cap Vert," April 15, 1856, in Charpy, Fondation, pp. 95-106; see also Moniteur du Sénégal, June 17, 1856, no. 62
29. Like the events related in Suret-Canale, Civilisations, pp. 296-304. In his provocative essay on imperialism, Joseph Schumpeter (Imperialism-Social Classes [Cleveland, 1955], pp. 68ff.) asserted indeed that "capitalism" was intrinsically peaceful, whereas imperialism was caused by "atavistic" elements in society; but one could argue just as forcefully that the industrialism and technology that are generating modern forms of capitalism also bear inherently aggressive features. In essence, however, Schumpeter seems correct in pinpointing those elements of society likely to be attracted by these aggressive features.
30. A contract for electrical municipal lighting was concluded by the commune of St. Louis in 1887. See contract of November 30, 1887 with H. Vaubourg, copy in unclassified "fonds du Sénégal" in the National Archives of Senegal (henceforth SARS), unclassified railroad dossiers (henceforth DCF). On the auto in the Sudan, see interview with General Berdoulat, doc. no. 41, National Archives of Senegal (henceforth ARS), 0244. On an attempted flight over the Sahara from North Africa in 1918, see Georges Hardy, Le Sahara (Paris, 1930), pp. 170-171.
31. See Theodore Zeldin, "Higher Education in France, 1848-1940," in Education and Social Structure in the Twentieth Century, ed. by Walter Laqueur and George Mosse (New York, 1967), pp. 75-77; Rondo Cameron, France and the Development of Europe, 1800-1914 (Princeton, 1961), pp. 46ff.
32. The role of the engineers in promoting colonial expansion has yet to be studied. Henri Brunschwig called attention to the importance of the subject in "Note sur les technocrates de l'impérialisme français en Afrique noire," Revue Française d'Histoire d'Outre-Mer, LIV (1967), no. 194-197, pp. 171-187.
33. Report of April 15, 1856, in Charpy, Fondation, p. 98.
34. Kanya-Forstner, Western Sudan, pp. 45-57; John Hargreaves, Prelude to the Partition of West Africa (London, 1963), p. 165.

35. Kanya-Forstner, Western Sudan, p. 47, notes that Médine was almost abandoned in 1870.
36. Lt. Colonel Barratier, A travers l'Afrique (Paris, [1910]), p. 21.
37. The sense of isolation for residents of the colony was captured by Pierre Loti in his novel, Un roman d'un spahi (published 1881) based on his personal sojourn in Senegal.
38. C. W. Newbury and A.S. Kanya-Forstner, "French Policy and the Origins of the Scramble for West Africa" Journal of African History, X (1969), no. 2, pp. 253-276; see also Kanya-Forstner, Western Sudan, pp. 60-72, 84-94. Although Newbury and Kanya-Forstner have done a thorough exposé on the reasons for a resurgence of French imperialism in West Africa from 1879, it is necessary to cover much of the same ground in this study in order to bring some railroad aspects of the story into focus.
39. Principally dossiers of the Public Works ministry, ANF, F14/12436 through F14/12439; and FOM, Afrique XII, 2.
40. Hanotaux had proposed a Transsaharan as far back as 1859. See G. Saint-Yves, "Le transit entre l'Algérie et le Soudan et le projet du Transsaharien," Revue, Société de Géographie de Tours, September 1886, no. 9, pp. 285-297; Jules Gros, Les voyages de Paul Soleillet dans le Sahara et dans le Soudan en vue d'un projet d'un chemin de fer transsaharien (Paris, 1881). See also Agnes Murphy, The Ideology of French Imperialism (Washington, 1948), pp. 76-80.
41. See Charles de Freycinet, Souvenirs, 1878-1893 (Paris, 1913), pp. 7-18, 78-86. The project eventually expanded to cover 8,800 kms of rails. Cf., E. Beau de Lomenie, Les responsabilités des dynasties bourgeoises, Vol. II (Paris, 1947), pp. 26ff.
42. See the report of the Director of Railroad Construction to Minister of Public Works (henceforth MTP), May 7, 1879, ANF, F14/12438, on the formation of the preliminary commission; see also "Note sur le chemin de fer transsaharien proposé par M. Duponchel ... " April 25, 1879, ANF, F14/12437.



43. See P. V., first plenary session of the Transsaharan Commission, July 21, 1879, ANF, F14/12437; P.V., 2nd sub-commission (henceforth S/Com), November 25, 1879, Ibid. The report of the Commission of Public Works, June 8, 1881, Ibid., concluded that the project was premature.
44. Cameron, Economic Development, pp. 42-63, 91-102, 240ff.
45. See ANF, F14/12437, especially P.V., 1st S/Com, August 12, 1879, and P.V., 1st S/Com, September 8, 1879.
46. Raoul Girardet, L'idée coloniale en France, 1871-1962 (Paris, 1972), pp. 18-23, 24ff.
47. See the map labeled "Impérium française d'Afrique" for the Association des Deux Mondes by A. Beau de Rochas and a second map by Rochas showing a network of trans-African railroads labeled: "attached to letter of May 1, 1879," both in ANF, F14/12438. Brunschwig indeed mentions the engineer Rochas in "Note sur les technocrates," p. 173, as representative of contemporary "spéculateurs du progrès." See also, "Mémoire à la Commission Supérieure du Soudan sur l'établissement des Grandes Lignes Africaines," n.d., ANF, F14/12438.
48. "Conférence de M. Paul Soleillet (1e 3 janvier 1876), chemin de fer d'Alger à St. Louis du Sénégal, par Tombouctou," Cercle Rouennais de la Ligue de L'Enseignement, ANF, F14/12438; Baron de Cambourg, vice-president of the Society of Colonial and Maritime Studies, to MTP, ANF, F14/12437. Cf., Deschamps, Découvre, pp. 166-167.
49. The expulsion of Soleillet from Senegal is described briefly by Gabriel Gravier, Note biographique sur Paul Soleillet (Rouen, 1886), pp. 29-31.
50. See Adolphe Duponchel, Le chemin de fer trans-saharien (Paris, 1879), p. 303; letters by Duponchel to MTP, March 20, 1877 and April 16, 1877, ANF, F14/12436; report of February 22, 1878, Ibid. Ironically the explorer Duveyrier, on whom Duponchel depended for much of his information, roundly attacked a Transsaharan as impracticable (P.V., 1st S/Com, August 18, 1879, ANF, F14/12437).

51. Duponchel, Transsaharien, p. 200; P.V., joint session 2nd and 3rd S/Coms. July 26, 1879, ANF, F14/12437.
52. P.V., 3rd S/Com, August 2, 1879, ANF, F14/12437; Note for MTP by Director of Railroad Construction, March 24, 1880, ANF, F14/12438; inter alia, Duponchel to MTP, November 5, 1879, F14/12436; "Note en réponse aux revendications de M. Soleillet concernant la priorité d'idée du chemin de fer Trans-Saharien," May 26, 1879, ANF, F14/12438.
53. Monsieur Maurice Maillat, retired Director of Operations of the Régie Fédérale des chemins de fer de l'AOF, remarked in the spring of 1972 that surveys conducted in the 1950's had concluded that a Transsaharan railroad was technically impracticable.
54. As in H. Craig Miner, The St. Louis-San Francisco Railroad (Lawrence, Kansas, 1972); see also J. Lajard de Puyjalon, L'influence des Saint-Simoniens sur la réalisation d l'isthme de Suez et des chemins de fer (Paris, 1926); Jean Bouvier, Les deux scandales de Panama (Mesnil-sur-l'estrée, 1964), pp. 23-24, 36-37.
55. A map dated December 31, 1882, in ANF, F14/8566, still shows a gap in rail linkage between Algiers and Constantine. See also E. D. Brant, Railroads of North Africa (New York, 1972), p. 39.
56. P.V., 2nd S/Com, July 29, 1879, ANF, F14/12437.
57. P.F., 1st and 3rd S/Coms combined, July 30, 1879, ANF, F14/12437; P.V., Plenary Commission, August 1, 1879, Ibid.
58. See Francine N'Diaye, "La colonie du Sénégal au temps de Briere de l'Isle," Bulletin de l'IFAN, XXX (1968), Series B, no. 2, pp. 463-512.
59. Kanya-Forstner, Western Sudan, pp. 56ff.; Oloruntimehin, Tukolor Empire, pp. 211-223.
60. Newbury and Kanya-Forstner, "Scramble," pp. 262-264. They are indeed correct in asserting the key role of Freycinet in launching the new African policy. I would only quibble on the small point that Freycinet

was not that interested in 1879 in the Senegal route to the Sudan, but went along out of friendship for Jauréguiberry.

61. Jauréguiberry's personal dossier, no. 702, is in the Archives of the Ministry of Marine in Paris (henceforth AMMP); see also Henri Blet, Histoire de la colonisation française, Vol. II (Grenoble, 1946), pp. 206, 219-221, Vol. III (Grenoble, 1950), pp. 16-17, 135, which also points out Jauréguiberry's abiding interest in expansion in Indochina.
62. Governor of Senegal (henceforth GS) to Minister of Marine and Colonies (henceforth MMC), February 17, 1862, FOM, Senegal I,48; GS to MMC, March 8, 1863, Ibid.
63. Brière was certainly aware of the contemporary enthusiasm for a Transsaharan from an early date. See Geographical Society of Lyon to GS, September 9, 1876, ARS, 1G46; GS to MMC, political report, April 21, 1878, ARS, 2B74, p. 20, shows Soleillet arriving for his first journey just as Walter began surveying for a railroad in Cayor.
64. A direct rail link between Senegal and Algeria made no economic sense because overland rail freight rates could not possibly compete with the 20 Fr/ton charged for maritime shipping between the two colonies. The only rationale for a rail line from either colony was to reach the Sudan. See the report by V. Fournié for the 1st S/Com, n.d. [August 18, 1879], ANF, F14/12437; report on the proceedings of the 2nd S/Com through October 27, 1879, Ibid.; report by Duponchel, February 22, 1878, ANF, F14/12436; "Rapport fait a la Commission du Trans-saharien," n.d., ANF, F14/12437; Duponchel, Trans-Saharien, pp. 347-348.
65. Anne Raffenel, Nouveau voyage dans les pays des Nègres, 2 vols., Paris, 1856.
66. E. Mage, Voyage d'exploration au Soudan occidentale (1863-a 1866) (Paris, 1868), pp. 1-3, 12-18.
67. See Dr. F. Ricard, Le Sénégal. Etude intime (Paris, 1865), pp. 398-404; Duponchel, Trans-Saharien, pp. 182-183. The Inspector of Naval Works Legros took the possibility of a cross-country canal between the Senegal and Niger rivers seriously as late as

- March 1880. See the entry of March 16, 1880 in "Resumé analytique des rapports sur l'établissement des voies ferrées entre le Sénégal et la vallée du Niger-11 juin 1879 à 12 octobre 1886, remis par M. Legros en retraite le 1<sup>r</sup> février 1893" (henceforth: Legros Resumé), FOM, TP, pp. 32-34.
68. Entries of July 10, 1879 and July 26, 1879, Legros Resumé, pp. 1-5.
  69. P.V., Preliminary Commission, May 30, 1879, ANF, F14/12437.
  70. "Rapport et avis de la Commission du chemin de fer Transsaharien," n.d. [June 12, 1879], ANF, F14/12437; note to MMC by Legros, June 11, 1879, FOM, Afrique XII, 2; decree of July 13, 1879, copy in Ibid. The Commission's report stated explicitly that the question of the Senegal-Niger link had been taken up only at the insistence of Legros in the name of the Minister of Marine.
  71. Report by V. Fournié for the 1st S/Com, n.d. [August 18, 1879], ANF, F14/12437.
  72. P.V., 2nd S/Com, July 21, 1879, ANF, F14/12437; same, July 29, 1879, Ibid.; P.V., 1st S/Com, August 18, 1879, Ibid.
  73. P.V., Plenary session, August 1, 1879, ANF, F14/12437.
  74. Legros Resumé, August 10-16, 1879, pp. 5-7; same, August 25, 1879, pp. 7-10; same, September 22, 1879, pp. 10-12; report by MMC to President of the French Republic, September 25, 1879, FOM, Afrique XII, 2; P.V., 3rd S/Com, October 24, 1879, ANF, F14/12437; Legros Resumé, November 7, 1879, pp. 13-14.
  75. The valley trace for the railroad was given up because of the reputed unhealthiness of the air around the river for Europeans. See report of the 2nd S/Com through October 27, 1879, ANF, F14/12437; P.V., 2nd S/Com, August 14, 1879, Ibid.; note of December 11, 1879, Legros Resumé, pp. 17-18. On the Monteil mission, 1879-1880, see P-L. Monteil, Un voyage d'exploration au Sénégal (Papeete, 1882), and ARS dossier 1647, which contains his journal of march and other papers.
  76. Kanya-Forstner, Western Sudan, pp. 69ff., follows the fortune of the bill of 1880 in some detail.

77. Memorandum on the colony of Senegal, October 1, 1858, by Faidherbe, FOM, Senegal I, 45. - "But St. Louis can undertake nothing against Cayor unless the Commandant of Gorée will receive the order to cooperate so that this state cannot lean on one of our colonies in order to resist the other--that it could not trade with Gorée while at war with St. Louis. This already happened somewhat with the Trarza, who not only traded with Gorée during the war with St. Louis, but even bought war munitions there."
78. MMC to High Commandant of Gorée and Dependencies, December 30, 1856, in Charpy, Fondation, pp. 111-113.
79. See Faidherbe to MMC, March 4, 1857, FOM, Senegal XII,40; it refers to an earlier "Plan d'occupation de la presqu'île (1853-56)", "Faidherbe to GS, March 15, 1853, in Charpy, Fondation, p. 88; Faidherbe had written in 1853: "St. Louis astride the river, Gorée at Dakar, a good route between, seems to us the goal to pursue. The Americans would have built a railroad a long time ago . . . it is incredible that France has possessed for two centuries two points as important as Gorée and St. Louis . . . and there not be the least land communications between them."
80. GS to MMC, March 8, 1862, FOM, Senegal I,48.
81. Avant-projet of January 15, 1872 by Vaubourg, FOM Senegal XII,40(b); cf., Vaubourg memorandum of April 4, 1872, Ibid.
82. See GS to Vaubourg, January 16, 1872, FOM, Senegal XII,40.
83. GS to MMC, April 8, 1879, FOM, Senegal XII,41; GS to MMC, January 23, 1878 and March 22, 1878, Senegal I,61; GS to MMC, April 21, 1878, ARS, 2B74.
84. GS to MMC, April 8, 1879, FOM, Senegal XII,41. In their review of the project, the ministry's Council of Naval Works commented: "it seems incontestable that we will be led sooner or later to establish this railroad, which will put us in possession of Cayor without striking a blow and would be the first section of a line directed to Médine and towards the Niger (P.V., Council of Naval Works, August 12, 1879, FOM, TP).

85. Draft of report by Lt. Buquet, (n.d.) 1876, ARS, 033.
86. Buquet specifically mentioned Coki as one important center.
87. Walter report, November 25, 1878, signed copy in FOM, TP, Walter asserted that, "The stations serve the most populous, the best cultivated, and the most productive part of Cayor, and the [rail] line seated in the middle of this kingdom will assure our domination over these black peoples, turbulent it is true, but naturally given to cattle raising and agriculture." --Walter began surveying in French colonial territory in 1877 (Walter to Chief of Interior Service of Senegal, November 27, 1877, ARS, 033).
88. On the strategic position of Thiès, see "Renseignements sur le Diankhine," by G. Binger, October 12, 1883, in ANF, 148AP3.
89. See particularly Kanya-Forstner, Western Sudan, pp. 87ff., on Borgnis-Desbordes' motives.
90. I am grateful to T. T. Winant for having pointed out a similar development in the case of the Mukden incident of 1931 in which military officers were initiating a policy of imperialist expansion with mixed ideological and budgetary motives. See T.T. Winant, Tokko Keisatsu, Social Control in Interwar Japan, delivered at the Annual Convention of the Association of Asian Studies, Boston, March 1974; Sadako N. Ogata, Defiance in Manchuria: The Making of Japanese Foreign Policy, 1931-1932 (Berkeley, 1964), pp. 25ff.
91. Missions by Galliénni, Bayol, Piétri, Jacquemart, Monteil, Laude, Vallière, Pol, and later by Dr. Colin and others.
92. Copy GS to Ordonnateur du Sénégal, June 10, 1878, FOM, Senegal I, 62.
93. Excerpt P.V., Council of Naval Works, August 12, 1879, FOM, TP; note by Legros, November 8, 1879, no. 1, AMMP, GG1-carton 45; Legros note for Direction des Colonies, December 20, 1879, no. 2, Ibid.

94. Note by Director of Colonies Michaux for MMC, January 6, 1880, AMMP, GG1-carton 45, bears Jauréguiberry's comments.
95. Note by Legros for Direction des Colonies, January 8, 1880, AMMP, GG1-carton 45 (more complete than same in Legros Resume).
96. Out of 1474 Europeans at Gorée, Dakar, and St. Louis, 749 died in 1878. The figures are in Jean Suret-Canale, Afrique noire, L'ère coloniale, 1900-1945 (Paris, 1964), p. 491, and a higher death rate is noted in Annales d'Hygiène et de Médecine Coloniales, July-August-Sept. 1901, no. 3 published by France. Ministry of Colonies, p.336, published excerpt in FOM, Affaires Politiques (henceforth AP), 3236.
97. Note the skeptical comments by de Montfort, a member of Senegal's General Council, excerpted from the General Council session of February 6, 1882 in Moniteur du Sénégal, December 26, 1882, p. 22.
98. Gasconi to Engineer [Legros], October 7, 1879, FOM, TP, wrote: "you have understood Senegal. Be our defender; the Algerians will have to admit that we are better placed to reach the Sudan." On the St. Louis-Médine railroad, see letter with attached memorandum, Marc Merle & Robert to MMC, August 27, 1879, FOM, TP; copy Marc Merle & Robert to MMC, September 15, 1879, SARS, DCF.
99. In a note for the Direction des Colonies, December 20, 1879, no. 2, AMMP, GG1-carton 45, Legros stated: "it is an enterprise of national interest of which the government of the metropole ought to reserve the high direction exclusively; the interference of the colony ought to be dismissed; besides, its aid in a task so considerable would be absolutely ineffectual for lightening the burden on the budget, and it is proper to renounce it." --See also, GS to MMC, February 23, 1880, FOM, Senegal XII, 41.
100. Taken up later in this chapter, the story of Lat Dior and the railroad is considered in detail by Germaine Ganier, "Lat Dyor et le chemin de fer de l'arachide, 1876-1886," Bulletin de l'IFAN, XXVII (1965), Series B, pp. 223-281, based on a thorough examination of archival records in Paris, and also

analyzed by the excellent article by Vincent Monteil "Lat Dior du Kayor et l'islamisation des Wolofs," Esquisses sénégalaises, (Dakar, 1966), pp. 71-113. The text of the treaty is found in Ganier, "Lat Dyor," pp. 261-265.

101. E.g., Paul Bourde, "La France au Soudan. Le chemin de fer du Sénégal au Niger," Revue des Deux Mondes, VI, December 1, 1879, pp. 659-688, displaying proudly the text of the treaty.
102. Primary sources for the domestic situation in Cayor are in ARS: dossier 13G260 and the political reports in 2B74 (entries from August 7, 1879 through May 8, 1879); in FOM; reports in Senegal I,63 for December 7 and 24, 1879 and January 8, 1880.
103. See GS to MMC, February 7, 1880, confidential, FOM, Senegal I,63.
104. Draft MMC to GS, February 4, 1880, FOM, Senegal I,63; note to MMC, February 8, 1880, Legros Resumé, pp. 28-29.
105. Entry of August 25, 1879, Legros Resumé, pp. 7-10; draft MMC to GS, January 13, 1880, FOM, Senegal I,63.
106. GS to MMC, December 1, 1879 and December 7, 1879, FOM, Senegal I,63; drafts MMC to GS, January 13, 1880 and February 4, 1880, Ibid.; GS to MMC, March 23, 1880, Ibid.; note to MMC, March 25, 1880, Legros Resumé; note to MMC, July 1, 1880, Legros Resumé.
107. Oloruntimehin, Tukolor Empire, pp. 230-259, Kanya-Forstner, Western Sudan, pp. 72-83; JORF -Débats Parl.-Chambre, November 28, 1880, p. 12974; JORF -Débats Parl.-Sénat, February 17, 1881, pp. 102-112; the ministry eventually rejected the treaty of Nango. GS to MMC, November 24, 1880, FOM, Senegal I,63.
108. Note to MMC, March 24, 1880, Legros Resumé, pp. 34-35; same, June 13, 1880, Legros Resumé, pp. 38-41; same, June 29, 1880, pp. 41-43; same, July 5, 1880, Legros Resumé, pp. 44-46.
109. Note to MMC, July 5, 1880, Legros Resumé, pp. 44-46.
110. Though meager, the appropriation was sufficient, as Kanya-Forstner points out (Western Sudan, p.72), to launch French imperialist expansion in this region;



see also note to MMC, September 10, 1880, Legros Resumé, pp. 47-49; Senate bill no. 225, December 28, 1880, copy in FOM, Senegal XII, 69, in promoting the project used the reasoning that without a railroad, French troops would have to be withdrawn from Bafoulabé, in which case France's African allies would turn against French forces--a curious rationale justified by saying: "avec le caractère des indigènes, les choses se passeraient certainement ainsi."

111. Georges Perin for one took an active role in fighting the Senegal railroad bill (JORF -Débats Parl. -Chambre, November 28, 1880, p. 12979), asserting notably that the Ministry of Marine was racing not a foreign nation to the Sudan, but the French Ministry of Public Works. See also Kanya-Forstner, Western Sudan, p. 85n.
112. JORF -Débats Parl. -Sénat, February 17, 1881, p.105; JORF -Débats Parl. -Chambre, February 20, 1881, p.298; note to MMC, March 11, 1881, Legros Resumé, pp. 68-69. The feasibility of the project was upheld in the report of the Special Commission of Algeria, April 2, 1881, ANF, F14/12439.
113. MMC to Senator Freycinet, President of the Senate Finance Committee, FOM, Senegal XII,39; Freycinet to MMC, March 10, 1881, Ibid.; MMC to MTP, March 11, 1881, Ibid.
114. There are many general histories covering the construction of the Kayes-Niger railroad; inter alia, see Government General, AOF, Le chemin de fer de Thiès au Niger (Paris, 1931), pp. 5ff.; Raymond Godfernaux, Les chemins de fer coloniaux français (Paris, 1911), pp. 188ff.
115. Kanya-Forstner, Western Sudan, pp. 86-87; note to Direction des Colonies, February 11, 1881, Legros Resumé, pp. 66-67; note to MMC, June 17, 1882, Legros Resumé, pp. 70-71.
116. GS to MMC, June 7, 1881, ARS, 2B55; translation Ibra Fatim Sar to GS, received September 4, 1882, ARS, 13G261; two letters from Lat Dior to GS, nos. 10 and 11, translated on April 27, 1881, Ibid.; GS to MMC, May 7, 1881, FOM, Senegal I,64; translation of Lat Dior to Emir Gorée, n.d., no. 15, Ibid. G. Ganier offers the alternative explanation ("Lat Dyor,"

p.229) that the colony's change of governors had encouraged sovereigns of states neighboring the colony to revise their relations with it.

117. Monteil, Esquisses, pp. 85, 95-07, 101-112; Pathé Diagne, Pouvoir politique, p. 142; Valière report, August 9, 1879, ARS, 1G48; GS to MMC, December 8, 1879, ARS, 2B74.
118. In Freycinet, Souvenirs, p. 213, the author signaled his appreciation in 1882 for Jauréguiberry's loyalty in 1880.
119. Kanya-Forstner, Western Sudan, pp. 91-93; GS to MMC, January 6, 1882, ARS, 2B55; GS to MMC, March 20, 1882, FOM, Senegal I,66; draft MMC to GS, May 12, 1882, FOM, Senegal I,67; GS to MMC, November 1, 1882, Ibid.; Oloruntimehin, Tukolor Empire, pp. 253-254.
120. Note to MMC, June 17, 1882, Legros Resumé, pp. 70-71.
121. Copies of letters: Minister of Finances Léon Say to MMC, March 6, 1882, no. 12, SARS, DCF; same, March 18, 1882, no. 16, Ibid.
122. MMC to GS, May 2, 1882, ARS, 2B54.
123. translation of Lat Dior to GS, received May 15, 1882, ARS, 13G261; GS to MMC, May 20, 1882, ARS, 2B74; same, May 28, 1882, ARS, 2B54.
124. Ganier, "Lat Dyor," p.231; translation Lat Dior to GS, received July 25, 1882, ARS, 13G261; GS to MMC, October 23, 1882, ARS, 2B74; GS to MMC, August 1, 1882, ARS, 13G261; GS to MMC, political report, June 20, 1882, ARS, 2B74; same, July 20, 1882, Ibid.; same, September 23, 1882, Ibid.; MMC to GS, July 28, 1882, ARS, 2B54; same, September 18, 1882, Ibid.; same, October 11, 1882, Ibid.; see also ARS dossier 1D40.
125. As Monteil remarks in Esquisses, p. 96: "tout le monde écrit à St. Louis pour se plaindre de tout le monde." See, e.g. : "People of Diambourg" to GS, received May 11, 1881, ARS, 13G261; Serigne Koki to GS, April 4, 1882, Ibid.; translation of Silly-Makha-Sal to N'Dyor Sar, May 16, 1881, Ibid. GS to MMC, May 8, 1881, ARS, 2B55; same, August 23, 1881, FOM, Senegal I,65; GS to MMC, March 21, 1882,

- ARS, 2B74; GS to MMC, September 8, 1882, ARS, 13G261.
126. Lt. Colonel Wendling to GS, July 31, 1882, ARS, 13G261; MMC to GS, October 6, 1882, ARS, 2B54.
127. Prompted by Lat Dior's<sup>s</sup> injunction against railroad construction, even in French colonial territory. See Ganier, "Lat Dyor," p. 233; translation Lat Dior to Emir N'Dar, November 17, 1882, FOM, Senegal IV,98; GS to MMC, November 23, 1882, FOM, Senegal I,68; MMC to GS, December 20, 1882, ARS, 2B54.
128. Acting GS to Cabinet du Ministre, September 24, 1883, SARS, DCF. These carts had been tested first in the sand dunes of N'Diogo during the maneuvers of 1879, then during the campaigns in the upper rivers. The employment of these light, impermeable supply carts enabled the French to conquer the Sudan without the railroad.
129. Ganier, "Lat Dyor," p. 234; report GS to MMC, January 8, 1883, FOM, Senegal I,68; GS to MMC, January 23, 1883, Ibid.; See also the ARS dossier 1D43.
130. translation Samba Yaye to GS, December 23, 1881, ARS, 13G261; GS to Diambor Samba Yaye, January 5, 1883, SARS, DCF; GS to Colonel Wendling, January 6, 1883, Ibid.; same, January 22, 1883, Ibid.; same, January 26, 1883, Ibid.; MMC to GS, February 5, 1883, ARS, 2B54; GS to MMC, political report, February 8, 1883, ARS, 2B74; GS to MMC, political report, March 24, 1883, SARS, DCF; see also the report by Colonel Wendling on Cayor, January 8, 1883, ARS, 1D43; GS to MMC, June 15, 1883, ARS, 2B54.
131. A strategy applied dramatically on a very large scale by Samory in the 1890's. See Yves Person, "Guinée-Samori," in West African Resistance, ed. by M. Crowder (London, 1971), pp. 111-143.
132. E.g., translation Lat Dior to GS, April 27, 1881, no. 10, ARS, 13G261; translation Lat Dior to GS, August 18, 1882, Ibid.

133. Ganier, "Lat Dyor," pp. 234, 239-240, mentions a host of 4000 people following Lat Dior to the Saloum; see excerpt of P.V., Administrative Council of Senegal, January 9, 1883, FOM, Senegal IV,98; GS to MMC, March 24, 1883, SARS, DCF.
134. Ganier, "Lat Dyor," pp. 236-239; but see also GS to MMC, political report, April 9, 1883, SARS, DCF; same, May 9, 1883, Ibid.; Victor Ballot to GS, April 9, 1883, FOM, Senegal IV,98; same May 7, 1883, Ibid.; report by Le Boucher on the palaver of May 9, 1883—"Sur les négociations entamées avec Samba Laobé et les captifs de la couronne," Ibid.
135. GS to MMC, political report, May 20, 1883, ARS, 2B74; same, June 19, 1883, Ibid.; same, September 24, 1883, FOM, Senegal I,70.
136. GS to MMC, political report, June 16, 1883, ARS, 2B74; same, July 2, 1883, Ibid.; same, July 8, 1883, Ibid.; same, July 24, 1883, Ibid.; GS to MMC, August 9, 1883, ARS, 2B54.
137. MMC to GS, March 19, 1883, ARS, 2B54; same, June 5, 1883, Ibid.; "Note sur le Cayor," June 10, 1883, FOM, Senegal IV,98; GS to MMC, political report, May 24, 1883, SARS, DCF; MMC to GS, August 27, 1883, ARS, 2B54; GS to MMC, September 7, 1883, Ibid.; MMC to GS, September 19, 1883, Ibid.
138. GS to MMC, political report, October 24, 1883, ARS 2B75; same, November 23, 1883, Ibid.; same, December 23, 1883, Ibid.; same, January 23, 1884, Ibid.
139. GS to MMC, political report April 11, 1885, FOM, Senegal I,73; same, May 4, 1885, Ibid.; same, July 12, 1885, Ibid.; same, September 12, 1885, Ibid.
140. A copy of the treaty of August 28, 1883 with the names of the signers is found in Annuaire du Sénégal, 1887, pp. 87-88. The question of ceding land around the stations was broached to damel N'Goné Fal in July 1883 (Victor Ballot to Commandant N'Dande, July 2, 1883, ARS, 033).
141. See Louis Faidherbe, Le Soudan française-chemin de fer de Médine au Niger (Lille, 1881), p. 13.
142. Balandier, Sociology of Black Africa, pp. 486-498 (quote on p. 493).

143. National reconciliation is a dominant theme in Freycinet, Souvenirs; see especially pp. 6-14, 269.
144. Jauréguiberry was not a stranger to the world of engineering and machinery. See his personal dossier, no. 702, AMMP.
145. This is in line, to a degree, with Carlton Hayes, A Generation of Materialism 1871-1900 (New York, 1963), pp. 220ff. But Hayes ascribes imperialism largely to an irrational nationalism. The nationalist component was very strong of course; but nationalism was only one aspect--a convenient vehicle for more fundamental emotional uncertainties and cultural imperatives in a world disrupted by a new industrial technology.

APPENDIX 1

The various "ethnic" groups of the Senegambia, whose ruling clans were often closely related to each other, and which intermingled racially and geographically through migration, marriage, and acclimatization can be distinguished on the basis of language, cultural traits, and historical traditions. (See the works listed in footnote 3 of this chapter especially: Lombard, Géographie; Diagne, Pouvoir politique.)

Important here as elsewhere throughout West Africa, the seasonally-migrating, pastoralist Peuls were scattered throughout the Senegambia and the Sudan, but formed majorities only within isolated pockets, such as the barren, sparsely-populated Ferlo plain, which provided ample pastureland during the rainy season. The other principal peoples of the Senegambia--Wolof, Tukolor, Manding, and Serer--all sedentary agriculturalists--were settled within roughly distinguishable territorial blocs in the 19th century. Following the Senegal river, one would find Wolof occupying the south bank from the river's mouth up to Dagana in a portion of the once-considerable kingdom of Oualo, whose north-bank territories were now in Moorish (Mauretanian) hands. From Dagana, extending upstream to Dembankane, below Bakel, lay the heartland of the Tukolor, a Pular-speaking people like the Peuls, but

settled agriculturalists with a long Islamic tradition going back to the 11th century state of Tekrur. Farther upstream were concentrations of Sarakole. Sedentary agriculturalists, the Sarakole combined a fervor for Islam with a penchant for long-distance trade, as well as for hiring out their labor abroad. Even farther upstream lay Khassonke country--a people of mixed Malinke and Peul origins--and beyond them the Tukolor-ruled state of Bondu. Much farther to the south, near the coast, lay the Futa Djallon, its Malinke population conquered by Islamized Peuls in the 1720's. To the east and northeast of the Upper Senegal river lay intermingled Bambara and Malinke peoples, the latter generally subject to Bambara or to Peul overlords.

Penetrating over 300 kms into the interior, the Gambia river acted as the axis for other groupings, with the Manding in particular forming the majority around the river, as well as in large territorial blocs to the south and east. Between the Senegal and Gambia rivers, in the vicinity of the Atlantic seaboard and its immediate hinterland, lay two major groupings. The Wolof peoples, forming several states--Oualo, Djolof, Cayor--still lay in a fairly compact bloc west of the Ferlo (though with offshoots in the Gambia, Saloum, and Baol), from Oualo in the north down to Cape Verde and Rufisque in the south,

where they met their near kinsmen, the Lebu. The Serer people were concentrated to the south, notably in the kingdoms of Sine, Saloum, and the half-Wolof Baol.

Sovereignty and political power among the Wolof were traditionally dispersed on a collegiate basis with all social classes--nobility, freeborn peasants, specialized artisan castes, and slaves--playing at least a symbolic, and often a concrete role in the selection of a ruler and in the exercise of power. Pathé Diagne has noted, for instance, the decay of the dyarchic political system of Cayor by the 19th century to the advantage of the damel, its leader in war, and to his erstwhile servants, the crown bondsmen ("captifs de la couronne"), forming the largest and most professional group in the "tyeddo" military forces (Pathé Diagne, Pouvoir politique, pp. 102-118, 125-144). Eventually the chiefs of these bondsmen could rise to the command of large territorial divisions of the realm, despite their servile origin, and even take a disproportionate part in the selection and deposition of damels. The freeborn peasants would resent the depredations of the undisciplined tyeddo and also resent their overlords, the damels, who tolerated the violence.

Islamic influences had, meanwhile, been spreading in the region since the 11th century, especially by means of itinerant traders and teachers, and by the migration



of some heavily Islamized groups--Manding, Tukolor, and Sarakole. The courts of the rulers of various states had been major centers for the propagation of Islam. But many Africans, particularly rulers, were willing to accept the precepts of Islam only to a degree consistent with traditional fetishist ritual and practice. There was a general retardation and even regression in the spread of Islam during the period coinciding roughly with the heyday of the Atlantic slave trade, and such states as Cayor, while accommodating large Muslim minorities and even prestigious schools of Islamic science, were dominated by rulers and tyeddos proud of an adherence to fetishism.

From the mid-18th century on, Muslims in the region were able to challenge fetishist rule with increasing success. A series of revolts led by reformist "marabouts" throughout the region and elsewhere in West Africa led to the overthrow of fetishist or superficially-Islamized ruling strata and to the establishment of rule by Muslim theocracies over large pockets of territory. Widespread dissatisfaction with decayed political and social structures undoubtedly attracted much support to the reformist cause. It would be a mistake, however, to consider the reformers as aiming at an egalitarian society. Dependent as they were upon military success, and therefore on fielding large bodies of cavalry as strike forces, the reform

movements were almost inevitably commanded by notables of good family; and slave raiding, which translated into wealth and more manpower, was a common feature of these religious wars (Oloruntimehin, Tukolor Empire, pp. 51-57). The reform movements aimed at a puritanical purging and purifying of local religious practices, although this could mean political and social practices as well. The wars nevertheless created new opportunities not only for material gain, but for access to political power for dissident factions within dominant aristocracies.

The religious jihad of El Hadj Umar from the 1850's was of prime importance for the Senegambia. Followed later by an impressive set of erstwhile, if less successful imitators elsewhere in the region (Ma Ba, Ahmadou Cheikou, Fody Kaba), this purist reformer, in leading a mainly Tukolor conquest of the Upper Senegal-Upper Niger region, apparently aimed at hegemony over the entire Senegambia (Oloruntimehin, Tukolor Empire, pp. 85-90, 120-121). Particularly skillfull at obtaining the support of dissident factions in each state--Khasso, Bondu, Kaarta, Masina, Segu--El Hadj Umar's conquests spread rapidly and threatened to extend to the lower Senegal. It was the growing imperialist advance of the French colony of Senegal in the 1850's that frustrated Umar's designs in this direction, ousting him from his forward positions on the Upper Senegal and restricting his access to major reserves of manpower on

the Senegal river. Umar then turned inland toward the Upper Niger, carving out an impressively-large territorial empire that was, however, unconsolidated at his death. Before it could be consolidated under his son, it had the ill-luck to be a primary target of a newly-expanding French imperialism in the 1880's and 1890's.

The expanding French colonial hegemony frustrated the militant jihadists, who had hoped to spread Islam by force of arms. Paradoxically, the French conquest, in dislocating existing African social and political structures, was to accelerate, not retard the spread of Islam. This was most apparent in Cayor where even the damel Lat Dior became a Muslim under the shock of the conquest.

## CHAPTER II

### Construction of the Dakar-St. Louis

It is also by its mass and power of destruction that the locomotive imposes itself upon the natives. There were indeed at the end of the 1883-1884 season acts of mischief against the DSL railroad. The impotence of these attempts have discouraged the authors for the future. The machine that cuts in two animals wandering on the track commands respect.

- Alexis Bois, 1885<sup>1</sup>

The Société de Construction des Batignolles was probably one of the more intriguing examples of the type of French engineering firm more interested in expatriating its talents to labor on foreign construction projects than on domestic work in France. First active in works in France, then in Italy, Austria-Hungary, Spain, Holland, Rumania, and even Russia before 1871, concentrating more on Africa, Russia, and even Indochina after 1871, and in Poland, Yugoslavia, Africa, and South America after 1920, the company's activities seem to have matched closely the permutations of the French government's foreign policy interests. A detailed study of this company would doubtless yield a fascinating glimpse into the interlocking relations between the worlds of French engineering and banking, and perhaps that of government.<sup>2</sup>

The founder, Ernest Gouin, a graduate of the Ecole Polytechnique, had supervised the construction of British

locomotives for the Paris-Orleans line and then worked on the St. Germain-Versailles railroad, that breeding ground of future French rail magnates. Founding his own company as a family concern in 1846, then converting it to a joint-stock company in 1871, Gouin had begun with locomotive construction, had introduced iron bridge construction shortly thereafter into France, and then proceeded to building rail lines on his own. A member of the municipal council of Paris from 1860, the president of the Paris Chamber of Commerce from 1873 to 1876, he rose a few years before his death in 1885 to the position of Regent of the Bank of France.<sup>3</sup> Admittedly a lesser light in the brilliant galaxy of French finance and industry, Gouin could count nevertheless as investors in his firm, such luminaries as Gustave d'Eichthal, the Rothschild brothers, Philippe and Henri Hottinguer, Francois Wilbrod-Chabrol, Emile Péreire and Abraham Rodrigues-Henriques. Perhaps some of the talented young engineer's success can be traced to his marriage to Rodrigues-Henriques' daughter, Anne Mathilde, for Rodrigues-Henriques held almost one quarter of the Society's shares in 1871. Moreover, many a shareholder, director or responsible engineer of the firm--a Gustave d'Eichthal, Wilbrod-Chabrol, LeBret, Eugène Brun, de Bellanger, Lorieux, or Roland-Gosselin--turns out to have been married to or borne by a daughter of the Gouin or Rodrigues-Henriques families. Indeed, the meetings of the board of directors

of the firm must have had the character of family gatherings.<sup>4</sup> Ernest Gouin was ably seconded by his son and heir, Jules, also trained as an engineer; and Jules was to be succeeded in turn by his sons, Gaston and Edouard.

In 1874, the French government granted to the Batignolles the concession for construction and exploitation of the Bône-Guelma railroad in eastern Algeria, the very railroad whose extension into Tunisia was to form part of the basis for French intervention in 1881. The profits from this line came initially not so much from operation of the line, but from the generous guarantee of the French treasury. Private capital invested in the Bône-Guelma was guaranteed a 6% return by the French government because of the supposed risks of the venture. Since contemporary bonds bore a return of only 4½% at most, the concession offered a lucrative opportunity for immediate large profits. The Batignolles promptly formed an operating company--the Bône-Guelma railroad company--to assume the risks of construction and operation of the line, although the actual construction work was done by the Batignolles.<sup>5</sup>

To raise the necessary capital required by the concession agreement with the government, the Gouins turned to respected financial circles that could market the shares. In the case of the ill-fated contemporary Panama Canal Company, financial consortiums marketing Panama Canal shares were to extract such immense fees for their services that

the finances of the Panama Company were gravely impaired from the beginning.<sup>6</sup> The government guarantee not only relieved the Bône-Guelma of this concern, but with interest on its securities guaranteed at a high rate, the marketing consortium could sell them at a price far higher than par value. To gain easy access to sources of capital, the Batignolles did indeed surrender three quarters of the marketing profits to participating banking circles, but kept the remaining one-quarter for itself.<sup>7</sup>

It is apparent that the Gouins hoped to ream similar financial advantage from a Dakar-St. Louis railroad concession. In June 1879, Ernest Gouin had been nominated for membership on the Transsaharan Commission by a pivotal figure in its formation.<sup>8</sup> Nothing had come of that, but by November 7th, Legros was recommending that a Dakar-St. Louis be built by a private entrepreneur backed by a governmental guarantee. By early January 1880, Batignolles engineers were already on site in Senegal, reconnoitering Walter's route for the railroad.<sup>9</sup>

The doubts expressed by the parliamentary Budget Commission in June 1880 about the seriousness of Jauréguiberry's projects, only led the minister to take more decisive measures demonstrating his resolve. To answer doubts that reliable construction firms could be found to carry out the project, the minister followed Legros' suggestion in soliciting competitive bids from reliable industrial companies for a preliminary contract award, conditional on par-

liamentary assent.<sup>10</sup> But only companies with acceptable standing were admitted to this competition. Of the three acceptable companies presenting themselves on October 12, 1880--the Batignolles, Joret (builder of the East Algerian), Lavally and Molinos (builder of the Réunion railroad)--the Batignolles submitted the low bid and won the contract. Veiled accusations of collusion in the bidding did surface during the subsequent parliamentary debates, but there is no evident of substance pointing to collusion.<sup>11</sup> It is clear though, that the Batignolles was seriously interested in this project from the first and retained its interest in it, maintaining storage space in St. Louis even with the bill blocked in the National Assembly.<sup>12</sup> A report of the board of directors to Batignolles shareholders in late 1881 confessed,

The enterprises of the type that we seek are difficult to find in France, where the state has monopolized work of all kinds--railroads, ports, canals--since the Freycinet law; it is necessary therefore to continue to thrust ourselves abroad where we have solid connections, and where the work that we have done gives us an excellent reputation.<sup>13</sup>

The preliminary contract signed October 30, 1880 between the minister and the company, with its annexed stipulation sheet ("cahier des charges") specified completion of the line before April 30, 1883 if parliament approved the agreement by January 31, 1881. But target dates for provisional contracts only made legislative opponents of the project bristle at the ministry's pre-



sumption.<sup>14</sup>

Moreover, having already been burnt on the Bône-Guelma concession guarantee, the lawmakers were in no mood to accept similar terms for a Dakar-St. Louis. Gouin's winning bid had committed the company to construct the single-track, 1 meter gauge line at a maximum price of 68,000 francs per km. The company would raise a quarter of the necessary capital (an approximate total of 68,000 Fr/km times 260 kms = 17,680,000 Fr) by issuing shares; the remaining 3/4 in issued bonds to be raised later as the line was built. In return, the state was to guarantee the company a dividend of 3400 francs above operating costs for each section of track accepted by the state and placed in service--which amounted in essence to a guarantee of roughly 5% annual return on the presumed invested capital once the line was completed; provided, of course, that construction costs did not exceed the maximum.

A number of objections were raised immediately. First of all, a maximum forfeit price ("construction a forfait") meant that the state would have no real idea of the actual construction costs (or investment), which the entrepreneur had no obligation to divulge. Secondly, the guaranteed interest rate of 5%, with government bonds now selling at 3% to 4% meant that a consortium successfully marketing the concession's securities at a higher price corresponding to a 3.5% return could gross a total of  $\frac{5\%}{3.5\%} \times 17,680,000 \text{ Fr} =$

25,260,000 francs in round figures; thus garnering a staggering total profit of 7,580,000 francs on stocks and bonds. The costs of this profitable operation would be borne indirectly by the state through its obligation to guarantee for 99 years an annual profit of  $260 \text{ km} \times 3,400/\text{km} = 884,000$  francs for the completed line. It would have been all the more profitable for the original shareholders, who were actually allowed by the 1880 contract to put up only one-half of the par value of the shares.<sup>15</sup> Any deficits in the operation of the completed line were, moreover, effectively assumed by the state's blanket guarantee. The contract arranged for maximum operating expenses to be set for the rail line; but the specific means for setting the maximum were to be worked out later only at an undetermined date. Indeed in November 1880, the Minister of Finance was concluding that: "All the risks are . . . charged to the state. The concessionary can gain less. He cannot lose. It will be advantageous to the state, which can obtain the funds at much less than 5%, to build the railroad [itself]."<sup>16</sup>

Legros strongly disagreed. He had already decided in 1879 that the government was assuming too heavy a burden with the Upper Senegal railroad to undertake a simultaneous effort on a Dakar-St. Louis line. The entrepreneur, he felt was taking a substantial risk in agreeing to construct the line at a set maximum cost, while the terms

concluded were not much different from those granted earlier for Algerian railroads.<sup>17</sup>

During the February 1881 debates, parliamentary opponents of these financial arrangements attacked several important details, such as the failure to specify full payments for shares in cash, and the failure to set out a proper arbitration procedure in case of disputes between the company and the state. They particularly hammered, however, at the methods of raising the cash for the venture, since plainly the state could do it at less expense by issuing government bonds. The Senate finance committee, chaired by Freycinet, proposed a solution in July 1881. The entrepreneur was taking a substantial risk after all, justifying a good return, concluded the committee; but they recommended that the state rather than the company ought to raise three-quarters of the cash with its own bonds; and the Senate accepted a bill revised on this basis in July 1881.<sup>18</sup> But it was only after the Ministry of Finance's objections were satisfied on all points in March and May 1882, that the Chamber approved the bill on June 29, 1882.<sup>19</sup>

This revised October 1880 convention still specified construction of the Dakar-St. Louis line at a set maximum price by an entrepreneur capitalized at some 5,000,000 francs, raised by an issue of stock--this stock to be guaranteed an annual return of 1,154 francs per kilometer

of line put into service. The remaining 12,680,000 francs needed would be supplied by a state subvention, paid in installments proportional to the length of line placed in service. This subvention would be repaid with interest in the future; but only after the railroad's operations became profitable.<sup>20</sup>

The agreement was far from perfect. That the guaranteed interest on invested private capital for the completed line was now effectively set at 6% was not the issue. The entrepreneur indeed was assuming a considerable risk in constructing the first railroad line in tropical Africa at an agreed maximum price.<sup>21</sup> For it was apparent by now, that with local African labor difficult to recruit, experienced railroad laborers would have to be imported from France at considerable expense. The major flaw lay rather in the very arrangement of a set forfeit price for construction and guaranteed operating costs. As one deputy had remarked during the debates of February 20th in the Chamber,

You know how our engineers . . . to their credit have always refused contracts on a forfeit basis which makes surveillance difficult . . . The company will build at a forfeit price; the less it spends, the more it will gain, its guaranteed return already being fixed . . . When a railroad is badly built, what are the results? It is that the operation and maintenance are expensive.<sup>22</sup>

The stage was set wherein the railroad would be built. That stage was supposedly designed to facilitate coopera-

tion between the governmental organs, ministerial and colonial, and the contracting entrepreneur. In fact, it would often make them sharp adversaries.

Construction of the DSL By prior agreement between the company and the government, a special company was to be formed immediately to raise the required capital of 5,000,000 francs and to fulfill the contract terms. In reality, this company would confine itself to operating the rail line after construction, while the actual construction would be undertaken on its behalf by the Batignolles with its engineers, materiel, and expertise. Thus, even while Batignolles management undertook construction work on the rail line in Senegal as early as December 1882, formation of the new DSL operating company was delayed, obviously in order to postpone the cash outlays involved, until the ministry sharply warned in May 1883 that this oversight was in violation of the contracted agreements.<sup>23</sup>

Finally, on May 26, 1883, Batignolles management capitulated, and formed the "Compagnie du Chemin de fer de Dakar à Saint Louis," or DSL for short, with an issue of 10,000 shares. A Monsieur Edouard de Traz was selected as president and a board of directors chosen. The Dakar-St. Louis Company was, however, as a government official noted in 1886, merely a subsidiary of the Batignolles itself.<sup>24</sup> On June 9th, a contract concluded between the Batignolles

and the DSL turned over to the Batignolles all the liquid assets of the new company, including the anticipated future government subsidies, in exchange for the original 1880 concession franchise and an agreement by the Batignolles to construct the line. The Batignolles itself retained a substantial bloc of shares in the DSL, and at least one officer of the Batignolles always sat on the DSL board until 1927.

A central office was set up in Paris for the new company at 35, Rue de Rome, while headquarters in Senegal was set up at Dakar. For their first DSL Chief of Operations in Senegal, the entrepreneurs shrewdly chose Alexis Bois, a military officer who had already served in Senegal in 1869. On leave from the army till his retirement in February 1884, Bois was trained for railroad management in a rapid orientation course on the Bône-Guelma railroad in the spring of 1883, and he arrived in Senegal on June 5th, not long before the official opening of the new line's first rail section.<sup>25</sup>

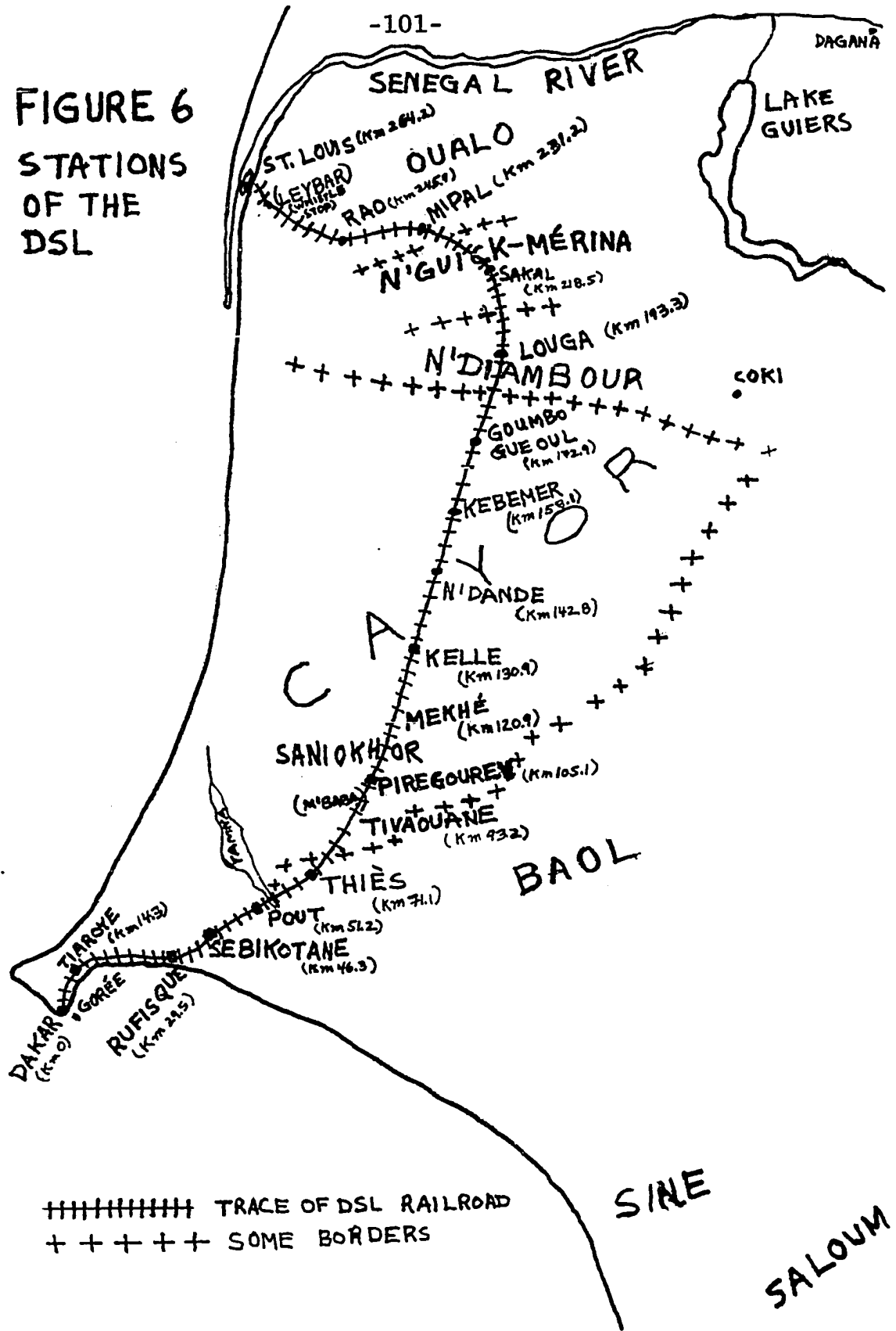
Though the severity of the climate was sometimes exaggerated by the company, the hazards of the "hivernage" rainy seasons did effectively limit heavy construction work in Senegal to the period between December and May. The Batignolles, although continuing work in practice into July, felt obliged at the end of each work season to evacuate its construction workers for a rest in France in

order to avoid the health dangers that the hivernage generally brought.

The first work campaign began badly in December 1882 because of a new outbreak of yellow fever in Dakar. Five of the six Batignolles agents sent to Dakar in November were dead by the end of December.<sup>26</sup> A shipload of construction workers bound for a newly-quarantined Dakar was hastily diverted to St. Louis and set to work on that end of the projected line. On hearing news of the epidemic, 300 construction workers already hired at Marseilles walked out, and workers could be brought into Dakar only on January 26th.<sup>27</sup>

Given these handicaps it is hardly surprising that the first season did not go well. Blondelet, the Batignolles engineer charged with construction, had predicted that the season would end with the northern branch completed from St. Louis to M'Pal, and possibly Louga, and the southern branch from Dakar to Rufisque (See Figure 6). But by March, only 13 kms of roadbed and 4 kms of track had been completed in the north, and 15 kms of roadbed and 2 kms of track in the south; even by May 24th, only 8 kms of track had been laid from Dakar. Hopes of opening the northern branch for service to M'Pal were dashed that year as pieces essential for a bridge at Leybar were lost in an accident in the waters of the sand bar at the entrance to St. Louis.<sup>28</sup>

**FIGURE 6**  
**STATIONS**  
**OF THE**  
**DSL**





In the south, however, the 30 km section linking Dakar to Rufisque seemed just advanced enough to open service between these towns, connected previously only by a packboat cruising between Gorée and the mainland. This section was proudly inaugurated on July 23, 1883 to the delight of the inhabitants of Dakar, who spontaneously climbed onto the inaugural train, over the protests of authorities, and remained aboard or clung to its sides for the maiden voyage to Rufisque.<sup>29</sup> Service, however, had been opened hastily on this line without construction work completed. Only 15 days after its opening, seasonal rains cut parts of the new line, and it could barely be reopened for service on November 10th.

The next campaign of 1883-1884 went much better. A larger more proficient work force was put to work from December to July. By January 29, 1884, the St. Louis-M'Pal section (32½ km) was opened for service, and as the season advanced, a Rufisque-Pout section was opened on May 7, 1884, an M'Pal-Louga section on June 21 and a Pout-Tivaouane section on July 24th. An impressive total of over 134 km had been delivered, with the rails reaching beyond Louga in the north and approaching Piregourey in the south; with less than 100 km to go. During the final, third season, with a work force of similar strength working from two ends toward a common goal, completion was rapid. A 20½ km section from Louga to Gueoul was put into service on

February 1, 1885, and two sections, Gueoul-Kebemer and Tivaouane-N'Gaye Mekhé, were opened simultaneously on March 16th. A line of 21.9 kms from N'Gaye Mekhé to N'Dande was opened on May 1st. Finally on May 14, 1885, the ceremonial driving of a silver spike to connect the last rail on the Kebemer-N'Dande line signaled the bridging of the last gap between Dakar and St. Louis.<sup>30</sup>

Defects Unfortunately, as had been predicted, construction had been pursued with an eye to speed rather than to solidity. The governmental subvention of 12,680,000 francs (actually 48,769.23 francs per kilometer) would only be paid, and the guaranteed dividend applied to operations, only as successive sections of the line were accepted. Thus, the immediate problem for the entrepreneur was to obtain acceptance of rail sections quickly. Of course, the accepted sections of line had to be sturdy enough to handle the flow of materiel and crews to construction sites at the ends of the line, as well as to carry the rail traffic that might develop. But there was a temptation to cut corners, to risk that the embankments holding the rails would endure under adverse weather, and to house station service temporarily in shacks. Regular service would require a sturdier infrastructure; but the state's blanket guarantee of operating costs could be abused in this respect by writing off reconstruction costs later on as

operating repairs and maintenance, or as expansion of existing facilities.<sup>31</sup>

In April 1884 a government inspector was warning the governor of Senegal of the weakness of the railroad's embankments because of the company's use of inferior soils and questionable excavation and construction practices. By August, the same inspector had noticed that rails were not always held by standard-sized spikes, but sometimes merely fixed in grooves cut into the wood traverses by inadequate spike nails that could loosen under slight stress.<sup>32</sup>

The ministry had arranged for inspection and surveillance of the DSL's financial accounts only by December 31, 1883, with a decree modeled on experience in Algeria. The decree provided for an interministerial commission (the Commission de Verification des comptes du chemin de fer de DSL), on which both the Ministries of Finance and Marine were represented, to verify the financial accounts of the company in Paris, while an Inspector of Naval Administrative and Financial Services in Senegal verified the DSL's financial records in the colony itself. In late 1883, the technical surveillance of completed sections of line was entrusted to the director of the colony's Service of Public Works, doubling as the Technical Surveillance Engineer of the DSL at an extra salary of 5000 francs.<sup>33</sup>

The official acceptance of sections of completed rail line for service--a key formality authorizing payment of

the governmental subsidy and operations guarantee--was less precisely regulated. The line would first be inspected by ad hoc commissions formed locally, whose favorable conclusions would then be ratified by the governor. It was strange, given the pivotal role of these commissions, that the governors generally selected members lacking in technical competence. Even stranger was the reception of unfinished and incompletely-equipped sections, for none of the sections accepted during the period of construction was finished at the time of acceptance, and all were received on condition that the unfinished work be completed later. This procedure made sense in the case of the Dakar-Rufisque section in July 1883, because it had been the government's indecisiveness in choosing the sites for the terminal facilities and the railroad's right of way in Dakar that was to blame for construction delays in that town.<sup>34</sup> The acceptance of other incomplete sections, however, was less reasonable, particularly after the washouts of the hivernage of 1883 on the Dakar-Rufisque line. The DSL, of course, welcomed the early reception of rail sections, because it thereby received governmental payments all the sooner. But the state's financial interests were suffering.

Although expressing a few misgivings about the rail line's obstruction of the main caravan route from St.

Louis, a commission of January 17, 1884 complacently ratified acceptance of a still-unfinished St. Louis-M'Pal rail section.<sup>35</sup> However, a like reception on April 28th of the Rufisque-Pout rail section by another commission was challenged by the Inspector of Finances, Friocourt. Friocourt was scandalized by the apparent weakness of the line in many places, and the numerous resulting derailments. Already, the Inspector had concluded that some of the personnel and material charged to the DSL's exploitation accounts were actually being used for initial construction work, although verification was almost impossible with Batignolles records closed to government inspection. By accepting uncompleted rail sections, the reception commissions were making it even easier for some construction work to be charged to the DSL's maintenance account, which the state was then obliged to subsidize since the DSL was operating at a loss.<sup>36</sup>

Despite skepticism voiced by officials of the Ministry of Marine, most members of the Accounts Verification Commission for the DSL in Paris were impressed by the inspector's energetic protests, and this body tended thereafter to scrutinize the DSL's accounts with great care.<sup>37</sup> But the inspector's efforts had little practical immediate impact in Senegal. Overriding his objections, the governor authorized immediate reception of the Rufisque-

Pout line on May 6th. Friocourt seemed to have better luck with the commission meeting in early June 1884 to consider reception of M'Pal-Louga line. This ad hoc body, taking exception like Friocourt to the omission of drainage ditches and other works, refused to accept the uncompleted line. But during Friocourt's absence and despite his telegraphed protest, the governor overruled his own reception commission and formally accepted the section.<sup>38</sup>

Alfred Razy, the colony's Director of Public Works played a pivotal role on these reception commissions. As Surveillance Engineer, Razy would be responsible not only for inspecting the operation of lines put in service, but, from January 1884, he was the only member on the reception commissions really competent to judge the technical merits of the lines and equipment. Indeed, later investigations of technical defects on the lines were to accord Razy a major share of the blame. Razy consistently accepted the rosy estimates of DSL management and supported conditional reception of unfinished sections regardless of Friocourt's objections. Friocourt complained to Paris about Razy's indifferent surveillance over the DSL.<sup>39</sup> But for his pains, Friocourt received only soothing words from the ministry while neither he nor his successors got much practical support in tightening surveillance of the DSL.<sup>40</sup>

A later investigation concluded that perhaps the various Surveillance Engineers had been misled by regulations

inadequately defining the Engineer's role in verifying construction work. In fact, Razy had probably been carrying out the wishes of his superiors. On December 5, 1883, not long after becoming Public Works Director, Razy had directed acting Governor Bourdiaux's attention to irregularities in the transverse profiles of rail embankments and cuts; but had been told in reply to allow the company more latitude in building according to the topography of the site and climate.<sup>41</sup> When Razy urged that the reception of the Rufisque-Pout section be delayed until certain works, such as the telegraph line, were completed, a reception commission was appointed to receive the line over his head. Razy protested his exclusion, but when his own reception commission met later to reconsider the line, Razy was arguing for reception--without the telegraph line. In a report on the M'Pal-Louga line, Razy recognized that in accepting unfinished lines early he was putting an extra financial burden on the state; but by this time he was balancing the fiscal loss against the "strategic advantage" of opening the lines for service.<sup>42</sup>

Policy was decided ultimately, not by the Surveillance Engineer, nor even the governor. The dispute between Razy and Friocourt over the Rufisque-Pout section had been relayed to the ministry, and the answering dispatch of June 5th deciding firmly against Friocourt's views settled the issue not simply for that section, but for the M'Pal-Louga

and subsequent sections as well. It was only after receiving this dispatch that the governor overrode the M'Pal-Louga commission's veto.<sup>43</sup> Razy had argued as late as April 6th that the Pout-Tivaouane section not be opened for service--even if completed--until that section's earthworks had a chance to settle over the following hivernage. Nevertheless, on July 9th, a reception commission approved reception of this incomplete section on Razy's recommendation. Quick reception of rail sections, despite the financial risks, was now definitely the policy of the colonial administration.<sup>44</sup>

The shortsightedness of these procedures was amply demonstrated during the hivernage of 1884 when sudden tornadoes on August 8 and 16 cut the rail lines between Rufisque and Tivaouane. Another storm then cut the Dakar-Rufisque section on August 29th, and rail service was only restored along temporary tracks on November 15th. The DSL was to claim that the abnormal ferocity of the storms absolved the company of responsibility. It was a wise claim under the circumstances for it enabled the company eventually to recover half the repair expenses from the government. But it was questionable. The severity of storms did vary widely from one hivernage to another; but the storms that caused the washouts were not uncommon for the region. Razy's report, not surprisingly, upheld the company's claims. But Bois, in communicating privately



with his superiors in the DSL in Paris, admitted that the storms, though severe, had not really been exceptional. But who, he asked, had known the local climate well enough before the railroad was built?<sup>45</sup>

The washouts were an example of the difficulties of erecting and maintaining permanent structures in the Senegambian region. The sharp contrast between the dry season and the hivernage could be particularly deceiving, since many apparently suitable areas, solid and apparently high during the dry season, could be innundated under torrents of water during some of the sporadic, tempestuous storms characteristic of the hivernage. Two successive innundations occurred in Rufisque during the hivernage of 1884 because that rapidly growing municipality had carelessly allowed new buildings to block the natural drainage of the locale.<sup>46</sup> St. Louis was also plagued by floods whenever the Senegal river reached high levels during its annual innundation, and many an enticingly attractive nearby island of the dry season would be submerged by the river during the hivernage.

There were other difficulties as well. The aridity of the dry season, the humidity of the hivernage, and the heat of both could crack or erode building materials rapidly. Termites were a trying nuisance, especially when they ate up the wood traverses holding the tracks, and most of the small wood buildings put up at stations in the in-

terior were destined to crumble rapidly. Too much, of course, should not be made of these difficulties, though it was in the DSL's interest to do so. Construction and maintenance in the tropics had their problems; but the company did not at least have to deal with the ravages of ice and snow, or the wide swing in temperatures of northern climes.<sup>47</sup>

The washouts of August 1884 ought to have been a personal disaster for Razy, since he had vouched for the technical solidity of the line during the receptions. Indeed, the ministry did order Razy's suspension in October 1884. It seems though, that Razy was really removed from his post because of a longstanding feud with his superior, the colony's Director of Interior, dating back at least to June 1884. Moreover, in spite of his removal from office and his unremitting insubordination, Razy continued on as Director of Public Works and Surveillance Engineer until March 1885 while the ministry ostensibly searched for a replacement. In March Razy was finally sent back to Paris to face charges, and was shipped from there to French Guiana, dying shortly thereafter.<sup>48</sup> The DSL's management, at least, was sorry to see him go.<sup>49</sup> His departure in any case made no difference in the procedures of receiving incompletely-equipped sections of rail line.

If there was a possible safeguard remaining in the procedure of conditional receptions of line sections, it

lay, as Razy had once pointed out, in a final review for the general and definitive reception of the entire line at completion (contract annex, art. 28). By the end of April 1885 only one, short unfinished section of 13.3 km between N'Dande and Kebemer remained, and this was ready by June 1st. Like all previous sections, some work remained to be done; but the reception commission of June 5 and 6 was willing to open the section, though without payment of the final portion of the subvention until completion of all works. DSL officials, however, flatly refused the offer. It was not simply the subsidy. The DSL was also demanding general and definitive reception of the entire line. Full acceptance of the line was ludicrous when some stations were still unbuilt, when important accessories were not in place, and when some parts of the line were on temporary tracks. But the DSL threatened to keep the N'Dande-Kebemer section closed, blocking long-haul traffic between the two ends of the line unless its terms were met.<sup>50</sup>

The new Director of Public Works, Chapron, proposed a solution decidedly favorable to the company. General and definitive reception of the line would be declared immediately, conditional upon completion of unfinished work later, and the final subsidy would be paid on completion. The governor, following Chapron's advice, overrode a still-resisting commission to adopt Chapron's solution. But, unexpectedly, DSL officials refused to accept all of

Chapron's conditions. While a perplexed governor was writing the ministry for new instructions, ministry officials in Paris were already striking a new bargain with top DSL officers. It was essentially the Chapron solution, but with immediate payment of the subsidy. A ministerial telegram of June 27th ordered the governor to accept the line under these conditions; and so, on July 3rd, the governor declared full reception of the line. As of July 6th, service between St. Louis and Dakar was begun, and on July 26, 1885, the complete, though not completed line was inaugurated at S. Louis.<sup>51</sup>

The ministry's haste in accepting a badly-built line is curious, but understandable. Ministry officials had certainly been aware of the defects of the line, at least since the disastrous breaks of 1884; and there were indications of a cooler attitude toward the company from that time.<sup>52</sup> Yet ministry officials were apparently entangled in a trap of their own making. To obtain parliamentary approval earlier, they had prepared a project for construction of the railroad at the lowest possible price.<sup>53</sup> Their objective had been to obtain a rudimentary line as quickly as possible, and there is reason to believe that they had deliberately allowed the entrepreneur to build cheaply and poorly, knowing that the necessary improvements for a commercially viable line were to follow later--at the state's expense. There was no point in stopping just short

of completion, when the state was already obligated to assume any deficits in receipts for the other 95% of the line. Certainly, there was no point in provoking a serious dispute that might lead to embarrassing public disclosures.<sup>54</sup>

Construction Wrangles The Batignolles Company had generally followed the Walter project in laying out the Dakar-St. Louis rail line, but not exactly. Company engineers had resurveyed the original trace on-site in 1880 and 1881, and, after approval of the concession law in June 1882, the Batignolles submitted for ministerial approval a comprehensive set of definitive plans specifying the route, gradient, profiles, and construction works along the line, as well as sketches of many station buildings.<sup>55</sup> These plans of September 30, 1883 naturally differed in many details from the original plan, compelling review and reapproval by the ministry; but this meant that colonial authorities in Senegal and the citizenry of the colony became acquainted with the project's details at the last minute.<sup>56</sup>

It was possible for Paris to disregard the impact of the rail line's trace on local conditions in the rural interior, where passage followed by right of conquest. But the route followed by the railroad at the approaches to the colony's ports did raise some important legal and economic questions.

In the case of Rufisque, Walter had projected a trace passing 2 kilometers outside the town, with the implicit intent of rerouting long distance traffic around it, and even of draining local commerce away from that town to Dakar. The lusty, spontaneous growth of the merchant's commune of Rufisque at the expense of Dakar, some 30 km away, had been jealously resented by colonial officials since Pinet-Laprade.<sup>57</sup> Brière de l'Isle had explicitly informed the ministry that his railroad plan was indeed designed to transfer Rufisque's commercial activity to Dakar by bringing the latter town with its superior harbor into closer contact with the interior.<sup>58</sup>

When the projected railroad plans were revealed in late 1882, however, they raised a storm of protest from the communal government and merchants of Rufisque. With large, essentially vacant areas just outside the immediate perimeter of the town, a colonial governor, less hostile to Rufisque than Brière had been, found it easy enough to satisfy the irate citizenry of the town. With the Batignolles also willing, modified plans were quickly drawn up to bring the station much closer to Rufisque.<sup>59</sup>

It was much harder to deal with the approaches into St. Louis and Dakar. Proponents of the project in the colony and the ministry had made much of the colonial railroad's purported advantage over metropolitan railroads in

obtaining land for the right of way through territory supposedly vacant and free. But land within the communes of the colony was not necessarily unfettered under French law, even if it was vacant, for even colonial authorities had been selling or conceding plots within them for some years.

The problem at Dakar was serious and complex. The original plans had called for establishing the Dakar rail stations, passenger and freight, on the bay of Dakar toward the northern limits of the town. In September 1882, Batignolles engineers, not wishing to wait for the substantial sea defenses that the colony was to build at this site, suggested withdrawing both terminals into the empty sand dunes farther north beyond the town's outskirts. To Legros, who was consulted on this question, it seemed as though the freight terminal might indeed be located in the dunes, but that the rail line should also be run down to the quais and piers of the port and the passenger terminal located centrally in the port. Whereas the precise site for the passenger terminal was left to further studies, Legros drew up in October a tentative trace for the track leading to the piers (the "tracé bleu"), and this was promptly accepted by the Batignolles, which needed immediately a track leading from the port to unload construction material coming by sea from France.<sup>60</sup>

With construction work scheduled to start in November 1882, this, however, was a late moment to begin revising construction plans, at a time when expropriation procedures ought to have been under way. Furthermore, when the commune of Dakar-Gorée learned of the revised plans, its citizens, land owners, and merchants protested bitterly. The rail line's approach into Dakar, coming as it did so close to the shoreline from the north, meant that the track leading to the piers would parallel the quais, blocking or at least hampering access to the port. Moreover, a passenger terminal in the port would congest an already overcrowded commercial area, squeezing out some merchants.<sup>61</sup> Opinion in the commune was divided, of course. Some wished to see both rail terminals at their original site at the edge of the port; others wished both out in the sand dunes, with no track along the quais. Others were in favor of the tracé bleu, and still others proposed siting the passenger terminal well inland in the plateau area to the west of the commercial area.<sup>62</sup> But opposition was strong enough to pass strong resolutions against the tracé bleu in the commune's municipal council and chamber of commerce, while such important firms as Maurel and Prom, the Compagnie du Sénégal et de la Côte Occidentale d'Afrique, and the Messageries Maritimes, and even Senegal's deputy to parliament attacked the government's plans.<sup>63</sup>



Batignolles engineers naturally protested against the delays blocking occupation of terrains needed for the railroad's main terminals in Dakar--terrains that the state was obliged, according to the 1880 contract, to deliver free. With an uneasy military situation at the time in Cayor the incumbent governor was also anxious to speed up work on the railroad, and he was determined not to let Batignolles officials use the delays in the delivery of terrains to blame him for any shortcomings in constructing the rest of the line. He therefore authorized the Batignolles in late February to lay track along the tracé bleu, and ordered expropriation to begin. Expropriation procedures in this colony were slower than in the metropole; but the entrepreneur impatiently took possession of terrains as yet unexpropriated to lay down much of his track along the quais, to the outrage of the adversaries of the tracé bleu.<sup>64</sup>

At this point, the ministry tardily recalled that parliament had not appropriated any funds to cover expropriation costs for the railroad, and Senegal's General Council refused to let the colony cover the discrepancy, even temporarily.<sup>65</sup> Apprised by now of the mounting local opposition to the tracé bleu, of the inconveniences of the trace, and of its own financial embarrassment, the ministry promptly suspended expropriation in early April, and called for further studies.

It was already too late. Much of the "permanent" track already lay along the quais, and the purported costs of removal exceeded the costs of expropriation. Moreover, a newly laid foundation for the freight terminal blocked any relocation of the passenger station in the dunes. Unfortunately, the Batignolles track was now also occupying unexpropriated land illegally. Promptly hauled into court by one irate landowner, the Batignolles sued the government in turn. After a long, tortuous series of legal and political maneuvers too complicated to relate here, the ministry finally chose to retain the tracé bleu.<sup>66</sup>

The strong will of acting Governor Bourdiaux forced a solution. Local opposition was eroded by placating some (such as the Messageries Maritimes) and by such stern measures as dissolving the commune's municipal council. Terrains expropriated for both terminal and line were reduced to the bare minimum, while the deviations of the Batignolles track from the tracé bleu at some points were used to whip the company into line on this question.<sup>67</sup> Nevertheless, it took until December 1883 - January 1884 before the extent of expropriation was settled, until March 1885 before all terrains were delivered to the company, and until January 1886 for the expropriation procedures to be concluded, with one proprietor holding out until late 1887.<sup>68</sup>

Batignolles officials were naturally annoyed at the deliberate pace of expropriation procedures and at the government's procrastinations, which slowed and hampered their construction efforts. It was a bad beginning, but the company was able to turn it to account as an argument for the reception of unfinished rail sections, beginning with the Dakar-Rufisque.

The access route into St. Louis, and the sites for its rail terminals were resolved more easily. The terminals were not to be placed on the island of St. Louis since that would have required building a costly metal bridge parallel with the wooden "pont Faidherbe." The passenger and freight terminals were slated instead for sites well removed from the bridge in the sparsely populated suburbs on the continental "island" of Sor.<sup>69</sup> In partial compensation for the terminal's remoteness, an additional riverfront freight terminal was destined to be installed downriver from the pont Faidherbe; but this supplement to the original plans would be built after completion of the railroad.<sup>70</sup>

Much of the property on Sor was not privately owned; but only a small portion of this marshy island was solid enough to hold the tracks and rail stations. To save time and expense the ministry had proposed that the tracks simply be placed on the existing public road leading out of St. Louis into the interior. Local merchants were unhappy with the siting of the terminals so far from the city center, but even more concerned about clearing the road for commercial

traffic by removing the tracks from it. To please them, the track was shifted to one side by 12 meters; but since this shift entailed expropriation of a few properties along a 6 meter wide strip, more expense was involved than originally anticipated.<sup>71</sup>

The Batignolles had been anxious to start work at this end of the line quickly, but they were unable to occupy some needed properties until March 1883 after the colonial government belatedly started expropriation. As in Dakar, the ministry, finding itself without the necessary funds, attempted in April to halt the expropriation procedure. However, in this case, the expropriations were too far advanced in the courts to be halted.<sup>72</sup> The procedures were slow, nevertheless, with some land for the town's passenger station turned over only by December 1883.<sup>73</sup>

More awkward problems were encountered on the access route only 5 kilometers outside St. Louis. At that point, the public road crossed the marigot of Leybar by means of a small bridge. By agreement in Paris, the railroad company was scheduled to build a 120 meter, metal bridge for the railroad at Leybar after tearing down the colony's wooden bridge. Since this was the only structure of any significant size in the Dakar-St. Louis project, the company was anxious in December 1882 to dismantle the old bridge and pour concrete supports for the new as quickly as possible. Unfortunately, with the only other usable road between St. Louis and the interior flooded and impassable until the

following February, the demolition of the Leybar bridge would not only hinder St. Louis' commerce, but also endanger the military expedition about to be launched into Cayor.<sup>74</sup>

The Batignolles was, nevertheless, entitled by prior agreement in Paris to proceed with demolition, and the colony had little choice except to organize a temporary ferry service quickly in order to assure pedestrian and caravan traffic across the marigot. A resentful colonial government hoped that the entrepreneur would at least share the expense for this unforeseen ferry service.<sup>75</sup>

This was only the first of several wrangles to dog the passage of the railroad at Leybar. Colonial officials were soon at odds with company officials over the width of a passageway on the bridge to carry pedestrian and carrier traffic.<sup>76</sup> Frustrated in its initial efforts to be refunded for the ferry, and forced to pay for a widened bridge passageway, the colonial government hoped at least to make the Batignolles reconstruct the unusable pedestrian approaches to the bridge. Ultimately they were indeed able to get both the Batignolles and the ministry to share in the costs.<sup>77</sup>

The relationship between the railroad and the colony it served was obviously influenced by the circumstances and variations of local political and economic conditions. But the discords over access routes, as well as the methods of construction illustrate the surprising extent to which the

ministry was attempting to insulate the DSL from the vagaries of local conditions. The terrain on which the company would operate, with which its officials would be most concerned, was the legal and financial terrain laid out in the revised contract of October 30, 1880. Operating conditions in Senegal would be a primary concern of the entrepreneur, but only within the context of the convention and subsequent agreements that had carved out paths leading into the French treasury. Company management was centered in Paris, not Dakar. Contacts between officers of the company and ministry officials, or regulatory bodies overseeing colonial railroads, would mean that railroad policy could be set above the heads of colonial officials in Senegal, sometimes to the latter's surprise, and often to their chagrin.<sup>78</sup>

Ministry officials in Paris would often be annoyed when they felt themselves at a disadvantage with DSL executives, who were better informed by company agents on the scene than the officials had been by technically less-proficient colonial bureaucrats. Nevertheless, the metropolitan authorities basically wanted this arrangement. The Dakar-St. Louis had been inserted into Senegal on the ministry's initiative for strategic reasons, but at great expense to the state. Government officials would aim now at minimizing the railroad's financial burden on the metro-

pole's budget, or at least to avoid the appearance of a needless drain. Attempts by colonial administrators or merchants to expand railroad services at metropolitan expense would be regarded from this viewpoint as serving narrow interests in disregard of the common good. The metropolitan interest was to terminate the tax cash flows to the colonies, and in this sense the metropolitan authority was pitted, to a degree, against leading elements of its own colony and the colony's well-being. That this fundamental conflict between the metropole and its colony did not develop into more open discord in this era, was due not only to a growing rail traffic that reduced the government's fiscal losses, but also to the sharp tactics of the company itself. The local colonial government and metropolitan officials were induced to form a common defensive front in the face of suspicious DSL actions and operations. Local merchants, defending their own commercial interests, would also keep the government informed of any DSL errors or abuses that might arise. But, later on, the three-sided conflict would emerge again, with the metropolitan treasury officials and the DSL allied, often as not, against the local interests of the colonial government.

Africans and the DSL There is less information about the initial relations between the railroad and the Africans who were served by it, or simply lived near it. The abuses of

either party against the other, moreover, were more likely to attract attention than any mutual satisfaction. Both the entrepreneur and the colonial officials were deeply concerned about the possibility of armed attacks by African warriors, especially the "tyeddo" of Lat Dior, against railroad facilities or personnel. But railroad construction encountered few troubles in Cayor. First of all, the tracks did not enter Cayor until the hivernage of 1884, and then the vigilance of Samba Laobé and his supporters prevented serious incidents. The most notable incident in Cayor, in 1884, was the disappearance during the hivernage of 1200 meters of pickets marking the railroad trace.<sup>79</sup>

Far more serious incidents occurred in territory long-annexed to the French colony, in Serer country between Rufisque and Thiès. The area had long been reputedly dangerous for travellers and caravans enroute to or from Rufisque, and, as such, an embarrassment to a French administration incapable of mastering it. One June 15, 1884 a fight broke out between railroad agents and an African at the well of Pout. Soon thereafter, large rocks and other obstacles were found lying on the tracks in obvious attempts to derail moving trains. Attempts by railwaymen to seize suspects in the vicinity of the sabotaged lines only increased the seriousness of the incidents, with an armed band trying to free a prisoner



in one instance, and projectiles or even shots fired at trains in others. The company quickly withdrew European workers from the area.<sup>80</sup>

The news of the incidents alarmed French colonial authorities. Their first reaction was to make an example of two presumably guilty villages by razing them; but the colony's chief military officer counseled against an armed expedition in this densely wooded area during the hibernage. Military action was wisely confined to escorting trains through the area and patrolling the line.<sup>81</sup>

Colonial authorities investigating the incidents soon found that many had been instigated by railroad personnel. Railroad agents had tried to bar Africans from the well at Pout. In other cases they had seized apparently innocent bystanders near sabotaged tracks. The acting governor complained to the ministry of these acts in a letter of August 9th, and the ministry asked the DSL to make sure that their personnel respected Africans neighboring the rail line.<sup>82</sup>

The DSL reacted peevishly to these charges. The imputation of the incidents to their personnel, they answered, was preposterous. These charges arose, they claimed, because the inquiries had been conducted without DSL participation, and they asserted that the actions of the railroad agents seemed reasonable. Moreover, they

added, in a separate note:

It appears to us that precise orders ought to be given so that the railroad and its environs are respected in fact as properties of the company and the state. To this effect, it would be necessary in our opinion that the black be persuaded indeed (and only an example would persuade him) that he cannot attack with impunity the property and agents of the company. For that, it is henceforth necessary to treat seriously the official reports drawn up by company agents against the blacks, and to take appropriate actions . . . When an aggression occurs, an immediate and serious repression is necessary and not an inquiry two months after the events.<sup>83</sup>

It is probable, however, that the allegations against the railroad agents were true.<sup>84</sup> Railroad laborers of the era, it should be noted, were generally notorious for their tough behavior and devil-may-care antics.<sup>85</sup> Moroccan laborers hired for work on the Upper Senegal, for example, quickly gained a reputation for resorting readily to knives.<sup>86</sup> Most of the construction workers brought in by the Batignolles were Italian, though a few hundred Africans were also recruited locally for clearing brush.<sup>87</sup> As early as February 1883, municipal authorities in Rufisque were asking for a larger police force to handle visiting construction workers. In St. Louis the death of an African in a brawl with laborers, led the mayor of that town in January 1884 to prohibit workers of Italian nationality from entering St. Louis--a measure withdrawn after energetic protests by the Italian consul.<sup>88</sup>

This kind of rough-hewn arrogance may also have been carried over into the countryside. In one recorded inci-

dent of December 1884, laborers at KM 37.5 reported an armed attack by a band of Serers. A careful police investigation later showed that the "band of 8 armed Serers" was really two unarmed Lebus who had been beaten by the laborers after the latter refused to pay for provisions brought them by the Lebus.<sup>89</sup>

The presence of civilian railroad personnel residing at stations in the interior of Senegal was also a new factor, and it was unclear what the relationship between railwaymen and the inhabitants would be. But it is clear that colonial officials considered the newcomers a nuisance to some degree. In September 1886, the stationmaster of Kelle, witnessing a petty trade dispute, mistakenly took the mediator of the dispute, a trader from St. Louis, for a dangerous agitator. After foolishly provoking the trader into a fight, the stationmaster spread the alarm about the imagined agitation.<sup>90</sup> Unimportant in itself, the incident illustrates the arbitrariness and suspicion which could arise with isolated agents thrust into positions of authority in a culturally alien milieu.

The tendency of some stationmasters to give shelter to escaped slaves also roused the apprehension of colonial officers.<sup>91</sup> In fact the insertion of a thin ribbon of French-controlled territory in Cayor, with commercial centers beginning to form in the perimeters about each

of the stations, had brought a host of new political problems.

The year 1886 had started out with good relations between the damel of Cayor, Samba Laobé, and the colonial government of Senegal. The damel had rendered the French signal services. He had kept the rail line relatively trouble-free in Cayor, and when a rail paymaster's car was ambushed by some Africans--disgruntled former employees--the damel ordered his men to track them down. When Cayor's peasants refused to sell their peanuts at low prices in 1885-86, Samba Laobé dutifully encouraged peanut sales. Despite a strong initial reluctance, the damel had also consented to extend the perimeter of French holdings around rail stations from 100 to 300 meters in December 1884. He had hoped to receive in compensation some rights over the lost northern province of N'Diambour or the right to collect taxes at the rail stations; but had finally settled merely for a free pass for himself and an entourage on the railroad.<sup>92</sup>

The abortive attempt by the damel to conquer Djolof ended the era of good feelings. With Cayor facing invasion in turn from Djolof, the new governor of Senegal intervened, restoring peace at the price of a heavy fine on Samba Laobé. According to Governor Genouille's later account, a humiliated Samba Laobé had ungratefully vented his spleen by

maltreating French subjects and permitting outrages against French territory.<sup>93</sup> There is no doubt of the damel's annoyance. Nevertheless, the colonial government had not played an entirely innocent role. Despite later disclaimers, it may actually have had a hand in Samba Laobé's invasion of Djolof in the first place. Moreover, the new governor had tried to profit from the damel's embarrassment by again expanding the perimeter around the rail stations in Cayor from 300 to 500 meters, while forcing the damel to accept a permanent French resident at N'Dande.<sup>94</sup> The damel was obliged to accept these terms with an army of Djolof entering Cayor; but he avoided implementing them later. Perhaps he really was encouraged, as the governor suspected, by important merchants of St. Louis who were Genouille's political enemies.<sup>95</sup>

Many of the growing disputes centered on the new commercial nuclei growing next to the rail stations in Cayor. On the one hand, the colonial government was concerned over generous grants of land by the damel to favored merchants just outside the French-controlled perimeters around the stations. Closely linked to this question was the problem of taxation, with some merchants complaining about having to pay taxes to both the damel and the French administration. It was not that commerce was hostile to Samba Laobé; on the contrary. Maurel and Prom's agent at

Tivaouane for one, favorably contrasted the damel's prompt assistance to the administration's inaction. Probably some traders were simply using an ambiguous situation to avoid paying colonial taxes.<sup>96</sup> It was a minor jurisdictional question. But it touched on fundamental issues of sovereignty, and Genouille took it seriously enough. He began to consider deposing the damel, and breaking up the remainder of Cayor into 4 or 5 provinces.<sup>97</sup>

That the colonial government was following a hard line toward the African populations after the start of Genouille's administration is evident from an incident of some gravity on the railroad line. On September 10, 1886, a train had run over some cattle near the village of Diarméó Guèye in N'Diambour not far from Louga.irate villagers beat up a train's crewmen. Furious, the officer commanding the fort of Louga ordered that the village pay a heavy fine, the two principal culprits to be hung in case of nonpayment. The obliging chief of N'Diambour promptly hanged the hapless wretches publicly in Louga, while levying the fine as well.<sup>98</sup>

Another serious incident relating to the railroad occurred during Genouille's temporary absence from the colony, as a body of horsemen menaced the station of Tivaouane in August to recover a pair of escaped slaves taking refuge there. The incident was not taken seriously

by the French Commandant nearby at Thiès, who chose to ignore the problem. Indeed it is likely that had no force been used, French authorities would have returned the fugitives and reprimanded the stationmaster. But officials in St. Louis were horrified by the impression that this armed action against the station might make. The Commandant of Thiès was reminded that Tivaouane's station lay in French territory, not Cayorian. "By your action," he was informed, "you have sanctioned a violation of this right." A platoon of "spahis" was dispatched to N'Dande on the railroad, its officers changed with obtaining satisfaction.<sup>99</sup> The influence of the chiefs of the crown bondsmen, Demba War and Ibra Fatim Sar, on the damel was particularly deplored. Demba War, the perpetrator of the Tivaouane incident indeed was to be arrested if possible.<sup>100</sup>

From the arrival of the spahis at N'Dande, archival sources are inconveniently meager. According to the governor, Samba Laobé began to threaten to expel traders from Tivaouane if they did not pay him taxes by October 6th. Recently returned, Genouille sent an officer to N'Dande with orders to interview the damel. But when this officer reached Tivaouane by train with the troop of spahis, Samba Laobé refused to meet him. Tempers grew short and the officer ordered a mounted charge into the damel's camp. While the damel's men were caught dismounted, obviously taken by surprise, Samba Laobé fled. Pursued, he was over-

taken and cut down. Ambush, charged a St. Louis newspaper linked politically to the damel, despite the governor's denials.<sup>101</sup>

In any case, Samba Laobé's death created a major political crisis in Cayor. To secure the rail line, the governor had two special trains outfitted with replacement rails and Hotchkiss machine guns--a sight, he noted, that produced a visible impression on the populace.<sup>102</sup> But the Cayorian notables and the governor quickly came to terms in this crisis in order to bar from power their common enemy, Lat Dior, a logical successor to the deceased Samba Laobé.

With a completed railroad bestriding Cayor, the political imperatives of the situation were altered substantially. It was not simply that the railroad had opened up that country to direct French military and political domination. The railroad now represented an expensive and vulnerable fixed investment that needed protection, and the incompatibilities of French and African interests persuaded French officials that African interests had to be strictly subordinated to their own.

Direct annexation of Cayor was unpalatable, because legal and political problems relating to slavery and taxation were then currently stirring up turmoil in rural districts long-annexed to the colony. That was why no part



of Cayor had been annexed in 1883; and if anything these domestic turmoils had grown worse by 1886.<sup>103</sup> A weak damel, like the deposed N'Goné Fal, would only invite ambitious pretenders; a strong damel, like Lat Dior--or even like Samba Laobé despite his cooperativeness--would remain a possible source of autonomous dissension in a new political dispensation calling for chiefs to serve as effective, but obedient subordinates.

The solution, as imposed by the governor and ratified by an assembly of Cayorian notables at N'Dande on October 19th was to divide Cayor into six provinces. Despite the objections of the leading hereditary notables of Cayor, the territorial command of each of these provinces was given to the chiefs of the crown bondsmen--leaders of the only significant military forces in Cayor. Ironically, Demba War, only recently under a cloud, was given command of the province of Saniokhor and appointed "President of the Confederation of Cayor."<sup>104</sup>

It was the end of an independent Cayor. When Lat Dior tried to interfere, he was pursued, then killed in an armed encounter. Attempts by other pretenders to assume the crown were also quickly squelched.<sup>105</sup> Demba War and the other appointed chiefs certainly retained a share of the power. But if the French resident now installed at N'Dande gave an order, they were henceforth expected to obey.

DSL construction under fire As for the Dakar-St. Louis railroad, the tranquility of its operations now seemed assured. Its employees no longer reported manifestations of hostility, and its agents could concentrate on operation of the line in Senegal and on legal and contractual battles in Paris. Construction of the entire line had officially been completed in October 1885; but massive repair and rebuilding of the rail lines and facilities were also undertaken by the DSL after the line opened.

Unfortunately for the DSL, this initial phase of construction could not be closed easily or quickly. The enormous annual deficits of DSL operations and maintenance--deficits guaranteed effectively by the state according to the contract--aroused a great deal of concern in Paris. Most members of the governmental Account Verification Commission were shocked by the size of the payments by the state to the DSL, and they were trying vainly to pare down the DSL's massive operations expenses.<sup>106</sup>

In November 1886, Paul Etienne, an engineer of roads and bridges on loan from the Ministry of Public Works, was finally sent to Senegal to check conditions on the line. Etienne's report of March 1887, impressive for its technical thoroughness, was a severe indictment of the original construction of the line to which he attributed the blame for the washouts of 1883 and 1884.<sup>107</sup> The line's trans-

verse profiles, he found, did not generally conform to profile types of the approved plans. Confirming Friocourt's earlier observations on roadbed and track construction, he noted that soil for embankments and ballast had simply been taken from the vicinity of the line, much of it entirely unsuitable and unstable, despite the supply nearby at Rufisque of excellent stone for a proper ballast.<sup>108</sup> Soil extracted from cuts had simply been cast to the rear by shovel and was easily blown back by the wind. Etienne found many of the short spans along the line defective, and a short bridge at Hann, badly damaged in 1883, was still only propped up unsteadily and needed to be redone. After reading local records on the construction, he had particularly harsh words for the role of the Surveillance Engineers and the functioning of the reception commissions. Neither the state nor the DSL, he concluded, had properly defended its interests against those of the Batignolles.

The report of 1887 was politically embarrassing. It was therefore permitted, as the phrase goes, "to slumber in the dossier." Nevertheless by the end of the parliamentary session of November 1888, a deputy, Adolphe Turrel, apprised of the report's contents, read some choice excerpts in the Chamber to the outraged deputies, while the Under-Secretary of Colonies could only reply with embarrassed evasions. Although no enemy of colonial expansion, Turrel raised the question again in November 1890, with even more

revelations, but nothing was done.<sup>109</sup> With the 10 year limit on a builder's responsibility about to expire, Turrel again took to the floor of the Chamber in March 1895, demanding that the builder be held to account for any misdeeds. The result of his demand was a new investigation by a 3-man commission, headed by the engineer Chaper.<sup>110</sup>

This commission's report, obviously designed as an attack on the Etienne report of 1887 and as a defense of the builder, effectively closed the affair as a political issue.<sup>111</sup> The line's transverse profiles, it admitted, often did not conform to contract specifications, but this stemmed, it claimed, from the use of inferior soils, whose employment had been specifically permitted in the annex to the concession contract of October 30 (article 18). With this inferior soil, the profiles used were more stable than the regulatory profiles. In any case, the builder was legally covered by the government's official reception of the line. Construction expenses, it noted, had certainly entered the DSL's operations accounts, but at this late date it was impossible to know by how much; so the company was also legally secure on this point. It might be said that the entrepreneur's agents had acted high-handedly and deviously, but they had not acted fraudulently according to the contract's terms and the tolerances permitted by agents of the state. The crucial faults lay instead,

they concluded, in the defects of the original Walter project calling for unrealistic economies, in the defects of a contract annex copied blindly from those of Algerian railroads, and in the poor defense of the state's interest by governors and Surveillance Engineers.<sup>112</sup>

This report is a fascinating document, as much for its apparent blindness to the key responsibilities of top ministry officials in neglecting the state's financial interest, as in some remarks on the builder's construction methods that were in some ways more damning than Etienne's report of 1887. The final trace of the line, it noted had been laid out by company engineers with an eye to reducing construction time and cost to a minimum by turning the least volume of soil. As a result, the tracks were located in many places on the lower part of slopes, so that flood waters cascading down the slopes into rail embankments of unstable earth easily washed out the roadbeds during the hivernages of 1883, 1884, and 1885. Sufficient drainage would have solved the problem; but the works had been accepted as they were by the state, absolving the company of blame. One of the major defects in the structure of the line was the over-extended spacing between traverses along the rails, which (while saving the company 600,000 francs) left the track unstable under stress, causing numerous derailments. Once again the builder was absolved,

because the ministry had specifically granted a variance on the spacing of traverses in February 1881.<sup>113</sup> The short masonry spans, seemingly defective in 1886, now seemed solid enough. But the bridge at Hann was still as delapidated as in 1883. Furthermore the metal Leybar bridge, the one structure which Etienne could praise in 1887, had developed dangerous cracks, owing to defects in the original construction.<sup>114</sup>

A careful analysis of the results of this report by a high official of the new Ministry of Colonies in 1896 drew more judicious conclusions. The fault, he wrote, did not lie with Razy or Chapron, however poorly they had performed, but with higher governmental authorities in the ministry who failed to give the necessary orders. These officials apparently had thought that,

it was a matter of a sort of provisory line, constructed at little expense and designed ultimately to receive complementary installations and successive improvements. But if it were thus, duty required informing parliament and offering it the alternative: either to construct a railroad under normal conditions with a slightly higher immediate expense, or to sketch out a rail line, put hastily into service and completed by the concessionary company by means of an annuity during the period of concession. In fact, it is the latter result which was attained.<sup>115</sup>

The company then had only followed its contract, and if it had profited, perhaps even unduly, it could not be sued for illegal acts or for most of the defects of the line. All that could be done at this point were some minor legal

actions compelling the company to advance an additional 80,818 francs of capital to match an extra governmental subsidy covering an extra 4½ kilometers of constructed rail length on the line, and to force it to pay for repairs on the bridges of Hann and Leybar.

In fact, this was all that was done.<sup>116</sup>

Notes

1. [-Alexis] Bois, Sénégal et Soudan, travaux publics et chemins de fer (Paris, 1886), p. 66.
2. On the Batignolles firm, see ANF series 89AQ, still being classified.
3. Funeral eulogy for E. Gouin in P.V., Conseil d'Administration, March 30, 1885, no. 224, ANF, 89AQ1; see also Société de Construction des Batignolles, L'oeuvre d'un siècle, 1846-1946 (Paris, 1952); R. Cameron, Economic Development. pp. 99-100.
4. See ANF, unclassified, 89AQ21 and 89AQ22, registers of share transfers, especially 89AQ21, pp. 23, 31, 32, 36, 37, 40, 47-51, 53, 56.
5. P.V., Conseil d'Administration, March 18, & 20, 1875, ANF, 89AQ1, nos. 38, 39; JORF-Débats Parl.-Senat, February 17, 1881, pp. 109, 110.
6. Jean Bouvier, Les deux scandales de Panama (Mesnil-sur-l'Estrée, 1964), pp. 105 ff.
7. P.V., Conseil d'Administration, March 18 & 20, 1875, ANF, 89AQ1, nos. 38, 39; same, January 25, 1877, Ibid., no. 77; Ibid., no. 87.
8. Director of the Est railroad, Jacqmin to Freycinet, June 22, 1879, ANF, F14/12437.
9. Legros was convinced of the need for construction by a private entrepreneur as early as September 1879 (See September 22, 1879, Legros Resumé, pp. 10-12), but first mentioned a guarantee in the note of November 8, 1879 (in AMMP, GG1-carton 45), which contained the postscript notation dated December 20, 1879 that the estimated building costs of 50,000 to 60,000 francs per kilometer "ne serait pas accepté par des Compagnies présentant de sérieuses garanties." - Batignolles engineers were surveying the line from January 7 through 16, 1880. (Bois, Sénégal et Soudan, p. 33; GS to MMC, January 8, 1880, FOM, Senegal I,63).
10. Note to Minister, July 5, 1880, Legros Resumé, p.46; same, August 18, 1880. Ibid., pp. 51-52 (latter in FOM, Senegal XII,41); Ministerial arrêté of September 3, 1880, AMMP, GG1-carton 45.



11. P.V. of bidding and all three bids are contained in FOM, Senegal XII,41; E. Labiche remarked in the Senate debate of February 17, 1881 that Freycinet, who was now strongly for the Senegalese railroads, had also played an important role for the Bône-Guelma in 1879 (JORF-Debats Parl.-Sénat, February 17, 1881, p. 110).
12. Batignolles to Director Interior, Senegal, April 1, 1881, SARS, DCF.
13. Report to Batignolles stockholders, meeting of November 25, 1881, ANF, 89AQ11.
14. See Article 2, of the annex ("cahier des charges") to the contract of October 30, 1880; JORF-Débats Parl.-Chambre, February 20, 1881, pp. 296-298.
15. Legros originally intended that the entrepreneur put up only half the capital in cash (Note to Minister, November 22, 1880, Legros Résumé, pp. 54-57), and the railroad bill of November 1880 specified that "at least" half the capital be in cash. Members of parliament objected particularly to effective payments by means of "apports." See JORF-Débats Parl.-Chambre, February 20, 1881, pp. 296-303, and Sénat, February 23, 1881, pp. 179-185. The final bill of June 1882 stipulated full payment for shares in cash, but the DSL delayed full payment, by noting that there was no stipulation for immediate payment. See DSL to Sous-secrétaire d'Etat de la Marine et des Colonies (henceforth S/Sec), October 19, 1883, FOM, Senegal XII,42; draft MMC to Minister of Finances, December 20, 1883, Ibid.
16. Quoted in note to minister, November 22, 1880, Legros Résumé, pp. 54-57.
17. Ibid.
18. See the report of Ch. Brun to the Senate, no. 373, 1881 session, "séance" July 1, 1881, in FOM, Senegal XII,69; and the report by Arthur Leroy for the "Special committee charged to examine the law adopted by the Senate for a Dakar-St. Louis railroad," no. 688 of the Chamber of Deputies, séance of March 27, 1882, Ibid.
19. Law of June 29, 1882, in Ministry of Colonies, Documents relatifs au chemin de fer de Dakar à St. Louis (Paris, 1914), pp. 1-35; copy of Minister of Finance to MMC, March 6, 1882, SARS, DCF; copy Lemaire to MMC, March 10, 1882, Ibid.; copy Minister of Finance to

MMC, March 18, 1882, Ibid.; See copy Lemaire to MMC, September 18, Ibid.; The Batignolles board of directors approved Lemaire's engagements dated December 18, 1880, February 1881, and March 10, 1882 in their meeting of April 25, 1882, ANF, 89AQ1, p. 182. See also Alfred Picard, Les chemins de fer français, Vol V (Paris, 1884), pp. 677-681.

20. With annual interest and amortization at 2,246 Fr/km-or 4.6%.
21. Ch. Burn report no. 373, loc. cit., footnote 18.; see also "Note relative à la construction et l'exploitation du DSL," published by the DSL in December 1888 (copy in FOM, Senegal XII,68), which noted that an error in cost estimates of only 10% would wipe out marketing profits.
22. JORF-Débats Parl. Chambre, February 20, 1881, p. 291.
23. Draft MMC to Batignolles, May 1, 1883, FOM, Senegal XII,42; P.V., Consultatif du Contentieux, April 24, 1883, Ibid.
24. See note by LePeuple, in annex to P.V., May 17, 1886, in FOM, TP,-Register of the P.V. of the Commission de Vérification des comptes du chemin de fer de DSL-numbered 31 (henceforth: Reg. 31), pp. 124-129.
25. Bois' career is outlined in document no. 103, ARS, 035.
26. Bois, Sénégal et Soudan, p. 34; Moniteur du Sénégal, December 8, 1882, p. 225. A quarantine for yellow fever, lifted in October, had to be reimposed on November 28th.
27. Copy of GS to MMC, December 23, 1882, FOM, Senegal XII,43; Bois, Sénégal et Soudan, p. 35.
28. Draft GS to MMC, March 23, 1883, ARS, 033; Blondelet to GS, March 24, 1883, SARS, DCF; GS to MMC, May 24, 1883, FOM, Senegal XII,43.
29. A printed brochure on the inauguration of the Dakar-Rufisque section is in FOM, Senegal XII,42; see also Bois, Sénégal et Soudan, p. 37.
30. The dates are taken from the draft of the Chaper report, August 6, 1895, FOM, TP, pp. 227-294, passim., and from the draft report in FOM, Senegal XII, 69;

the numbers of workers are given in Bois, Sénégal et Soudan, pp. 38-41, as 570 laborers imported in 1882-83; 50 engineers or agents and 750 laborers in 1883-84; and 55 engineers or agents and 707 laborers in 1884-85. The driving of the silver spike is noted in GS to MMC, May 14, 1885, FOM, Senegal I,73; but the Chaper report contended that the line was only ready, in reality, on June 1st.

31. Article 4 of the convention of June 29, 1882.
32. Friocourt to GS, April 28, 1884, SARS, DCF; Friocourt to MMC, August 22, 1884, FOM, Senegal XII,68.
33. The arrêté of December 31, 1883, appears in Bull Admin du Sénégal, 1884, pp. 4-5; The procès-verbaux and reports of the Verification Commission are recorded in three registers, labelled 31, 32, and 33, in FOM TP. On technical surveillance, see: S/Sec to GS, November 3, 1883, SARS, DCF; same, April 4, 1884, Ibid.; GS to MMC, March 9, 1884, FOM, Senegal XII,66.
34. Article 28 of the annex to the Convention of June 29, 1882 authorized provisory reception of line sections by representatives of the colonial administration; the ministerial dispatch of May 6, 1883 (copy in Bul Admin du Sénégal, 1883, no. 262) see also dispatch of Director of Colonies, May 19, 1883, Ibid.; no. 269.)
35. A description of the P.V. of the ad hoc commission is in the draft of the Chaper report of August 6, 1895, pp. 245-255.
36. Friocourt to GS, April 28, 1884, SARS, DCF; report by Friocourt, May 10, 1884, FOM, Senegal XII,68; Friocourt to MMC, May 10, 1884, Ibid.; DSL to S/Sec, May 29, 1884, Ibid.
37. Friocourt's complaints were discussed in the Verification Commission's session of June 27, 1884, Reg. 31, pp. 10,11; see also the annex, Ibid., pp. 13-19.
38. Extract P.V., Administrative Council of Senegal, May 6, 1884, SARS, DCF; P.V., Commission of reception, M'Pal-Louga, June 4, 1884, Ibid.; DSL (Bois and Vieuxtemps) to GS, Ibid.; Legros approved of the governor's action in overruling the commission-Note for S/Sec, July 12, 1884, Legros Resumé, p. 154.
39. Friocourt to MMC, August 22, 1884, FOM, Senegal XII,68.

Friocourt quoted from a letter by Bois to his superiors at the DSL in Paris, December 13, 1883: "the Surveillance Engineer appears to forget completely the interest of the State that he is charged to defend."

40. Draft S/Sec to GS, June 4, 1884, no. 160, congratulated Friocourt for his zeal, in FOM, Senegal XII,68; draft S/Sec to GS, June 4, 1884, no. 161, Ibid., while commending Friocourt, suggested that the documentation he requested was superfluous. Félix Faure suggested that Friocourt stick to a verification of DSL receipts, not expenses; and that any further recommendations on construction methods would not be "useful," since the company was living up to the contract:-- the draft S/Sec to GS, October 18, 1884, Ibid., suggested only minor changes in surveillance.
41. Razy's copy of the conference of December 5, 1883 in the Cabinet of acting governor Bourdiaux, FOM, TP: the Chaper report of August 6, 1895, Ibid., p. 242, was trying to throw the blame on Razy by taking his remark out of context.
42. Report by Razy, March 14, 1884, SARS, DCF; report by Surveillance Engineer, May 30, 1884, Ibid.
43. GS to MMC, May 9, 1884, ARS, 2B58; same, June 23, 1884, Ibid.; Director Interior, Senegal, to Chief Public Works, May 17, 1884, SARS, DCF; draft S/Sec to GS, June 4, 1884, FOM, Senegal XII,68; according to the Chaper report of August 6, 1895, pp. 183-184, a dispatch of June 5, 1884, no. 169, decided in favor of Razy. Friocourt kept up his complaints, as in his letter to MMC, September 5, 1884, FOM, Senegal XII,68, which bore a ministry official's notation "This is the business of technical . . . surveillance, not financial surveillance."
44. Razy's report of April 6, 1884 on the Pout-Tivaouane line is mentioned in the note to S/Sec, May 15, 1884, by Legros, FOM, Senegal XII,43. Legros agreed that the section not be opened until after the hibernage; A series of incidents occurring in rural districts of the colony in June made the colonial government jittery. War was feared in case Samba Laobé chose to betray them. The acting governor wrote in the political report to MMC (August 23, 1884, ARS, 2B75): "The essential thing is to construct the line, whose completion will permit us to regulate this question finally as we

- please."; see also same, September 9, 1884, Ibid.
45. P.V., Verification Commission, November 6, 1885, Reg. 31, pp. 98-105; the DSL had already protested suspension of the interest guarantee for the period in 1883 when the Dakar-Rufisque had been cut, and officials of the Ministry of Marine had sided with the DSL (P.V., Verification Commission, January 31, 1885, Reg. 31, pp. 38-49); but an early report by Razy for the Director of Interior, August 22, 1884, SARS, DCF, actually blamed the company for the wash-outs; See also the copy, arret of January 13, 1888 of the Conseil d'Etat in Reg. 31, pp. 216-221; and the useful "Réponse aux pourvois formés par la Compagnie DSL concernant le règlement de ses comptes d'exploitation 1883-85," by Houette-February 1891, copy in FOM, Senegal XII,65.
  46. Mayor Rufisque to Director Interior, August 10, 1884, SARS, DCF; Director of Public Works to Director Interior, August 13, 1884, Ibid.; Municipal Council of Rufisque, P.V., séance of November 21, 1884, SARS, DCF.
  47. See "Rapport sur l'état des postes du fleuve et sur les réparations nécessaires," by Constant, doc. 26 (Plans 1870-75) ARS, P3; the climate's effect on wood is discussed in a report on the functioning of the "voitures système Labastie," ARS,0243.
  48. An unsigned, undated note in the acting governor's handwriting (the Director of Interior, Quintrie) accompanying a Razy letter of December 22, 1884, SARS, DCF, said: "Besides, M. Razy has entered into open warfare with his bosses from the moment he received his notification of recall. He refuses requests for service addressed to him from the Director of the Interior, and if I were not tied by your instructions, I would make him leave without waiting for his successor, as his attitude is becoming intolerable."; a letter of Razy to Director Interior, September 25, 1884, SARS, DCF, refers to the earlier quarrel in June 1884; a copy of Director Interior to Director Public Works, December 1, 1884, Ibid., refers to the ministerial dispatch of October 21st relieving Razy of his functions.; Legros was furious with Razy on hearing of the inundations--Note to S/Sec, Legros Résumé pp. 156, 157; Razy's death was mentioned in the P.V., November 6, 1885, Reg. 31, p. 99.
  49. DSL to S/Sec, March 30, 1885, FOM, Senegal XII,43; Razy

was a particularly quarrelsome fellow who undermined his boss in the Haute Fleuve railroad campaign of 1882-1883, and who unsuccessfully attempted to seduce the wife of a subordinate in 1885 shortly before being shipped out to Paris.

50. Definitive reception of the entire line was first broached in Blondelet to GS, May 19, 1885, SARS, DCF; and it was apparently welcomed in Director Interior to GS, June 1, 1885, Ibid.; see also the Chaper report, August 6, 1895, pp. 294-304.
51. See Chaper report, pp. 309-317; Director Interior to GS, June 9, 1885, ARS, 035; copy DSL response to Chapron offer, June 12, 1885, and copy Chapron offer, FOM, TP; copy Félix Faure to DSL, June 27, 1885, Ibid.; copy GS to MMC, June 27, 1885, Ibid.; excerpt P.V., Private Council, June 13, 1885, FOM, Senegal XII, 57.
52. Report annexed to seance of October 1, 1884, Reg. 31, pp. 20-21, 25-27; from note to S/Sec, September 16, 1884, Legros Resumé, pp. 156ff.; the Chaper report, pp. 280-281 notes a critical dispatch, S/Sec to GS, September 19, 1884.
53. Kimon Doukas, The French Railroads and the State (New York, 1945), p. 45n., remarked that the construction costs of rail lines in the metropole averaged around 200,000 to 250,000 Fr/km. A. Picard, Les chemins de fer, Vol. VI (Paris, 1885) indicates that these figures are typical, although citing (pp. 37-39) the case of a 170 km, 1 meter line to be built in France at 69,713 Fr/km. The price of 68,000 Fr/km for the DSL in distant Africa, even though it was a narrow-gauge, 1 meter line, was thus clearly a bargain price. On the other hand, company records indicate that the company did not pay out even the full amount of the government subsidy on the DSL. The accounts presented in the reports to Batignolles shareholders (registry entries in ANF, 89AQ11, for June 30, 1882, November 29, 1882, December 15, 1883, December 6, 1884 and December 12, 1885) show total Batignolles expenses for "études diverses", July 1882 through June 1885 as totaling 772,794 francs, and total Batignolles "dépenses a l'extérieur" for the same period of 11,772,542 francs. To this should be added the expense of outfitting the DSL in Senegal, which includes 110,000 francs of equipment sent in 1883, and the cost of required rolling stock, which I estimate from other purchases as 1,800,000 francs. This amounts to a

total of 15,345,336 francs of expenses on outside work at a time when the Batignolles was also involved in constructing the Tunis-Algeria railroad and the Pierrelatte Canal in France. Total Batignolles dividends and bonuses, Dec. 1883-Dec. 1885, amounted to 6,875,000 francs.

54. See Note of Director of Surveillance, July 1, 1896, FOM, Senegal XII,73; note Legros' strong defense of the company in the January 31, 1885 session of the Verification Commission, Reg. 31, pp. 38-46; -- Besides the Ministry of Marine was already entangled in other, disastrous and expensive colonial campaigns in Tonkin and Madagascar, and had finally been obliged to admit the failure of the Kayes-Niger railroad building program earlier in mid-1884.
55. A copy of these plans and cost estimates is contained in FOM, Senegal XII,42 bis (a). Details of the projected station emplacements in FOM, Senegal XII,42 bis (b).
56. Informed of the final plans in November, the colonial government arranged for an expropriation inquiry with an arrêté of November 22, 1882 (in Moniteur du Sénégal, November 28,1882, p. 222.)
57. Commandant Gorée to GS, May 9, 1862, with added footnote of 1865, in Charpy, Fondation, p. 328.
58. GS to MMC, April 8, 1879, FOM, Senegal XII,41; See also GS to MMC, political report, July 20, 1876, ARS, 2B73.
59. GS to MMC, January 25, 1883, FOM, Senegal XII,45; Mayor Rufisque to Director Interior, January 27, 1883, SARS, DCF; Blondelet to GS, February 12, 1883, ARS, 033.
60. Copy note for Direction des Colonies, by Legros, October 14, 1882, FOM, Senegal XII,45; copy note for Direction des Colonies, by Legros, October 7, 1882, FOM, TP.
61. The FOM dossier Senegal XII, 46 (a) is concerned with this question; see also GS to MMC, February 23, 1883, FOM, Senegal XII,43; GS to MMC, January 25, 1883, FOM Senegal XII,45; Notes to Direction des Colonies, February 14, 1883, and February 13, 1884, Legros Resumé, pp. 108, 147; see also P.V., local commission, June 11, 1883, FOM, Senegal XII,46; same, June 18,

- 1883, Ibid.
62. GS to MMC, March 23, 1883, ARS, 2B57; Note of July 21, 1883, Legros Resumé, pp. 135-136.
  63. Maurel & Prom to MMC, May 1, 1883, FOM, Senegal XII,46; Gasconi to S/Sec, March 1, 1884, Ibid.; same, March 13, 1884, Ibid.
  64. The history of the authorization is recounted in GS to MMC, September 9, 1883, FOM, Senegal XII,46; see also GS to MMC, June 9, 1883, Ibid.; Blondelet to GS, February 12, 1883, ARS, 033; Director Interior to Blondelet, April 5, 1883, SARS, DCF.
  65. GS to MMC, February 23, 1883, FOM, Senegal XII,43, calculated an outlay of 200,000 francs in Dakar and about 52,000 francs in St. Louis; the ministerial dispatch of April 5, 1883 (copy in Bull Admin du Sénégal, 1883, pp. 140-141) suspended expropriation in Dakar; see also GS to MMC, April 24, 1883, ARS, 2B57; same, May 24, 1883, FOM Senegal XII,43.
  66. Ministerial dispatch, May 4, 1883, Bull Admin du Sénégal, 1883, no. 258; same, May 5, 1883, Ibid., no. 260; same, May 19, 1883, Ibid., no. 270; excerpt P.V., Administrative Council, Senegal, June 30, 1883, FOM, Senegal XII,46; draft S/Sec to GS, October 18, 1883, Ibid.; GS to MMC, October 24, 1883, Ibid.
  67. GS to MMC, September 9, 1883, FOM, Senegal XII,46; same September 24, 1883, Ibid.; note to S/Sec, November 2, 1883, by Legros, Ibid.; GS to MMC, January 8, 1884, ARS, 2B58; same, March 23, 1884, Ibid.; Delegate Interior (Dakar) to Director Interior, November 14, 1883, SARS, DCF. Bourdiaux, an important figure in the Ministry of Marine, was in Senegal temporarily as acting governor in order to rectify administrative and political problems.
  68. An arrêté by Bourdiaux, October 22, 1883 (Bull Admin du Sénégal, 1883, no. 739) designated terrains for expropriation for the rail line in Dakar; the arrêté of March 5, 1884 (Ibid., 1884, no. 224) fixed the compensation; the terrains for the passenger terminal were chosen in an arrêté of May 6, 1884 (Ibid., no. 441); an arrêté of July 7, 1884 fixed compensation for those terrains (Ibid., no. 407); the letter Blondelet to GS, May 19, 1885, SARS, DCF, indicated that the terrains



for the Dakar passenger terminal were turned over March 24, 1885 to the DSL; see Director Interior to proprietors, Dakar, January 20, 1886, SARS, DCF; Chief of Operations, DSL to Director, Public Works, August 4, 1887, Ibid.

69. Sor became an island during the annual inundation of the Senegal river, but with relatively easy access to continental ground.
70. Plans had called for the tracks leading directly up to the vicinity of the Faidherbe bridge, but the company had rejected that solution. (DSL to MMC, September 4, 1882, FOM, Senegal XII,43); note for Direction des Colonies by Legros, September 5, 1882, FOM, Senegal XII, 46; same October 14, 1883, FOM, Senegal XII,45.
71. P.V. inquiry, December 6, 1882, FOM, Senegal XII,46 (b); GS to MMC, January 23, 1883, FOM, Senegal XII,45; report by Dupre, January 27, 1883, SARS, DCF; estimates by Couteau, February 10, 1883, Ibid.; Blondelet to Director Interior, February 26, 1883, Ibid.
72. Director Public Works Service, Dupré to Director Interior, March 5, 1883, SARS, DCF; draft MMC to GS; April 16, 1883, FOM, Senegal XII,46; note for Direction des Colonies, April 5, 1883, Ibid.; GS to MMC, May 24, 1883, FOM, Senegal XII, 43; there was an altercation over the occupation of unexpropriated land by the Batignolles in March 1882--see Director Interior to Blondelet, April 5, 1883, SARS, DCF.
73. Director Public Works to Director Interior, March 5, 1883, SARS, DCF; Director Interior to Blondelet, April 5, 1883, SARS, DCF; Director Interior to GS, April 30, 1883, Ibid.; J. Hubler to Director Interior, December 19, 1883, SARS, DCF; G. d'Erneville to Director Interior, December 19, 1883, Ibid.; see also DSL (Bois and Vieuxtemps) to GS, June 7, 1883, SARS, DCF, complaining of the non-delivery of some terrains at St. Louis.
74. The other road ran across the marigot of Khor. See Director Interior to Chief Public Works Service, December 9, 1882, SARS, DCF; GS to MMC, December 23, 1883, FOM, Senegal XII,43; GS to Director Interior, January 25, 1883, SARS, DCF.
75. GS to MMC, December 23, 1883, FOM, Senegal XII,43; GS to MMC, political report, December 26, 1883, SARS, DCF; S/Sec to GS, June 4, 1883, SARS, DCF.

76. Razy's copy of the conference of December 5, 1883, in the Cabinet of acting governor Bourdiaux, FOM, TP; GS to MMC, December 23, 1883, FOM, Senegal XII,43; GS to MMC, January 8, 1884, FOM, Senegal XII,45; draft S/Sec to GS, February 4, 1884, FOM, Senegal XII,43; GS to MMC, February 8, 1884, ARS, 2B58.
77. Response administrative note, Director Public Works to Director Interior, September 1, 1884, SARS, DCF.; S/Sec to GS, January 29, 1885, Ibid.; same, August 29, 1885, Ibid., with report of July 3, 1885 by Chapron; see also Note to S/Sec, September 16, 1884, Legros Resumé, p. 156.
78. See report no. 564 bis by the Surveillance Engineer, Sallenave, August 24, 1886, FCM, Senegal XII,50, in which this capable official complained; "Often the Chief of Operations of Dakar (DSL) asks us to approve certain projects, basing [his request] on authorizations already given by the ministry to the central administration of the company at Paris. The Service of Surveillance at Dakar knows neither the spirit nor the letter of these authorizations, so it may be indecisive in responses which it makes to the company's demands, and even in contradiction with the orders given by the ministry. We ask, therefore, [to be given] the orders or observations that [the ministry] addresses the company . . . The task of the Surveillance Service will be better defined, if this service will be able to stay in touch with the ideas of the ministry on the subject of the affairs of the Dakar-St. Louis Company." See also the note to S/Sec by the Inspector General of Naval Works, October 26, 1886, FOM, Senegal XII,50.
79. Blondelet to GS, April 10, 1884, ARS, 033; GS to MMC, political report, December 8, 1884, ARS, 2B75, expressed pleasure at the good relations between railroad workers and the inhabitants of Cayor; see also: same, August 8, 1884, Ibid.; same, March 11, 1885, Ibid.
80. The letter by Blondelet to GS, June 26, 1884, SARS, DCF, informed the governor of the evacuation of European workers, and added: "I am confident . . . that you will seek out and punish without delay the culprits, for a too great forbearance on your part will only encourage the blacks to multiply their aggressions." See also: GS to MMC, political report, ARS, 2B74; GS to MMC, July 8, 1884, SARS, DCF.

81. Acting High Commander to GS, July 19, 1884, SARS, DCF; instructions on security measures to Capitaine, July-August 1884, ARS, 033.--The DSL used the situation to get the colony to open the Pout-Tivaouane line for service. See, e.g., Bois to Chef de bataillon Troismaison, June 27, 1884, Ibid.
82. Delegate Interior (Dakar) to Surveillance Engineer, June 17, 1884, SARS, DCF; GS to MMC, August 9, 1884, ARS, 2B58.
83. Copy note by DSL (Paris) to S/Sec, attached to letter of October 25, 1884, SARS, DCF, which went on: "It is necessary that black police agents not be permitted to arrest without warrant one of our foremen in the performance of his duties, on the simple complaint made to them by a Negro as happened in Dakar on June 21, without the police agents being reprimanded."--See also copy DSL to S/Sec, October 25, 1884, Ibid.; Director Interior, Senegal to Surveillance Engineer, October 27, 1884, SARS, DCF.
84. Despite the conflicting testimony on the incidents, the conclusions of investigating French officials, who were not generally favorable towards the inhabitants of this area, suggests that the African version of events was closer to the truth.
85. Terry Coleman, The Railway Navvies, (Harmondsworth, 1969), pp. 93-114.
86. GS to MMC, June 7, 1881, ARS, 2B55. See also, Director Interior to Director of Public Works, March 20, 1883, ARS, 3G2/9.
87. A brief reference to the working party in 1883-84, at the St. Louis side of the line, in "Notes géographiques," Bull. SGCB, 1883, 15, August 6, 1883, p. 464, broke down the laboring work force into 50 French, 50 Spanish, 150 Italians, and 300 Africans.
88. See arrêté of January 14, 1884, in Moniteur du Sénégal, January 15, 1884, p. 13; Mayor St. Louis to police superintendent, January 20, 1884, SARS, DCF; Mayor St. Louis to Director Interior, April 5, 1884, Ibid.; GS to MMC, April 7, 1884, ARS, 2B58. Mayor Rufisque to Director Interior, February 14, 1883, SARS, DCF.
89. Delegate Interior (Dakar) to Director Interior, January 18, 1885, ARS, 035.

90. The incident at Kelle was covered in a report by Chauvet, commanding spahis at N'Dande, September 17, 1886, ARS, 033; and Chauvet to ? (Minet of Political Affairs), September 17, 1886, Ibid. See also: Stationmaster Tivaouane to Operations (DSL), Dakar, December 1884, Ibid.; Commandant in Cayor to GS, October 4, 1886, Ibid.; GS to Chief of Operations (DSL), May 21, 1886, SARS, DCF; GS to Commandant at N'Dande, May 21, 1886, Ibid.; in a letter by Minet (Political Affairs) to Commandant M'Pal, September 3, 1886, Ibid., the latter was enjoined to treat railroad agents as fellow Frenchmen in a foreign setting.
91. GS to Chief of Operations (DSL), May 21, 1886, SARS, DCF; GS to Commandant at N'Dande, May 21, 1886, Ibid.
92. On the railroad attack, see: GS to MMC, political report ARS, 2B75; report by Commandant cercle Diander, October 12, 1885, to Director Interior, SARS, DCF. On peanut sales in Cayor, see: GS to Director Interior, February 25, 1886, SARS, DCF; GS to MMC, political report, March 12, 1886, ARS, 2B75. On the station perimeter extension, see: Report by the Director of Political Affairs of Senegal, December 30, 1884, FOM, Senegal XII, 45; GS to MMC, January 22, 1885, Ibid.; GS to MMC, political report, January 8, 1885, ARS, 2B75; P.V., Administrative Council, January 20, 1885, ARS, 033; copy S/Sec to Chief Central Service (DSL), March 10, 1885, ARS, 035. On the demands on N'Diambour; GS to MMC, November 7, 1884, FOM, Senegal I, 72; GS to MMC, political report, June 15, 1885, ARS, 2B75.
93. See Ganier, "Lat Dyor," pp. 248ff. on the events of 1886; GS to MMC, political report, July 12, 1886, ARS, 2B75; same, October 14, 1886, Ibid.
94. The French indicated knowledge of Samba Laobé's plans in the political report GS to MMC, May 12, 1886, ARS, 2B75. It was only later that they claimed that there had been no way to stop him from invading Djolof by way of N'Diambour. Genouille was, by the way, very pleased that Aliboury had not realized that his treaty with the French colony (April 1885) had never been ratified by the French ~~and was~~ (therefore technically invalid. See also GS to MMC, political report, June 12, 1886, Ibid.; same, July 12, 1886, Ibid.
95. See the unsigned letter of August 12, 1886, ARS, 2B75, pp. 127, 128.

96. Copy of letter of agent Maurel & Prom to Director Interior, July 23, 1886, SARS, DCF; Stationmaster Tivaouane to Director Political Affairs, January 6, 1886, ARS, 033; on the other hand there were bitter complaints against Samba Laobé in President, Chamber of Commerce of Rufisque to Director of Interior, August 3, 1886, ARS, 035.
97. GS to MMC, political report, August 12, 1886, ARS, 2B75; same, August 13, 1886, ARS, 2B64.
98. In the political report GS to MMC, October 14, 1886, ARS, 2B75, p. 135, the governor commented with barely concealed satisfaction, "This terrible example will bear fruit and the [railroad] company agents will henceforth be able to circulate freely."--see also district chief, DSL to Commandant fort of Louga, September 11, 1886, ARS, 035; Commandant Louga, Marchand to Director Political Affairs, September 12, 1886, Ibid.
99. See Ganier, "Lat Dyor," pp. 250-251; on freeing slaves, see footnote 90 above, especially Minet to Commandant M'Pal, September 3, 1886, SARS, DCF; See Minet (Political Affairs) to Commandant Thiès, September 3, 1886, no. 479, Ibid.; GS to MMC, political report, September 15, 1886, ARS, 2B75.
100. Acting GS to Commandant Spahis, N'Dande, September 8, 1886, SARS, DCF; three letters and a report by the officer commanding the spahis of N'Dande, Chauvet, dating September 12 to 19, are found in ARS, 033.
101. Genuille's one-side and inadequate version are given in the political report of October 14, 1886 (ARS, 2B75), and in GS to MMC, October 12, 1886, FOM, Senegal I,76; besides Ganier's article, see also "Historique de la Mission Catholique de Thiès," (extracts of the mission journal, 1G-192, typewritten copy in ARS), entry for October 6, 1886 quotes a letter of 2nd Lt. Chauvet to 1st Lt. Spitzer on the death of the damel at Tivaouane; the version in the anti-administration newspaper, Le Reveil du Sénégal, October 10, 1886, pp. 1, 2 ("Execution de Samba Lawbe") is not enlightening.
102. Extract GS to Admiral of Naval Division, October 8, 1886, FOM, Senegal IV,99, on the aremed trains: "I do not attack, but I wish to demonstrate to the country that I am so prepared, that it is best to be on good terms with me." (*Italics in text*); see also, Admiral

- Ribell, Commandant of South Atlantic Naval Division to MMC, October 10, 1886, FOM, Senegal IV,99.
103. See Klein, Islam and Imperialism, pp. 165-167; note by acting Director Interior, August 28, 1886, ARS, 13G41; GS to MMC, May 14, 1886, ARS, 2B64; same, April 28, 1886, Ibid.; same, August 13, 1886, Ibid.
104. GS to MMC, November 13, 1886, FOM, Senegal I,76; a copy of the governor's proclamation of October 21, 1886 is in SARS, DCF.
105. Ganier, "Lat Dyor," p. 255; GS to High Commandant, St. Louis, October 25, 1886, SARS, DCF; circular Minet to Commandants cercles, November 3, 1886, Ibid.; Minet to Political Affairs, Louga, November 6, 1886, Ibid.; GS to Commandant N'Dande, November 15, 1886, Ibid.; GS to MMC, political report, November 14, 1886, ARS, 2B75; same, labeled November 15 to December 15, 1886, Ibid.
106. P.V., Verification Commission, November 5, 1886, FOM, Senegal XII, 69 (also in Reg. 31); same, November 12, 1886, Ibid.; same, October 7, 1886, Ibid.; bill no. 1037, session 1886, FOM, Senegal XII,69.
107. Report by Paul Etienne, March 31, 1887, FOM, Senegal XII,69.
108. The ministry had been well aware of the stone available at these quarries. See Senate bill no. 225, annex to seance of December 28, 1880, p. 3, alluding to the commercial possibilities of the stone. Copy in FOM, Senegal XII,69.
109. See JORF-Débats Parl.-Chambre, November 20, 1888, pp. 2592-2596; JORF-Débats Parl.-Chambre, November 28, 1890, pp. 2310-2596; the report, or at least parts of it, did excite some critical comments against the DSL during a session of the Verification Commission, see P.V. of June 24, 1887, in Register no. 32, FOM, TP, pp. 183-184.
110. Chaper was a member of the Permanent Committee of Colonial Public Works. See JORF-Débats Parl.-Chambre, March 1, 1895, pp. 635-639. By 1894 the total outlay advanced by the state for the railroad, including construction, operating deficits, and guarantees, was almost 31,000,000 francs (Chaper report, p. 366); the

DSL had been forewarned about the Turrel speech (DSL to Haussman, Ministry of Colonies, January 4, 1895, FOM, TP).

111. A 384 page draft of the report of the Chaper mission, dated August 6, 1895 and signed by all three on the commission is in FOM, TP.
112. Ibid., pp. 26, 88, 153-169, 176-190, 193, 205, 206, 209, 276, 304-308, and especially pp. 374-383. Cheap shots were thrown at Etienne throughout; e.g., pp. 193, 197, 198, 203, 211.
113. Ibid.; see especially pp. 25-27, 56, 202-203, 211, 335, 353-354, and summarized in pp. 367-372. On page 185, it was claimed that Friocourt's letter of April 28, 1884 could not be found, but the letter is in SARS, DCF.
114. Ibid., pp. 62, 66-90. The decks of spans more than 1 meter long, being of wood, however, could be set on fire by the sparks from a locomotive; See also DSL to Minister of Colonies, July 10, 1895, FOM, TP.
115. Note by Director of Surveillance, July 1, 1896, FOM, Senegal XII,73; see also note by Inspector General Bricka for the African Direction of the Ministry of Colonies, July 9, 1896, Ibid.
116. Note for Minister of Colonies, June 13, 1895, by the Director of Political and Commercial Affairs, FOM, TP. DSL report to stockholders, June 27, 1899, FOM, TP. A decision of the Conseil d'Etat of June 21, 1907 held the DSL liable for repairs on the bridge at Hann. A decision of the Conseil d'Etat of November 3, 1916 also settled the Leybar bridge question by rejecting the DSL's application for reimbursement of the costs of repairs.

## CHAPTER III

### THE DSL'S IMPACT, 1885 to 1911

je vous assure que, pour un vieux Sénégalais comme moi ... ce n'est point petite joie que de cheminer à la remorque d'une locomotive qui siffle allègrement et déroule son panache de fumée à travers ce Cayor naguère fermée.

--anonymous, 1884<sup>1</sup>

It is not surprising that the railroad's promoters, so unreliable in their estimates of construction costs for a Dakar-St. Louis railroad, should also prove equally inaccurate in their rosy predictions of traffic and receipts for this rail line.<sup>2</sup> Both Walter and Vaubourg had based the financial viability of a projected DSL on rail service between the ports of Dakar and St. Louis (and Rufisque to a lesser extent) without that much regard for traffic in between. It is true that the rail express running daily in both directions between Dakar and St. Louis quickly replaced the slower, more expensive maritime passenger service between the two ports; but there was little profit in this element of traffic alone.<sup>3</sup> Freight traffic between the ports could have been more lucrative. However, unlike the promoters' predictions, freight was generally not transhipped by rail from St. Louis to Dakar or vice versa, despite St. Louis'



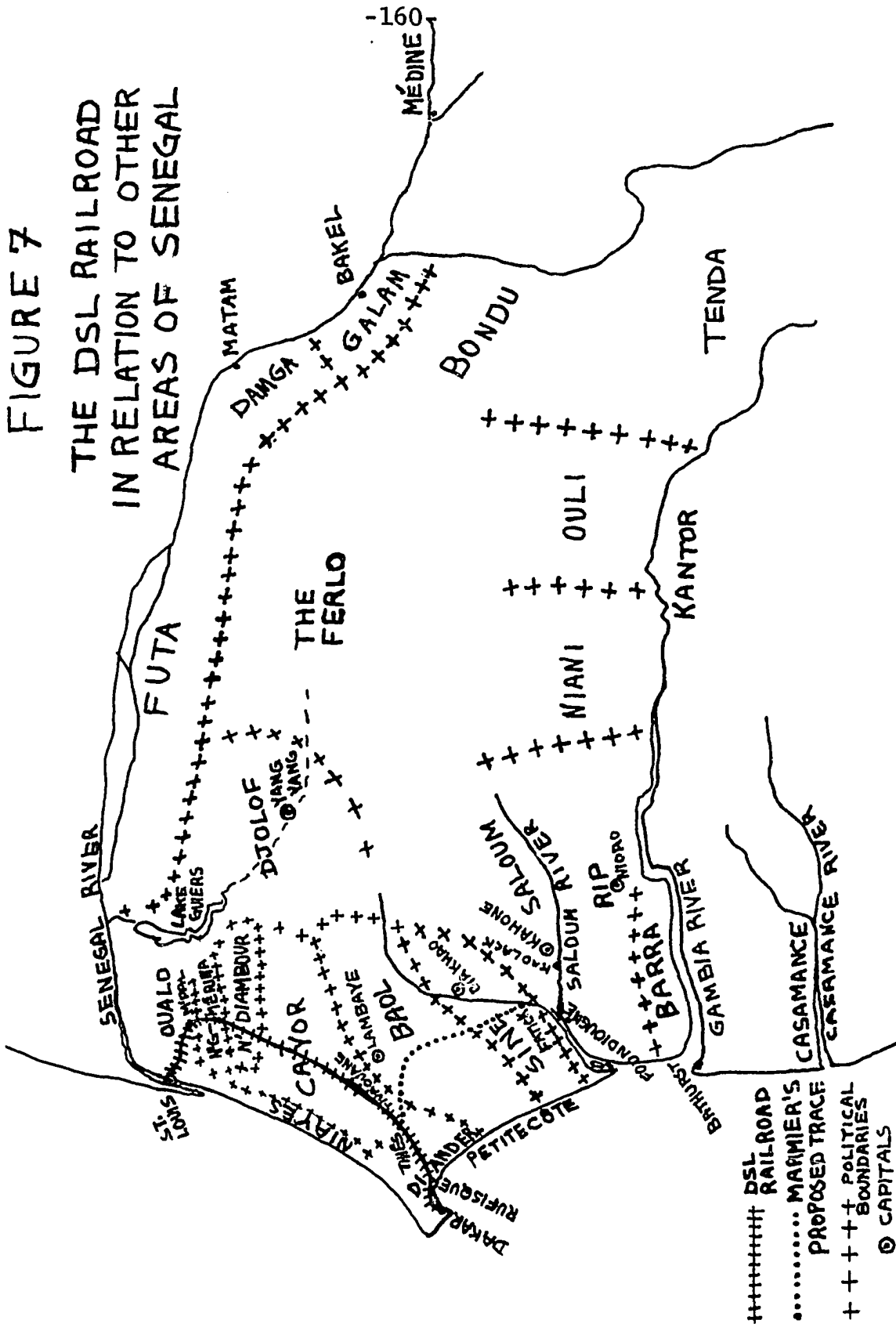
difficult access to the sea. The cost differential between freight sent directly by sea between France and St. Louis and that detouring by the railroad and the port of Dakar was at first simply too great. Even the government of Senegal, for example, preferred importing coal from France into St. Louis by sea at a cost of 35 francs a metric ton, rather than via sea and railroad at a total cost of 54 francs a ton.<sup>4</sup> Even if the sand bar at the mouth of the Senegal river blocked larger ships from entering the port, it was still often cheaper to load the cargo onto schooners at Dakar for transshipment to St. Louis by sea, rather than taking the railroad.<sup>5</sup>

Nor was it easy for the DSL to capture this traffic by creating special, low freight rates between the two ports. The railroad terminal facilities at both ends of the line were plainly inadequate for substantial traffic, especially at St. Louis where the freight terminal was too distant from the port and where the poorly-constructed riverfront terminal was reached only with difficulty.<sup>6</sup> When special low rates were indeed essayed from 1897, they had little initial success. Even as late as 1909, after creation of an improved port at Dakar and substantial improvement of rail facilities at both ends of the line, only 12,000 tons of freight was sent from Dakar to St. Louis by rail as compared to 33,000 tons imported

to St. Louis by sea; and only 2000 tons were sent out by rail from St. Louis in the other direction.<sup>7</sup> In the interlude, the DSL had found it convenient to transfer its scant freight business at Dakar to the small passenger terminal near the port, while converting the freight terminal into a dormitory for its personnel.<sup>8</sup>

Political impact Vaubourg and Walter had undoubtedly been so careless in their economic and financial estimates of the railroad's prospects because of a more abiding concern for its strategic potential; and in this respect they were certainly justified by subsequent events. Not only had the French been able to master Cayor quickly during the crises of October 1886, but local resistance faded rapidly in the aftermath. French dominance in that country was never seriously challenged again by an military action or insurrection, and the DSL railroad also served subsequently as a useful springboard to subjugate the neighboring kingdoms of Djolof and Baol, as well as to assure a rapid passage of troops and military supplies by rail to the Senegal river (and thence to the Upper Senegal) from bases and entry points at Dakar (see Figure 7).

Nevertheless, even though the railroad had been effective in assuring a rapid, almost painless conquest of regions adjoining the littoral between St. Louis and Dakar, it certainly had not been absolutely necessary for this



purpose. French expansion toward the upper and middle Niger was proceeding at the same time with only minor assistance from a jerry-built, uncompleted Kayes-Niger railroad. To be sure, both this railroad and the DSL provided some useful logistical services. However, much of the credit for the rapid, wide-ranging movement of French military forces should go instead to the humble, but versatile "Lefebvre" supply carriages, which made possible reliable supply transport over long cross-county distances.<sup>9</sup> Within Senegal itself, the events in Cayor had been paralleled by deep French advances farther inland into areas--Niani, Ouli, and parts of Saloum--far from any railroad lines. The occasion for expansion in this direction had been the suppression of a formidable Sarakole jihad on the Upper Senegal from March 1886.<sup>10</sup> The pursuit westward in 1887-1888 of its defeated leader, Mahmadou Lamine, linking up to a French advance in Rip, extended the colony's frontiers well southward--without benefit of direct rail support--into areas hitherto part of the economic sphere of the British Gambia and sealed the fate of Djolof and Baol, both now encircled and destined for absorption after 1890.<sup>11</sup>

The French conquest of these areas, unlike Cayor, owed little to the railroad directly. Nevertheless, as Villard so perceptively noted, the creation of the DSL was playing

a major role on a more general political plane by assuring the unity of the colony of Senegal.<sup>12</sup> St. Louis and Gorée-Dakar had each been serving as the staging areas for two radically different directions of French expansion into West Africa--a continental axis penetrating from St. Louis into the Sudan along the Senegal river and a coastal expansion down the African coast from Gorée as far as Gabon. The administrative severance from Senegal in 1882 of the outreaches of each of these tendencies--an autonomous Upper Senegal military command in the Sudan and a coastal "Rivières du Sud" where the future French Guinea would be formed--was an important step in assuring the continued unity of the two base colonies of St. Louis and Gorée-Dakar.<sup>13</sup> This unity was strongly affirmed by the DSL, which now assured an easy political communication between the two ports while also opening the intervening hinterland to direct, mutual economic exploitation. Despite some later variations in the colony's frontiers, Villard's Senegal--the populated ring enclosing the barren central Ferlo desert--was now firmly stitched together by the iron band of the railroad between its two principal links.

Closely associated to the DSL's political impact was its expanding economic role as a major carrier of peanuts from the interior for Senegal's export trade. Both Vaubourg and Walter had waxed enthusiastic about the trade supposedly

to be generated by the railroad in the interior. But the vagueness of their estimates casts doubt on their seriousness in this respect. Indeed contemporary government officials were skeptical about the commercial value of the railroad until the volume of peanut traffic that rapidly developed on a newly-opened DSL line pleasantly surprised them.<sup>14</sup>

Export volume and economic geography The contemporary drop in market prices for Senegal's trade unfortunately obscures the precise impact which the DSL railroad might have had on peanut exports from its completion in 1885. One set of figures shows peanut exports dropping from a peak of 53,498 tons in 1880 down to a low of 18,714 tons by 1887.<sup>15</sup> During this period the once thriving peanut trade of the Damga and Galam on the upper Senegal river vanished, and it remained moribund around Matam as late as 1904 despite a subsequent recovery in commodity prices.<sup>16</sup> It may be inferred, on the other hand, from the continuing trade activity along the DSL that the railroad had indeed arrived in time to save a good deal of the shrinking volume of trade by reducing transportation costs in the area near the railroad corridor.

Almost from its inception, the railroad captured a major share of Senegal's peanut export traffic, and as the trade began to expand again from 1892 the railroad con-

sistently carried about 70% of Senegal's peanut exports (see Table 1). With even greater peanut exports in response to higher commodity prices after 1898, the DSL prospered with greatly swollen freight loads; but its share of total peanut exports dropped closer to 50% of total exports, indicating an extension of peanut cultivation into areas remote from the railroad (notably the Saloum).<sup>17</sup>

The interplay of external market price and local transport costs was molding the geographic contours of the export trade in Senegal, and it may be assumed that without a railroad and with lower prices, peanut cultivation for export would have hugged areas bordering the coast and rivers for easier exportation. But two of the more accessible areas--the lower and middle Senegal river basin and the "niayes" coastal region between St. Louis and Dakar--were unsuitable for peanut cultivation.<sup>18</sup> Other more productive regions, such as coastal and fluvial areas of Diander, the Sine-Saloum, and the Casamance, of course, might have expanded their production somewhat in the absence of a railroad.<sup>19</sup> Improvements in river navigation might have saved some of the shrinking peanut trade on the Upper Senegal. But one ought to rule out any significant compensating spread of the perimeter of marginally profitable land in response to higher prices--as that suggested

by Fogel for American farmland near river valleys--because falling peanut production in Senegal apparently made little impact on prices in a European commodity market fed by other areas competing with Senegal.<sup>20</sup>

The railroad had certainly expanded the zone of profitably cultivable land by creating a new inland corridor, along which agricultural products could flow cheaply and rapidly to the colony's ports while imported trade goods travelled in the opposite direction. This was most obvious in terms of the land immediately bordering the rail tracks. The zone was also expanded, less obviously, because of an effective increased capacity of domestic means of overland freight transportation.

Even before the DSL railroad's inception, the export trade in this region had been well served by freight-hauling pack animals rented by local entrepreneurs during the trade season. As the peanut trade had grown from mid-century, Mauretanian owners of camels and donkeys had been lured seasonally from the vicinity of the Senegal river southward to hire out their animals for hauling peanuts from the interior to the ports. Other Africans, particularly those of Gandiole, had also joined in renting their pack animals in this profitable carrying trade.<sup>21</sup> These herds of animal porters had spared Senegal from transport by human portage--that curse of much of tropical Africa--



but hauling rates for animal porters were generally high, and the routes followed from many inland centers could be very long.<sup>22</sup> Caravans from Baol and southern Cayor, for example, would avoid the direct route to Rufisque via the dangerous "ravin des voleurs" between Thiès and Pout, with a wide detour from Thiès to the fort of M'bidjem on the coastal telegraph road, and thence to Rufisque via the Tamna bridge. Often enough it was just as easy for transporters to bring their peanuts all the way to distant St. Louis.<sup>23</sup>

The DSL railroad did not eliminate pack animal transportation in the interior, but altered its employment. By bringing a number of new export outlet points closer to producers in the form of the rail stations, the DSL reduced the distance necessary for hauling by animal porter, diminishing thereby the overall costs of pack freight and increasing the total seasonal volume that the pack animal herds could haul.<sup>24</sup> Overall pack freight rates were probably reduced as well simply because this service also became thereby less critical; and the reduction in overall hauling costs obviously extended the perimeter of marginally profitable areas for cultivation and sustained a higher level of export volume.

It can hardly be said, however, that the railroad was optimally situated to stimulate maximum peanut production.

Two stations, Thiès and Tivaouane, alone consistently provided about half the peanuts shipped on the railroad (see Table 1). Some of these peanuts came from southern Cayor. A good many came, however, from nearby Baol, an important center of production before construction of the railroad. But the railroad was placed too eccentrically with respect to Baol to serve that region well, with much of Baol's consequently-diminished production escaping the railroad entirely via the small ports of Nianing, Joal, and even Fatick.<sup>25</sup>

As early as 1885, Alexis Bois was advocating, on behalf of the DSL, construction of a new branch line from Thiès into Baol and Sine--as a first section for a future rail line penetrating into the Sudan.<sup>26</sup> Indeed, when the engineer P. Etienne made his inspection of the DSL line in 1886, he spent much of his time accompanying a DSL official on a reconnaissance of a possible trace for a rail spur through Baol to Fatick.<sup>27</sup> By 1892, the colonial government, now also keen to see a rail line built in this direction, dispatched a military engineering officer to explore a trace in the area. Although nothing came of this officer's project at that time, his detailed report pinpoints areas of Baol and Sine already being exploited (such as the Diarring-Gate region).<sup>28</sup> Full exploitation of Baol and the Sine-Saloum's productive potential, however,

had to await higher market prices and construction of the Thiès-Kayes railroad in the 20th century.

Ports and rail The upgrading of Dakar into the major seaport for the interior's export trade had, of course, been one of the primary goals of the promoters of a Dakar-St. Louis railroad. These expectations, unfulfilled in the case of traffic from St. Louis, did not materialize to any great extent for peanut exports either. It was the port of Rufisque instead that harvested the major share of this traffic, rather than Dakar. Merchants and traders from Rufisque were establishing posts at rail stations even as the line was being built, and Rufisque quickly captured the peanut trade up to N'Dande.<sup>29</sup> Poorly endowed with an inadequate wharfage and an occasionally turbulent anchorage that forced tedious offshore loading of ships from small boats, Rufisque nonetheless possessed the adequate space for commercial activities that Dakar lacked.<sup>30</sup> While Dakar received only a few hundred tons of peanuts by rail annually until 1906, Rufisque consistently drew 80 to 90% of the railroad's peanut freight after 1888 (see Tables 2 and 3). Dakar had to await construction of a special commercial port, undertaken from 1904, before it could capitalize on its excellent harbor. In the meantime, Dakar served as a major coaling station for maritime shipping, as well as an administrative center both for government services

and the DSL railroad company.<sup>31</sup>

St. Louis at first drew the peanut freight of the northern stations of the railroad line, occasionally even from as far away as N'Dande. Nevertheless, after 1890 St. Louis generally attracted no more than 10 to 15% of the peanuts shipped by rail. This came about partly because the more northerly stations feeding St. Louis lay near areas apparently less productive than those closer to Rufisque.<sup>32</sup> But the marked tendency after 1894 for peanuts from northerly stations, such as Kebemer and even Gumbo Gueoul, to exit via Rufisque (Table 3) also indicates that St. Louis' inadequate rail terminals and relatively difficult access to the sea were playing a role in this respect. The higher costs of shipment through St. Louis would, of course, also shrink the zone of marginally profitable land whose produce could exit from the northern rail stations via St. Louis.

Structures of trade Senegal's external commerce was centered principally on the export of gum and peanuts. Gum procured along the Senegal river, mainly by barter with Mauretians for imported European "trade" goods, was the more ancient commerce of the two and the major basis for the commercial prosperity of St. Louis. Earlier, the trade had officially been confined by the government to designated riverain trading posts called "escales." But enter-

prising small traders had succeeded so well in evading government restrictions from 1853 that a liberalized statute in 1880 finally permitted trading at any point along the river.<sup>33</sup> The river trade was, nevertheless, never wholly free. It was restricted by law to French citizens-- a profitable monopoly so jealously guarded by St. Louis' merchants that they strongly resented even the few Moroccans and African British subjects who tried to trade on the river.<sup>34</sup> This marked conservatism of St. Louisian merchants, more concerned with preserving an acquired position on the river than in entering new fields on the Upper Niger, indeed exasperated French colonial officials and military officers, who were complaining before the conquest that Sierra Leone's African traders were outpacing the complacent Senegalese merchants even on the Upper Senegal.<sup>35</sup>

From the 1850's a growing demand for oils in Europe encouraged increased cultivation of peanuts by individual peasants in the Senegambia. St. Louis profited from the cultivation of the product in its suburbs, from caravans bearing peanuts from Cayor and Baol, and from a short-lived peanut trade with the Upper Senegal. However, it was the coast of Diander and Baol that became major sources of peanut exports. Nearby Gorée, largely somnolent after the end of the slave trade, revived to some extent because of this trade; but the trade also showed some tendency to

shift to less-cramped coastal ports instead--to Nianing, Joal, Dakar, and above all Rufisque. The advent of the DSL decisively confirmed this shift by dramatically transferring the greater part of Gorée's commercial activity in peanuts to mainland Rufisque.<sup>36</sup>

The larger expatriate merchants, mainly of Bordeaux, owed their commanding position in Senegalese commerce to their shared virtual monopoly in maritime freight transport, which enabled them, if they curbed mutual competition, to manipulate the local price relation between imported goods and produce bought for export. Obviously if they acted together, they could give the peasants less for their produce in terms of the trade goods imported from Europe. On the other hand, they could also freeze out of the trade any interloping small merchants by contrarily paying the peasant high prices in terms of imported goods bartered for his produce. A small interloper obliged to pay shipping rates set by his larger competitors could be whipsawed, especially in a barter system, between the maritime freight costs extracted by the shippers and the direct competition from the shippers themselves, who could better afford to pay the peasant with more imported goods for a given amount of produce.<sup>37</sup>

Hardly less important to the position of European merchants was the development of networks of credit in

Senegal that allowed a wide geographical distribution of trade through intermediate African and creole traders, while sparing the Europeans, based at coastal ports--St. Louis, Gorée, and later Rufisque and Dakar--from the trouble of venturing inland for commerce. The merchants would lend goods to a trader, who might in turn lend them to a host of lesser traders. The cultivator to whom the goods were ultimately sold might also borrow the goods on credit from a trader in anticipation of delivering his harvested produce later.<sup>38</sup>

Newbury has uncovered a very valuable clue to the nature of this credit system in a contemporary account describing the huge debts that European firms would allow their traders to incur.<sup>39</sup> A trader might return from the interior with produce worth only a fraction of the value of the trade goods previously lent to him. Nevertheless, since these goods had been pegged at artificially inflated prices to begin with, the lending firm would in fact garner a tidy profit, even while the trader remained in its debt.

The wise European merchant, it must be surmised, would also be shrewd enough to play on occasion the part of magnanimous patron--in tune with local African notions of generosity--by "forgiving" the debts of his trader, and thereby earning the trader's gratitude and loyalty cheaply. This credit system would also be a factor in excluding un-

informed European interlopers, who in failing to adapt to local social conventions by granting generous credit terms would find it difficult to buy produce or market goods.

Despite their mutual dependence, relations between the larger European merchants and the African traders were nonetheless inherently unstable. European firms used their monopoly in shipping at times to set low purchase prices in common for export crops, thereby squeezing trader profits. The trader might cheat his patron in many ways, in some cases simply absconding into the bush with his trade goods.<sup>40</sup> European merchants in turn would often compete with their own traders by sending regular firm employees to trade directly with producers in the interior. The rivalry between merchant and trader was probably a major reason for the efforts in the 1880's to limit trade on the Senegal river once again to fixed escales, where established commercial houses had decisive advantages over the independent small trader.<sup>41</sup> It was certainly a major factor in the formation of a political party in the 1880's around J. J. Crespin and the Devès family, who claimed to stand for the economic interests of the petty traders against the dominance of the Bordeaux houses.<sup>42</sup>

In the eyes of the merchants, the independent petty traders might be viewed after all as troublesome, superfluous intermediaries, whose interference only diminished



profits.<sup>43</sup> Yet even the most annoying of these traders-- the "maîtres des langues," who diverted road caravans to particular patrons in trading centers--performed a useful function in the trade.<sup>44</sup> The African trader had a superior knowledge of the market and client preferences. He could count on old political, economic, and perhaps family connections in the interior. Most importantly, he would operate easily and willingly in the interior, which most Europeans would care to visit only occasionally, if at all.<sup>45</sup>

Contemporary documents seem to detail few outward changes in the structure of trade in Senegal with the coming of the railroad. There was indeed some initial confusion about its future role in the trade. One prominent merchant of St. Louis, for instance, was surprised and deeply distressed that traders and merchants were going to the expense of setting up branch operations in new centers forming near rail stations in the interior instead of letting African cultivators themselves haul the peanuts by rail to St. Louis for direct trading with European commercial houses right in the city.<sup>46</sup> In reality, by affording Europeans an unprecedented easy access into the interior, the railroad had tipped the economic "balance of power" decisively in favor of the European commercial houses. Even as rail stations were being opened on the DSL, the larger firms were rushing to open branch operations for

direct trade with cultivators in the interior in the new trade centers that were mushrooming next to the stations.<sup>47</sup>

The implications of this movement were obscured at the time by the continued prominence of the independent African trader in the trade. European firms often employed Africans in these branch operations, and African traders had their own operations in these new trading centers, which seemed to resemble the riverain escales so much that they were promptly dubbed "railroad escales."<sup>48</sup> Even while keeping a respectable share of the escale trade, the African trader still remained indispensable in nearby centers of production unserved by the railroad--Baol, Sine, and eastern Cayor. Moreover, contemporary resistance in Senegal to projects in the 1890's for a new DSL rail spur into Baol indicates indeed that many European merchants were satisfied with the existing trade arrangements.<sup>49</sup>

Trading conditions had, nevertheless, been fundamentally, if not overtly altered by the railroad. It now became much easier for European merchants to check their traders' activities frequently on the spot. It was easier and simpler for European merchants or European employees of expatriate firms to trade directly with African producers in the interior. Moreover, in contrast to a river or a highway, the DSL railroad was not equally accessible to all users at all times.<sup>50</sup> Access to it was confined to a

limited number of points, and it was controlled and regulated according to rules set by a foreign-based administration, which would be more responsive to the wishes of European merchants than to African traders or producers (e.g., by lowering freight rates for larger shipments of peanuts). Unlike even French-controlled maritime shipping, where the creole commercial house of the Devès, at least, could with its own ships compete on equal terms against the expatriate Bordeaux firms, Africans could never hope under ordinary circumstances to capture control of the railroad financially or to compete with it commercially.<sup>51</sup>

In time, a merchant exercising a more effective surveillance of his African traders, could reduce them to the status of firm employees, while a concerted effort of the European firms would allow elimination of the more uncooperative traders during period of commercial contraction. This apparently happened after about 1900, when the rise in the market price for peanuts probably made the employment of salaried agents, European and African, in the interior more remunerative and when the collapse of the market in gum drove a surplus of traders into the peanut trade.<sup>52</sup> Unfortunately, growing profits in the peanut trade did not necessarily shore up the position of the African trader in the face of this general threat, because even a temporary decline in market price could easily ruin those

who had extended credit too freely.<sup>53</sup>

The cardinal role of the railroad in the eclipse of the once-prosperous independent African trader was even more clearly illustrated from 1908 in nearby Baol, Sine, and points east as a new Thiès-Kayes railroad was being constructed, enabling the larger commercial firms to establish new branch operations at the new rail escales growing along this new line.<sup>54</sup> The independent African trader, though surviving as a significant factor in the trade until the 1930's, was able to do so largely by his ability to move out farther into areas remote from the rail lines and their escales.<sup>55</sup>

Population distribution The DSL's impact on population distribution, though difficult to assess, is one of the most intriguing aspects of change under colonial rule.<sup>56</sup> On the surface, the railroad's role in remolding the contours of Senegal's social and economic geography seems most impressive. The growth of the ports subsequent to the railroad's construction, for instance, was dramatic (see Table 4). Rufisque, especially, mushroomed during the period that the DSL was being built, probably drawing most of the population leaving Gorée between 1876 and 1885, though apparently Dakar drew some also.<sup>57</sup> The line of French military posts along the coastal telegraph could also be abandoned as a new telegraph line was built along the rail-

road, and the colony felt secure enough to close down the military posts at M'Pal and Pout.<sup>58</sup> Some villages near stations on the new line mushroomed almost immediately (see Table 5).

The line, it should be noted, was passing through a section of Cayor, which had already been well populated-- a map drawn by Walter for the rail project of 1878 showed some 15,000 people of Cayor living within a band of 1 km on each side of the projected trace.<sup>59</sup> Nevertheless, many important villages of Cayor--Niomré, Coki, Soguer, K. Mandoubé Khary, N'Diagne--were located well east of the DSL trace, along the old main caravan routes from Baol and Djolof toward St. Louis.<sup>60</sup>

The growth of Tivaouane, which quickly became the most active commercial center on the line, was one sign that the railroad was drawing people. Tivaouane, which had 650 inhabitants in 1878, according to the Walter map, boasted 1,178 people by 1885. By 1897, the perimeter of Tivaouane, which had been expanded to cover a square of 2 km on a side, enclosed some 3,135 inhabitants--almost double the 1,670 in the same 4 square kilometer space shown on the Walter map in 1878.<sup>61</sup> Thiès also grew abruptly from two small villages totalling 260 people in 1878 to 1,003 people in 1885. After a slow start, the escale of Mekhé also grew to a respectable size.<sup>62</sup>

The growth of railroad escales seems less impressive in other cases, however. Already listed in Walter's 1878 report as the "largest market of Cayor," Louga did not grow much beyond the 1000 inhabitants shown in 1878 on the Walter map, until the turn of the century.<sup>63</sup> Kelle and N'Dande seem not to have grown very much either; while M'Pal certainly, and perhaps Piregourey as well, seem to have actually declined in population.<sup>64</sup> The growth of Thiès, though due in part to the railroad's passage, also owed something to its choice as an administrative center, and to the fort and Catholic mission that were installed there. Nor does the size of these escales seem impressive if it is remembered that villages of 2000 and even 5000 people had been observed by Mollien and Caillé in the interior in 1818 and 1824.<sup>65</sup>

This is not to deny that railroads had an important influence on the growth of urban and semi-urban towns in Senegal, nor to imply that these agglomerations did not differ fundamentally from the large agricultural villages common in the region before the conquest. It is rather that both the redistribution of population and the growth of urban areas were more complex processes subject to the influence of other factors--some of which were also acting through the railroad.

A comparison of Tables 3 and 5, for instance, indi-

cates that, as might have been expected, the growth of each of the escales was closely related to the volume of peanuts shipped out of the escale. The volume of peanut freight at an escale would be related to the location of the escale relative to productive areas--Louga with respect to Djolof; Thiès and Tivaouane with respect to Baol and southern Cayor--and to the cost of shipping from station to port.

The problem of water availability during the dry season was also one of the most important factors in limiting the size of an escale--or any village for that matter. N'Dande, for instance, seemed destined for a bright future in 1886 when the colonial administration designated it as the headquarters of its colonial resident in Cayor and when the DSL also decided to install a central repair shop for its locomotives and a midpoint rest stop for the daily express trains there. Unfortunately, the wells of N'Dande were incapable of supplying the railroad's needs, much less those of an increased number of villagers; so that the railroad was sometimes obliged to haul in additional water by rail. The colony's administrative headquarters soon moved to Tivaouane, while the railroad's refreshment stop and repair shop were also eventually transferred to the more favorable site of Kelle.<sup>66</sup> The contrary case is best illustrated by Thiès, whose abundant, clear water figured largely in its selection later on as the junction point

for a branch railroad into Baol.<sup>67</sup>

A steady supply of water for steam locomotives along the rail line of course was a particularly acute problem in a hot, semi-arid, tropical climate, and the Batignolles had been especially diligent in digging wells for supplying water at each rail station when the line was built. Any surplus well water, as both the DSL and the colonial government realized, could also serve to bring more Africans to settle and stay in the vicinity of the escale. Pre-occupied as it was in the 1880's and 1890's with solving the water supply problems in St. Louis, Rufisque, and Dakar, however, the colonial government itself did little for the rail escales. In the period 1892 to 1897, the new Protectorate budget financed a paltry total of only 66 wells (895 meters total) of which 25 wells (416 meters) were put in near the Senegal river.<sup>68</sup> An extensive governmental program of well-drilling designed to use abundant water to attract and fix African populations in certain favored areas had to await the 1900's and was only undertaken seriously when construction of the Thiès-Kayes railroad began.

Lateral roads were another factor in tying escales to nearby areas of production. With few serious physical obstacles encountered near the rail line, except for the narrow Thiès scarp and an occasional marigot bed, roads for caravans could be built equally well in most directions.



However, there was little governmental planning of road systems except in the major communes, where only less than 50 kms of streets and roads were kept up by the colony's Public Works service.<sup>69</sup> Road building in rural districts was largely left to the discretion of French colonial administrators stationed on the spot--generally the commandants of the "cercles"--who would do it by means of annual corvées (called "prestations") of villagers living near the routes.<sup>70</sup> But since these officials were usually stationed only for short periods in any one area, the efforts of one administrator were often negated by his successors.<sup>71</sup> An 1897 survey of rural roads, most of them little more than trails, shows a total of only 1400 to 1500 kms, of which some 286 kms led out from Tivaouane alone.<sup>72</sup> Around 1895, it was suggested that a network of light, narrow-gauge rail lines ("système Decauville") branching out from the DSL be built deep into Djolof, Baol, and Sine--but nothing ever came of the proposal.<sup>73</sup>

Interestingly enough, the DSL line itself immediately became popular--to the annoyance of DSL officials--as a well-cleared major highway along which caravans and travelers could pass. The company's efforts to cordon off its tracks with barriers of thickets along the edge of its property proved fruitless as the rail line became, in effect, a convenient "royal highway" for the interior.<sup>74</sup>

Unfortunately this traffic also resulted in numerous accidents in which herd animals or unwary travellers were run over by trains. DSL officials were particularly upset about several train derailments that occurred when livestock wandering on the tracks were hit, and there were attempts to impose heavy fines on the owners of errant animals straying in the vicinity of the track.<sup>75</sup> Ultimately, however, DSL officials became resigned to the use of their line as a major highway.

The DSL's influence on population settlements and movements can only be properly appreciated within the context of the general problem of population distribution and mobility in the Senegambia. The Senegambia was a region relatively rich in land, but sparsely populated. Moreover, these populations--at least as it struck French observers--seemed to move about in the region with a marked mobility.<sup>76</sup> Outside the river basins, the sedentary populations--though much less mobile than the region's pastoralists--were obliged to leave soil untilled for long periods of fallow. The variations in scarcity of subterranean water during the dry seasons also would often force the shifting of village sites or the thinning of village populations. Sentiments of attachment to ancestral soil could be strong; but it was not uncommon for young men to migrate temporarily to distant regions, such as the European ports, to

earn a small nest egg of trade goods. Political disagreements would also often be solved or a tyrant's misrule answered by mass migration.<sup>77</sup>

The successful and prosperous states of the region were those that could extend their control over sources of manpower--perhaps simply by attracting people to move into their sphere of control--and then benefiting from the fruits of the toil and military support of these people. The French colonies were no exception, particularly since they needed a labor supply for construction work and for the handling of goods in commerce, as well as an assured supply of foodstuffs. French colonial governments, even before the period of imperial expansion, were very sensitive to any actions, political or economic, that might attract African populations toward European centers--or conversely repel them. The trade goods and arms sold by Europeans, the opportunities to sell products or learn trade skills, and the relative immunity of French-controlled districts from petty warfare were solid advantages attracting many Africans.

At the same time, the vexations of French law and taxation or simply the annoyance of truckling to foreign rule repelled many other Africans. French officials had to exercise constant vigilance from 1886, for instance, to prevent an exodus of slave-holding Peul pastoralists, many

of them longstanding French allies, toward the Segu Tukolor empire, because these herders feared that new colonial legal measures would free their slaves.<sup>78</sup> The turmoils raised by the issue of slave emancipation only ceased when rural areas of the colony were removed from the trammels of French law through disannexation in 1890.<sup>79</sup>

The colonial conquest of the 1890's altered the situation in one sense by absorbing some of the states hitherto competing with the colony for manpower (e.g., the Segu Tukolor empire). Nevertheless, eager as they were to show that the colonial venture would pay, and saddled as they were with a substantial and growing investment in such fixed installations as ports, rail lines, and trading escales, French colonial officials were even more keenly interested in drawing Africans into cultivation for export and in fixing them in locales where they could best support the export trades. In essence, the French colonial administration was engaged in redistributing the scarce labor resources of the conquered regions spatially as well as into certain economic sectors, and in so doing, it was fixing a rigid geographical framework upon the preexisting fluidity of the region's social geography.

Conditions had been transformed, of course, by the

completed conquest. It now became possible to legislate rural slave emancipation and to impose previously uncollectable taxes, without provoking mass emigration.<sup>80</sup> The imposed colonial peace also conversely permitted greater dispersal of population--as witnessed in the rapid decay of M'Pal, which had boasted 2,500 residents in 1878.<sup>81</sup> The railroad, of course, played an important role in drawing Africans into certain areas by providing trade activity, water supplies and road facilities. Nevertheless, it was only one of number of factors in the picture. From the 1890's the need to earn a head tax in cash, for instance, may well have been far more effective in impelling Africans toward certain favored areas in order to raise agricultural produce more profitably or to labor for wages.

An export enclave In his excellent study of railroad development in the former Belgian Congo, Huybrechts observed that railroads in that region had been used to distort domestic trade patterns by reorienting commerce toward the exterior while neglecting domestic traffic.<sup>82</sup> This point merits attention in the case of the DSL, all the more because of recent problems encountered by developing former colonies in promoting more equitable dispersals, spatial and sectoral, of economic activities within their borders.<sup>83</sup>

It does seem strange--perhaps even perverse--that the DSL, though a major transporter of peanuts, should have played such a small direct role in transporting domestic commercial products. This is apparent from the figures in Table 6 on annual rail haulage of millet, the basic food staple grown in the region. Some millet did enter the ports by rail; but much apparently bypassed the railroad overland. Livestock, a major item in domestic markets, also avoided the railroad, and were driven overland instead on foot. The DSL moreover never did try seriously to develop these lines of domestic traffic, although it did carry large volumes of imported foreign rice, which replaced millet in local diets to some extent.<sup>84</sup>

This evidence, though strongly suggestive, seems less conclusive, however, if argued from a different angle. Local domestic trade, after all, must have been stimulated to some degree by the profits from the export trade, even if the goods did not move by railroad to any measurably significant extent (e.g., the growing ports created a larger market for meat).<sup>85</sup> Even without a railroad, after all, the peanut trade and rice imports would have developed to some extent in narrower enclaves in coastal and fluvial areas, and it may be asked whether a significantly heavier domestic traffic in the relatively small area covered by the DSL could have been generated by rail in millet,

cattle, salt, kolas, or any other products of local consumption, given the relatively low value of these products locally. A factor in inducing some local sectoral dislocations (as in the substitution of foreign rice for millet), the DSL had in fact redressed certain prior spatial disparities by inserting a corridor of trading escales within the interior.

Of course the DSL, as one of the factors involved in a redistribution of population in the region, was helping to drain some of the substance from more remote regions, while benefiting a relatively small enclave.<sup>86</sup> But this was unavoidable given the modest area that the line could service by itself. The distortions due to rail systems designed to encourage export trade to the neglect of domestic trade become more pernicious and more apparent within a wider interregional context, as in the case of the regional network of rails for French West Africa, discussed in the next chapter.

DSL traffic, rates, and fares The DSL served principally then, aside from its strategic role, as an instrument to integrate Cayor and adjacent areas into a colonial "open economy" by carrying a cash crop to port and conveying back in return imported goods--cloth, rice, and diverse manufactured items. Like rail systems elsewhere, the DSL discriminated among classes of passengers and freight.

The so-called "slow" freight formed the bulk of commercial freight carried by this railroad, in contrast to a more costly express freight comprising excess passenger baggage as well as perishables that had to be transported quickly.<sup>87</sup> The slow freight was classed in turn, according to the nature of the goods transported, into three different categories, each of which was subject to different rates generally proportional to weight and distance.<sup>88</sup> In addition, a multitude of preferential "special rates" were introduced at various times for particular types of goods according to the size (weight or volume) of the shipment, season of the year, or stations of passage (e.g., St. Louis to Dakar).

Peanuts, finally treated as third class slow freight after some initial hesitation, generally accounted for most of the freight carried by the DSL--usually around two-thirds of the annual freight volume on the DSL (see Table 1). In addition, receipts from the traffic generated directly by the trade in peanuts--that is, from imported trade goods and a portion of passenger traffic as well as peanuts--must have accounted for a plurality of the railroad's annual receipts, although receipts from peanut freight per se constituted only about a third of the DSL's annual receipts (see Table 7).

The economics of rate setting for a variety of goods



could be complicated. Ideally each product would be charged enough to cover not only the operating costs of transportation, but also a share of fixed costs and a reasonable profit. Unfortunately, shipping costs of particular items can be extremely difficult to calculate since costs are based partly on the total volume of traffic for this type of item and indeed partly on the total pattern of traffic on the line.<sup>89</sup> Competition with maritime shipping and with animal porters in some cases could, moreover, force lower rates on some products. A low-priced product, such as peanuts, would also be charged relatively low rates to encourage a larger volume of peanut sales in the hope of generating a compensating flow of imported goods that could be charged the higher rates. In practice, therefore, rates were set or modified haphazardly according to whether a given rate promised to generate a respectable volume of traffic and whether profits in more lucrative elements of traffic seemed to be balancing losses in critical, but less-profitable goods. The art of rate setting, which obviously required sound managerial judgment in predicting changes in various elements of traffic as well as in computing costs, would also clearly have a political side, because the juggling of rates would favor the commerce of some merchants and some locales.

The freight rate structure on the DSL, it should be

noted, favored peanut exports from points near the extremities of the line over points on the central parts of the line.<sup>90</sup> Freight rates on the DSL, general or special, were almost all based on a kilometric rate per weight shipped, so that shipping from stations located far from ports would pay higher freight charges. For instance, the railroad would charge 9.95 francs a ton for a shipment of peanuts from Tivaouane to Rufisque; 13.85 Fr/ton from Mekhé to Rufisque; and 18.40 Fr/ton from Kebemer to Rufisque--a spread that could influence the volume of trade and production along the line in the 1890's, when a ton of peanuts was priced typically at 150 francs a ton in Rufisque.<sup>91</sup> Table 3 indeed confirms the point by showing an upsurge of peanuts exported from north-central stations of the line, from Kelle to Goumbo-Gueoul, after about 1904, when increased commodity prices in Europe raised prices at Rufisque into the 200 to 250 Fr/ton range and above--reducing rail costs to a much smaller percentage of the price.

Perhaps the regions near the center of the railroad might have developed their export cultivation even sooner, had the DSL utilized either sliding-scale kilometric rates that decreased with distance or fixed rates that would apply uniformly over wide zones on the line. Rufisque's chamber of commerce repeatedly suggested introducing flat zonal freight rates for peanuts in the mid-1890's; but St.

Louisian merchants, fearing that a zonal system would work against their interests, opposed it. DSL management, perhaps realizing that zonal freight rates could mean the loss of traffic out of Thiès and Tivaouane with higher rates at these stations, stubbornly opposed changing the rate structure.<sup>92</sup>

The predominance of peanut freight on the DSL also aggravated operating problems for this railroad by introducing a pronounced seasonal variation in the rhythm of its traffic. Because the peanut crop unfortunately needed to be shipped almost entirely during the dry season from harvest in November until the rains of the following May or June--after which any unshipped peanuts risked being spoiled by the rains--a heavy tempo of rail traffic during this season would be followed by a long slack period during which rolling stock and personnel would lie idle. Attempts to cut down on the fixed costs of this idleness by buying less rolling stock or hiring a smaller work force would only cause long delays and provoke customer complaints during the busy season--a chronically recurring problem on the DSL. This could be particularly acute on the single-track DSL line, since one late or stalled train would tie up a string of other trains at stations behind or at cross-over points ahead.

Ideally rail traffic needed to be spread more evenly

over the year; but no appreciable rainy season freight traffic ever developed. Government shipments of building materials or troop supplies by rail were too sporadic to assure a steady slack-season traffic, and domestic freight, as noted earlier, formed no significant part of rail traffic.<sup>93</sup>

On the other hand, the magnitude of passenger service, an element of traffic with a steadier year-round demand, pleasantly surprised DSL and government officials from the beginning. The railroad immediately became a popular mode of transportation in the interior, with passengers accounting for over one-half of the railroad's receipts at first, and between a third and over two-fifths of the line's receipts from 1892 to 1910 (see Table 7).

As intended, the DSL railroad's daily express trains replaced the dispatch-boat service previously carrying passengers between St. Louis, Rufisque, or Dakar. Yet, a breakdown of company statistics for the years 1885 to 1895 (Table 8) shows that 3rd class passengers with short journeys of only 54 kms one-way on the average (compared to 100 kms for 1st class) accounted for about 90% of all passengers and 85% of passenger traffic receipts. The statistics testify to the popularity of the railroad with Africans, who made up virtually all the 3rd class passengers; and also indicate that, given the rudimentary com-

forts and service in 3rd class, these passengers were also paying a disproportionate share of the railroad's receipts. Thus, African 3rd class passengers were effectively subsidizing lower peanut freight rates, as well as a more comfortable service for first class passengers (who paid a relatively low 0.12 francs per km as compared to 0.055 Fr/km for 3rd class).<sup>94</sup>

The DSL company Relations between the DSL company and the colonial government of Senegal became smoother and more amiable in the period after construction. In 1890, the governor wrote that he considered the DSL's Dakar-based chief of operations as virtually a loyal member of Senegal's colonial administration, and this cordial spirit of cooperation seems to have persisted for about the first twenty years of DSL operations.<sup>95</sup> Most important were the efforts of the colony on the DSL's behalf in promoting the company's project for a new branch line into Baol--a venture that was almost approved in 1898-99.<sup>96</sup>

The DSL's relations with the government in Paris, on the other hand, were far less congenial during this period. For one thing, unresolved litigation left over from the period of construction remained as irritants--the last being resolved only in 1917. Of far greater moment were the company's struggles with the metropolitan government over the financial conventions governing the DSL's profits

on the line.

During the period 1885 to 1900, government officials and members of the National Assembly were particularly incensed over the large, recurring operating deficits being run up by the company, since the state--as agreed in the 1880 convention--had to make substantial outlays covering these deficits as well as the statutory minimum dividend. The detailed, informative annual reports of government inspectors and the monthly technical surveillance reports were basically directed at reducing the size of these deficits, which soon assumed alarming proportions (see Table 9).<sup>97</sup> Commenting that the railroad had been created, after all, for strategic rather than commercial purposes, government officials were urging in 1886, for instance, that costs be reduced by cutting down sharply on company staff and rail services. It was suggested that some way stations be shut down, that passenger runs be reduced, and the company's medical service be eliminated.<sup>98</sup> These shortsighted economies seemed less necessary as rail traffic picked up sufficiently to allow all but one way-station to collect enough receipts to cover expenses. But with the DSL still showing annual operating deficits until 1898, the metropolitan government was even asking the DSL to raise freight rates for peanuts--a measure that the DSL wisely resisted.<sup>99</sup>

One means of reducing the massive annual governmental subsidies was to end the government's blanket guarantee of operating deficits by pegging DSL costs at artificial maximum levels that the company could exceed only at its own expense--a procedure already envisioned in the convention of 1880 and strongly advocated by the joint-ministerial Verifications Commission. This in fact had been one of the main reasons for sending the engineer P. Etienne to Senegal in 1886. A workable formula could be set, however, only after experience taught what "normal" operating conditions for the line would be; so the DSL, not surprisingly, balked at accepting any formula until 1891--a precaution that allowed the DSL to get by the costly initial period of operations (and line reconstruction).<sup>100</sup> The 1891 arrangement, however, proved unsatisfactory.

A compromise hammered out by a panel of experts, the "Sentence Arbitrale" of April 10, 1891 pegged costs per kilometer of track in service according to the formulas:  $4,500 \text{ Fr/km} + \frac{R}{2}$  for operations (where R was the annual receipts per kilometer); and a fixed 1,650 Fr/km for maintenance.<sup>101</sup> Mindful of these limits, the DSL company, as was intended, curtailed its real expenses, trimming staff and waste for a more streamlined operation; but governmental outlays continued at a high rate under this

arrangement. From 1892, the DSL's volume of freight shipments and receipts jumped significantly and remained at high levels throughout the 1890's. This reduced the gap between real expenses and receipts, but inflated the calculated nominal operating costs, which rose directly as a function of receipts. Now it is true that only a part (ultimately 10%) of the difference between calculated and real operating expenses could be kept by the company as a bonus for its economizing efforts; the larger part of the difference was set aside in a reserve fund to be used for emergencies arising on the DSL. But government officials were scandalized by the growth of this reserve, which totaled 8 million francs by 1900 even while the cumulative governmental outlay for DSL operations since the inception had swollen by 1900 to a total of over 43 million francs.<sup>102</sup>

DSL officials had hoped to use these reserve funds to build a new rail spur from Thiès.<sup>103</sup> But this was not to be, as a new convention of December 21, 1900 replaced the 1891 arrangement, and the old reserve was broken up and its funds divided between the DSL and the state. The new 1900 arrangement ended the limitless accumulation of large reserve funds, at least, by creating two smaller funds restricted to 1.25 and 1.5 millions respectively, with any excess difference between calculated and real expenses to revert back to the state.<sup>104</sup> The old 1891



expense formulas were replaced by a more reasonable single equation of:  $3,250 \text{ Fr/km} + \frac{R}{3} + 0.015 V + 0.05 T$  (with R as receipts per kilometer and with V and T respectively the equivalent annual total of passengers and freight tonnage traveling the entire length of the line). The DSL's old economy bonus was retained, however, and lifted up to its old levels by doubling the company's share of expense "economies" from 10% to 20%.

Fairer than the 1891 arrangement, the 1900 convention soon became much more profitable for the DSL than expected. A mushrooming freight traffic from 1900 brought prosperity to the line: receipts soon far exceeded real expenses, even while the company reaped additional profits from an economy bonus based on a calculation of fictional expenses.

The growing prosperity of the DSL was soon reflected in the attention increasingly paid to its stock in metropolitan financial markets. Up until 1900, DSL shares had been valued at a stable 650 francs per share, reflecting the nominal 500 franc investment and the government's guarantee of an annual dividend of 29.60 francs per share (on slightly more than 10,000 shares outstanding).<sup>105</sup> In 1901, the DSL's directors were able to declare an additional dividend of 5 francs per share for the first time because of burgeoning receipts and, in 1902, raised the

dividend by 8.40 francs to a total of 38 francs per share. After fluctuating between 660 and 710 francs per share in 1901, DSL stock prices shot up to the 706 to 785 range in 1902; to the 788 to 860 range by 1903; and to the 845 to 925 franc range by 1905.<sup>106</sup>

The economy bonus played a key role in the DSL's profitability; in 1907, for example, the DSL's board was able to declare a larger extra dividend of 16.40 francs (making a total of 46 Fr/share) even though receipts had fallen in 1906, because the bonus had more than compensated for the drop.<sup>107</sup> Prospects for the line seemed exceptionally bright because the government had undertaken construction of a new rail line branching the DSL from Thiès toward Kayes, where it would link up with the Kayes-Niger railroad, and the DSL had obtained in 1908 a franchise for 2 years to operate the first section of this line to Diourbel--a lucrative arrangement in which the DSL received 40% of the new line's receipts even as the new traffic swelled the old line's receipts and economy bonuses.

For 1908 the DSL dividend reached 50 francs; in both 1909 and 1910 it rose to 55 francs. In 1908 the stock sold above 900 francs; by mid-1909 it was at 1165 francs, by mid-1910 at 1218 francs. Even the government's decision in 1910 to exclude the DSL from participation in operating the Thiès-Kayes line depressed stock prices only temporar-

ily, since it also fueled rumors of governmental plans to buy the DSL railroad outright--in a settlement that would be decidedly advantageous to the company.<sup>108</sup> In 1911, the stock price reached a peak of 1415 francs a share: but then the bubble burst as the government unexpectedly denounced the convention of 1900, ending speculation that the railroad would be purchased or that its profits would be as high in the future.<sup>109</sup>

Why was the 1900 arrangement denounced? Perhaps it was due to political changes in the Ministry of Colonies, which was increasingly reflecting the local government's growing coolness toward the DSL.<sup>110</sup> It was certainly due in part to the very success of the DSL in economizing in its operations despite a growing traffic load.

With the extra burden of assuring service on the Thiès-Diourbel rail branch, DSL railroad operations were put under a severe strain. Frequent breakdowns of an overworked rolling stock and the resulting long delays evoked strong protests from local merchants. Stung by the criticisms voiced in a session of the colony's General Council, DSL management unwisely called for an official inquiry to clear the company of these charges. The resulting inquiry only prompted a new flood of criticisms that tarnished the company's image. Dakar's chamber of commerce commented, for instance:

Operations are defective from all points of view. Passenger trains never arrive on time, or rarely, and often delays are over one to two hours, and more. These delays are caused generally by the considerable time lost in stations from loading and unloading freight so as to leave empty wagons behind while taking only full wagons, and from a scarcity of personnel. This wouldn't happen if passenger trains were only passenger trains and not also freight trains.

The rolling stock, locomotives as well as freight cars, is defective and insufficient. Passenger cars are badly kept [and] of a repulsive filthiness--the seat cushions stained with grease spots. Passengers--some women--have been seen standing for the entire journey of 10 hours rather than sit on the cushions that repel them. One must note that the cars are old and badly assembled. The insufficiency of personnel and materiel has often been signaled by this Chamber with result.<sup>111</sup>

Unfortunately for the DSL, moreover, an official investigation of the charges led the governor of Senegal to conclude, "that the complaints formulated by the General Council of Senegal . . . are in great part justified." The DSL's equipment was found to be old and insufficient and obviously in need of replacement, its passenger service in some circumstances in violation of conditions set out in the convention of 1900; and many of the operational defects resulted from the company's exploitation of overworked and underpaid European agents, who in turn took it out on the public.<sup>112</sup> The DSL only compounded its difficulties by asking in September 1910 to be allowed to extend the maximum statutory shipping delay for peanuts from the regulatory three days to five days. The request evoked a storm of protest from local merchants and even earned a

rebuke from the influential Union Coloniale Française.<sup>113</sup>

Conditions were no longer as favorable for the operation of a government-subsidized private company in the French colonies. The National Assembly was unwilling to pay for these ventures, and the Ministry of Colonies had itself finally turned away from this method for developing an empire. The DSL was indeed to survive and even prosper. World War I suspended governmental efforts to nullify the convention of 1900, though with the DSL's economy bonus reduced from 20% to 15% as of January 1915. However, in retrospect, the position of the DSL had suffered one damaging blow from which it never really did recover. That lay in the failure of the company to obtain the options to build or operate the Thiès-Kayes railroad, which not only lost it the profits that could come from managing the new line and from the profitable traffic patterns that could have been developed to the advantage of the old line, but henceforth also embroiled it in interminable, often bitter controversies with the colonial government over coordination of the two lines. Inevitably, the role of the DSL company was thenceforth to diminish considerably, first politically and then eventually economically.

Notes

1. Anonymous, "Chemins de fer au Sénégal," Bull. SGCB, no. 4, February 18, 1884, p. 106.
2. Vaubourg avant-projet, January 15, 1872, FOM, Senegal XII,40: Walter report, November 25, 1878, FOM,TP. Overoptimism was, of course, a common foible of railroad promoters. See H. Craig Miner, The St. Louis-San Francisco Transcontinental Railroad (Lawrence, 1972).
3. See below, page 193. Indeed the company was required by its concession contract to maintain the daily two-way express service between Dakar and St. Louis.
4. GS to MMC, February 28, 1886, ANF, DD-2/ 2434. At Dakar it took three separate operations in handling to bring coal from ship to depots. At that time the railroad lacked even the rolling stock necessary to haul the coal to St. Louis.
5. Jacquerez report, September 15, 1901, FOM, TP. The rate by schooner from Dakar to St. Louis was 13 to 15 francs per ton plus a 2% ad valorem charge for insurance. Competitive special rates on the DSL reduced charges on stone, wood and iron for construction down to 20 Fr/ton in 1894 and for coal down to 21.90 Fr/ton in 1899.
6. Inspector L. Petyt's report on the DSL for 1888-1889, FOM, Senegal XII,69, p. 24, noted that the freight terminal at St. Louis opened for service only on January 9, 1888; but the lack of any path leading to it from the city, made it unusable until 1890. The note by Fournié, May 8, 1890, FOM, TP, remarked that the wooden pier built for the riverfront rail station at St. Louis had been devoured by worms within two years. Traffic from Dakar to St. Louis by sea would be governed by the state of the bar, which would be easy to pass in some years, difficult in others. (see "Summary report on increases and decreases in the traffic of the French Sudan in 1898," February 1, 1899, ARS, Q49). Even in 1912, the municipality of St. Louis preferred to ship construction stone by sea from Dakar rather than by rail (P.V., Municipal Council of St. Louis, February 13, 1912, SARS, DCF). According to the Jacquerez report, September 15, 1901, FOM, TP, a November 1897 special freight rate on imported goods shipped from Dakar to St. Louis brought 1,686 tons of traffic to the DSL in 1900; but by 1902 the DSL was asking that it be rescinded because it generated too little traffic (P.V., CC-St. Louis, February 28,

- 1902, ARS-L).
7. Report by Meniaud, September 1, 1910, ARS, P244.
  8. copy of note on maritime rail station at Dakar, n.d. [1897 or 1898], FOM, TP.
  9. A brief early description of the famous Lefebvre carriages is in "Sénégal," Bull, SGCB, no. 20, October 15, 1883, pp. 588-589. See also Denise Bouche, Les villages de liberté en Afrique noire française, 1887 - 1910 (Paris, 1986), pp. 58-59.
  10. B.O. Oloruntimehin, "Senegambia - Mahmadou Lamine," in West African Resistance, ed. by Michael Crowder (London, 1971), pp. 80-110.
  11. See Martin Klein, Islam and Imperialism in Senegal (Edinburgh, 1968), pp. 134-145; A. Dessertine, Un port secondaire de la côte occidentale d'Afrique-Kaolack (Chamber of Commerce of Kaolack, 1967), pp. 14-15; Villard, Sénégal, pp. 141ff, especially p. 146.
  12. Villard, pp. 175-179.
  13. Ibid., p. 152; report by Jauréguiberry to the French President, October 12, 1882, printed in Moniteur du Sénégal, November 7, 1882, pp. 199-200. The difficulties for residents of Dakar and Rufisque to reach St. Louis by sea for regular visits, such as for sessions of the colonial General Council, are noted in GS to MMC, April 25, 1887, ARS, 2B61. See also Yves St. Martin, Une source d l'histoire coloniale du Sénégal. Les rapports de situation politique, 1874-1891 (Dakar, 1966).
  14. Bouchet to S/Sec, November 15, 1887, Senegal XII,69, stated: "The DSL was conceived as a strategic route. If one uses it to favor and develop commerce, so much the better. But one ought not to exaggerate [its] commercial character in making too great sacrifices for this secondary objective." As noted in the Chaper report of 1895, FOM, TP, p. 128 ministry officials had not even bothered to set freight rates for peanuts in the rate clauses of the annex to the convention of October 30, 1880.
  15. These figures derive mostly from Ministry of Marine, Tableaux de population, de culture, et de commerce dans les colonies, 1878-1880, and Ministry of Marine,

Statistiques coloniales, 1882-1887. X Guiraud, L'arachide sénégalais (Paris, 1937), p. 37, tabulates a variation in peanut exports from Senegal going from a high of 43,500 tons in 1883 down to 21,729 tons in 1886. His figure of 16,086 tons in 1882 seems more reasonable than the figure of Jean Adam, L'arachide (Paris, 1908), p. 118, of 83,000 tons for 1882.

16. Adam, pp. 19-20, "Notice sur ... Matam," 1904, ARS, 1G-292, which said: "Autrefois le Damga fournissait beaucoup d'arachides au commerce du Sénégal, mais depuis la construction de la voie ferrée, qui relie St. Louis à Dakar, la culture de ce produit a été presque abandonnée en raison du manque de débouchés commerciaux. ... vu les frais de transport, le cours n'en est plus suffisamment rémunérateur pour les cultivateurs du fleuve."
17. Report of Customs Service, Senegal, 1st semester 1903, ARS, 2G3-22 commented on the extension of commerce into the interior in response to higher prices. "Des maisons nouvelles, de nombreux comptoirs ont été récemment créés. Elles ne se bornent plus, comme précédemment à attendre des indigènes dans les escales principales de la Côte, mais envoient des agents et établissent des succursales un peu partout et principalement dans le Baol, le Badane, le Sine-Saloum et la Casamance." - The tastes of the customers were changing also with significant increases in the importation of cloth, rice, and kolas.
18. Adam, pp. 18, 20-21.
19. Peanuts in coastal areas south of the Saloum and those of Galam, however, were judged inferior to those of Cayor; even those of Sine and the Petite Côte brought slightly lower prices. See Adam, pp. 47-48, 126, 136-141.
20. R. W. Fogel, Railroads and American Economic Growth (Baltimore, 1964), pp. 49-110, especially pp. 53-55. Fogel's express assumption that the demand for produce was inelastic and his implicit assumption that the supply of wagon-hauling animals was elastic were both clearly inapplicable to Senegal.
21. As early as 1881, an estimated 8 to 9,000 camels might be seen in the town during the busy trading season (Noirot's journal on the Baol mission, entry of April 19, 1881, ANF, 148AP2); see also the Noirot report of November 28, 1892, FOM, Senegal XII, 82; commercial



- report, "cercle" of Louga, 1st trimester 1903, ARS, 2G3-28; Exposition of 1900, Le Sénégal (Paris, 1900), pp. 399-400; report in Journal Officiel du Sénégal, February 1, 1900, pp. 45-46.
22. On porterage in the Congo see Jean Suret-Canale, L'ère coloniale, 1900-1945 (Paris, 1964), pp. 42-52; for porterage in Guinea see the Payn report of September 1903, ARS, 0250; for some isolated examples of porterage in Senegal, see the political report for January 1906, ARS, 2G6-4, and the political situation report for Niani-Ouli, May 1909, ARS, 2G9-36. Estimates for the rates for animal porters varied from one-quarter to one-half of the value of the peanuts at the trade center, depending on the distance covered. Some useful information on rates is covered in the Noirot report of November 28, 1892, FOM, Senegal XII,82; the Marmier report of June 5, 1893, FOM, Senegal XII,81; handwritten note, doc. no. 22, ARS, 085; report of Director Public Works, September 23, 1907, Ibid.; see also Adam, p. 105. Cf., Bouche, pp. 59ff., for the situation in the Sudan.
23. GS to MMC, political situation, April 7, 1877, ARS, 2B73, p. 122 recto; Bois, Sénégal et Soudan, p. 17. Broken during the hivernage of 1884, the bridge was still one way to bypass the railroad: Commandant in Cayor to GS, January 29, 1887, ARS, P1; Sallenave report for January 1889, FOM, Senegal XII,71; Assistant Mayor of Rufisque to Director Interior, December 14, 1890, SARS, DCF.
24. Transporters would generally first move peanuts from areas close to ports and railroad stations and then gradually work their way out to more remote areas -- obviously in order to make as many trips and thereby earn as many fees as possible. Cultivators distant from trade centers therefore not only paid more for transportation, but had to sell their produce late in the trade season.
25. Petyt report on DSL receipts, 1888-1889, FOM, Senegal XII,69; report of DSL's chief of operations, March 1891, FOM, Senegal XI,68; Marmier report of June 5, 1893, FOM, Senegal XII,81; Noirot report, November 28, 1892, FOM, Senegal XII,82; Gouvernement General de l'AOF, Chemins de fer en AOF, Vol. I: Chemins de fer du Sénégal (Paris, 1906), (henceforth: DSL-TK), pp. 160-162, 174.
26. Bois, Sénégal et Soudan, pp. 46ff

27. Etienne report, March 31, 1887, FOM, Senegal XII,69.
28. See also note by Fournié, May 8, 1890, FOM, TP; Marmier noted the rich land farther east near M'Bambey, and suggested a Thiès-Fatick rail spur passing by way of Diarring (report of June 5, 1893, cited in foot-note 25).
29. President of CC-Rufisque to S/Sec, September 8, 1884, SARS, DCF--"Le commerce de Rufisque, dès les derniers coups de pioche a détaché sur ces derniers points [Sebikotane to Tivaouane], remontant vers St. Louis, des agents européennes pour y faire du commerce et encourager ainsi les indigènes à augmenter leur culture."
30. Rufisque also received peanuts brought in directly by pack animals or transshipped by small boats from nearby coasts. E.g., see Exposition of 1900, Les colonies françaises · I · Le Sénégal (Paris, 1900), pp. 399ff.-A report of the police at Rufisque to GS, January 29, 1904, SARS, DCF, lists the largest firms in Rufisque in 1904 as:

Firm	Invested Capital (fr)	Exports (Fr)	Imports (Fr)
Maurel & Prom	6,000,000	3,000,000	2,000,000
CFAO	6,000,000	550,000	1,000,000
Maurel Frères	4,000,000	1,800,000	1,200,000
Vezia	1,000,000	2,250,000	1,500,000
Assemat & Cie	"	1,200,000	700,000
Pascal & Buhan	"	2,500,000	2,000,000
Philippe	"	3,000,000	2,000,000
E. Chavanel	"	1,000,000	500,000
J. Blanc	"	1,200,000	300,000
Devès & Chaumet	"	1,000,000	200,000
Delmas & Cie	"	500,000	200,000

31. E.g., see R. Peterrec, Dakar and West African Economic Development (New York, 1967), pp. 42-43. The DSL company would also have preferred that the peanuts be exported via Dakar where the company maintained its main offices and repair shops (see report of DSL board of directors to stockholders, June 30, 1893, FOM, TP).
31. A rough estimate of which stations were feeding which ports may be obtained from Table 3 by summing the annual shipments from each station starting from the nearest station and proceeding progressively up the line until the sum shipped into the port that year is

reached. Cross-shipments of peanuts and shipments of seed would probably produce only minor errors for that estimate.

33. An interesting description of the gum and peanut trade is contained in the highly informative pamphlet by A. Aumont, President of the Chamber of Commerce of St. Louis for the National Colonial Congress, March 10, 1889, first galley proof in ANF, 148AP2, especially pp. 3ff. Gum was particularly used in Europe for textile manufacturing, in pharmaceutical drugs and in confectionery. On the gum trade, see Genevieve Désiré-Vuillemin, Essai sur le gommier et le commerce de la gomme (Montpellier, 1962).
34. Ibid.; P.V., CC-St. Louis, January 8, 1889, SARS, DCF; President, CC-St. Louis to Director Interior, December 20, 1889, SARS, DCF.
35. See Laude report, May 1880, ARS, 1G44. The Delegate of the Government General of French West Africa to GG, March 15, 1900, ARS, Q49, wrote that before 1890 the important merchants of St. Louis had no agents in the region except for one European working for Maurel & Prom at Médine for a few months a year. One merchant was still complaining in 1898 that the Sudan was full of African traders from Sierra Leone underselling the St. Louis merchants. See the Raba report, June 20, 1898, Ibid.
36. The shift is implicit in the population transfers revealed by the censuses of 1876 and 1885 (see Table 4); note also the observations by J. Hubler in his two visits to Rufisque in Hubler, "Rufisque," Bull. SGCB, no. 13, July 2, 1883, pp. 377-381 and "De St. Louis à Joal par terre," Bull. SGCB, no. 11, June 1, 1885, p. 321.
37. The excellent study by P. T. Bauer, West African Trade (Cambridge, 1954) on commerce in colonial British West Africa places greater emphasis on the advantages of larger firms in obtaining credit (pp. 108ff, 180ff) and in arranging for exclusive marketing rights (pp. 130ff); but a shared monopoly over shipping really seems the key factor.
38. The system is described by Adam, pp. 103-115. Several of the larger Senegalese traders of the Sudan are mentioned in Delegate of the Government General to GG, March 15, 1900, ARS, Q49. It was Faidherbe

apparently who broke the monopoly of the river trade by creole and African traders. See GS to Minister, August 28, 1855, FOM, Senegal I,43, and the Faidherbe memorandum, October 1, 1858, FOM, Senegal I,45, which underlined the position of the creole families of St. Louis as intermediaries between the colony of Senegal and neighboring states. " ... les commerçants européens n'avait pas le droit d'aller commercer dans l'intérieur. La traite était livrée d'une manière absolue et sans contrôle aux indigènes ... La majorité du commerce européen ... sollicite vivement des reformes ..."

39. Colin Newbury, "Trade and Authority in West Africa from 1850 to 1880," in Colonialism in Africa, Vol. I: The History and Politics of Colonialism, ed. by L. Gann and P. Duignan (Cambridge, 1969), p. 81.
40. As Newbury noted, the high price of imported goods was insurance, to some degree, for lost or stolen goods.
41. GS to MMC, December 20, 1886, ARS, 2B64; Aumont, p.3.
42. See the extremely interesting GS to S/Sec, March 3, 1893, ARS, 2B68; the actions of the Devès-Crespin party are discussed and analyzed in Robert July, "The Politics of Assimilation in Senegal," in The Origins of Modern African Thought, ed. by R. July (New York, 1968), pp. 234-253.
43. The rivalry between European merchants and African middlemen was only part of a more general process going on to some degree all along the west coast of Africa during and after the conquest. Some European traders preferred to continue dealing with long-time African trading partners on the coast, but many others were hastening to bypass these African intermediaries for direct trade inland with producers. In other parts of West Africa, such as the Niger delta, the economic clash of importer and intermediate trader was translated into dramatic and military conflicts because African intermediaries were defending their interests with the apparatus of politically independent local states. In Senegal, where trader and importer were generally both French citizens or subjects owing a common fealty to the same political entity, the conflict was more subtle--less open or bloody--but real nonetheless. E.g., see C. Newbury, "Credit in Early Nineteenth Century West African Trade," Journal of African History, XIII (1972), no. 1, pp.

81-95.

44. On the maîtres des langues, see e.g., Bois, Sénégal et Soudan, pp. 51-52. The persistence of the maîtres des langues in the trade is verified by the many arrêtés against the practice. E.g., arrêté of Mayor of Rufisque, October 29, 1883, SARS, DCF; President, CC-St. Louis to Director Interior, March 16, 1893, SARS, DCF, complaining that the arrêté of May 24, 1862 against the maîtres des langues be enforced; also President, CC-Rufisque to Director Interior, December 5, 1896, SARS, DCF.
45. See Jean Robin, "Fondation d'un marché. Le Marbat," Sénégal, 56, September 1943, pp. 307-315, on the role of the "n'diatiguais" in the market of Louga. See also Dr. Colin, "Le commerce sur le Haut Sénégal," Bull. SGC de Paris, 5, October 1882-October 1883, pp. 165-166. (article quoted by Newbury as cited above footnote 39). Cf., Bauer, pp. 22ff.
46. Aumont, pp. 3-4 who wrote: "Il semblait naturel au début que les indigènes auraient chargé leurs graines sur la voie ferrée et qu'ils n'auraient eu qu'à se présenter dans les diverses maisons de commerce où on leur aurait acheté leurs produits sur le récépissé du chemin de fer, ils y auraient eu avantage car ils auraient évité les frais énormes de charrois par bêtes de somme qui suivant la distance des lieux de production leur coûtaient le quart, le tiers ou la moitié des graines transportées, de plus ils étaient toujours certains de vendre à un prix plus élevé leurs produits à St. Louis où le négociant exportateur les leur achetant sans frais pouvait leur offrir davantage. Ainsi cultivateurs, négociants y trouvaient leur avantage et le petit commerçant détaillant profitait de cette situation qui jetant l'argent sur la place de St. Louis lui permettait l'écoulement de ces marchandises ... Mais hélas! La concurrence a fait que chacun a voulu et a cru s'emparer de la proie et que tous ceux qui pouvaient attendre se sont précipités sur tous les points où existe une gare, y ont installés des comptoirs, divisant ainsi leurs forces, décuplant leurs frais généraux, éparpillant les espèces et se rendant impossible une situation exceptionnelle dont il leur était si facile de profiter. Le petit commerce a ressenti le contre-coup de cette tactique et est obligé de suivre cette mauvaise voie. Il faut espérer qu'un jour viendra ou cessera cette situation qui ne profite ni au commerce ni à l'indigène." Aumont wrote these lines when he was president of the Chamber of

Commerce of St. Louis in 1889.

47. See above footnote 29. An auction of 99 plots of land at M'Pal in 1883 delighted colonial officials since they raised 65,525 francs thereby (excerpt, P.V., Administrative Council of Senegal, November 20, 1883, SARS, DCF). Sales of lots at Thiès followed in 1886, and merchants were clamoring for similar sales of lots at Tivaouane as early as 1884 (acting GS to MMC, September 9, 1884, ARS, 2B58).
48. Adam, pp. 103-110. To some extent the position of the African trader was associated with the barter system, which persisted in the Senegal gum trade and in more distant areas for the peanut trade. A growing tendency to use specie instead of barter in the peanut trade did not necessarily lead to separate sale and purchase transactions in the trade because of the widespread practice of loans to cultivators secured with pawned valuables (see Aumont, p. 108; Adam, pp. 105-107).
49. The proposed Baol rail spur to Fatick, of course, might also have weakened the position of commercial operations already based in the DSL escales or even diverted business to Fatick. See Robert report, August 14, 1894, ARS, 036, report by Valantin, June 12, 1889, FOM, TP; comments by Noirot in a report to GG, March 1, 1909, ANF, 148 AP5.
50. Interestingly enough there was some general uncertainty in the early years of railroading as to whether or not a railroad could be managed much like contemporary turnpikes and thus be available to users at all times (see Stephen Salisbury, The State, the Investor, and the Railroad. The Boston and Albany, 1825-1867 [Cambridge, Mass., 1967], pp. 63-64, 82-85). In reality, safety requirements precluded running the railroad like a toll roadway.
51. Of course, the Devès family of Senegal also had relations with the Bordeaux branch of the family. A Devès incidentally did become a member of the seven-man DSL board of directors in 1910. Henceforth, a Devès was always seated on the board until 1929.
52. See especially Samir Amin, Le monde des affaires sénégalaises (Paris, 1969), pp. 15-21. As noted earlier, there was a general movement of commerce into the interior after 1900. E.g., as noted in a political

report of January 1906, GS to GG, ARS, 2G6-4, calling attention to the installation of new commercial operations in both eastern and western Baol, "la concurrence forçant les négociants a s'établir dans les centres de production au milieu meme des indigenes!"

53. As in 1903, when low prices led cultivators to hold back sales. At Louga, merchants who had granted long-term credit since the famine of 1901 were deserted by debtors who preferred to sell at higher prices to traders at other escales (commercial reports for the "cercle" of Louga for the 1st and 2nd trimester of 1903 to GG, April 1903, ARS, 2G3-6). A report by the Customs Service in Senegal, for 1903, ARS, 2G3-22, noted that an entente existed between the major firms to keep prices low in 1903, because prices had been too high the previous year.
54. The Thibaud report on a Casamance railroad project, dated 1914, copy in FOM, TP, p. 54, is explicit on this point in reference to the TK and the projected Casamance railroad. It is the key piece of evidence which led to the general argument, presented in the text. After this, more indirect remarks, as in Adam, pp. 104, 150, take on more meaning.
55. X. Guiraud, L'arachide sénégalaise, pp. 115-120.
56. Each urban center had large seasonal floating populations, in which many would try to evade census rolls out of fear of taxation. At the same time frequent shifts in the administrative boundaries of urban centers, as well as rural districts, greatly reduce the value of the limited statistics available, particularly since extension of a boundary could add in long-time residents not previously counted. In reality, some long-time residents of the absorbed area might also have moved away because of the change, thereby decreasing the local population rather than increasing it as the next census might suggest.
57. On the growth of the ports in Senegal, see especially Roger Pasquier, "Villes du Sénégal au XIX<sup>e</sup> siècle," Revue Française d'Histoire d'Outre-Mer, 47 (1960), pp. 387-426.
58. On the proposed suppression of all military posts, see GS to MMC, July 26, 1885, ARS, 2B64. On the new telegraph line, see GS to MMC, July 28, 1885, ARS, 2B59.

59. A map by Walter, November 14, 1878, is in FOM, TP.
60. See the copy of the 1865 map of "Diambour, Cayor et Saniokhor" by Regnault, FOM, Senegal XII,41; and the June 1883 "Carte du Cayor et du Diambour, 1858-1883" by P. Famin, map BD-4, ARS, map files.
61. Walter map, November 14, 1878, FOM, TP; the Walter report, November 14, 1878, FOM, TP, described Tivaouane as a "grand marché des produits du Baol et du Cayor." A note by Inspector General Bernard for S/Sec, May 28, 1887, FOM, Senegal XII,71, signalled the growing importance of Tivaouane as a caravan junction, which he felt was natural because Tivaouane "est le point central de la culture des archides dans le Cayor." See also Paul Vigne, "La question du Soudan-Le chemin de fer de DSL," Bull. SGCB, 15, August 1, 1887, pp. 449-465. Up to 1897, a perimeter of 300 meters around each rail station in Cayor belonged to the French state. In 1897 this was expanded to a square of 2km x 2 km for Tivaouane and squares of 1 km x 1 km for all other escales in Cayor (see copy of treaty of March 23, 1896, SARS, DCF). In 1902 the size of the squares were increased to a 4 km x 4 km for Tivaouane and 2 km x 2 km for the other escales.
62. P. Etienne noted in his report of March 31, 1887 that Mekhe's receipts barely covered expenses in 1886. Apparently some of Baol's peanuts also exited via Mekhé.
63. See Table 5 Walter report, November 14, 1878, FOM,TP.
64. Pire, centered in a lush forest, might be the same village mentioned in some sources as a center of Muslim scholarship in Cayor.
65. Mollien, L'Afrique Occidentale, pp. 59, 135, 147; Rene Caillé, Voyage à Temboctou et à Jenné, I, (Paris, reprinted 1965), pp. 34-35; GS to Minister, March 13, 1858, FOM, Senegal I,43 estimated that Niomré had held a population of 5,000 before its recent conquest.
66. A continual run of 264 kms without a break was too long for the train engineers, so N'Dande was selected as a stop although it was not exactly half-way between. (Note by Inspector General Bernard for S/Sec, January 10, 1885, ANF, DD-2/1094). A private entrepreneur ran



a buffet for express train passengers from 1888 until 1891. The water problem at N'Dande became acute during the trade season of 1888-1889 (Petyt report on DSL expenses, 1888-1889, FOM, Senegal XII,69, pp. 45-56). Transfer of the crossover point and workshops from N'Dande to Kelle was suggested as early as 1890 (Sallenave report of December 1890, FOM, Senegal XII, 71). but this was done only after 1899 (Chief of Public Works service to GG, January 11, 1899, SARS, DCF).

67. The poor quality of Tivaouane's water as compared to that of Thiès was noted in the Etienne report of March 31, 1887, FOM, Senegal XII,67, p. 36. This was one of the main reasons that Marmier selected Thiès over Tivaouane as the junction point for a spur into Baol and Sine (report of June 5, 1893, FOM, Senegal XII,81, Chapter II, since locomotives would need the purer water available at Thiès.
68. See report by the Chief of the Secretariat of the Government General, 1897, with the attached list of July 12, 1897, ARS, P40.
69. Rapports d'ensemble, GS to GG, 1912, folder 4, on public works by the Chief of Public Works, ARS, 2G12-8. Streets and roads maintained in and around St. Louis totalled 24.5 km; in and around Dakar there were 22 km.
70. See the joint report of 1912 on public works, ARS, 2G12-33, on the question of converting the administrators' trails into good feeder roads for the railroads, and Adam, p. 148. Roads predating the railroad are mentioned in Bois, Sénégal et Soudan, p. 17, as: a coastal road from St. Louis to Rufisque via Gandiole, Bétète, and M'Bidjem, a "route du Cayor" built in 1864 by Pinet-Laprade from Rufisque to Thiès and extended to N'Dande later by the Batignolles and a road from St. Louis to Loumpoul.
71. Noirot wrote in a report of March 1893, ANF, 148AP3, for instance, that the roads built by an administrator in Cayor in 1889 had already disappeared.
72. Report by the Chief of the Secretariat of the Government General, 1897, with attached list of routes built in the protectorate in the period 1892-1897, dated July 12, 1897, ARS, P40, (210 kms in Cayor, 369 kms in Thiès, 146 kms in Louga). There were, of course, many other routes less formally established in the

interior, such as a route of 12 days journey noted by Noirot from the Futa to the Saloum via the Ferlo and Niani (by Ouarnéo)--Noirot report of 1890 on the Djolof campaign, ANF, 148AP3.

73. Project by R. Eckman, n.d. [circa, 1897], with cover letter Descemet to "Mon cher Raymond," SARS, DCF.
74. The lines of thickets were also intended to stop sand dunes from encroaching onto the track. Later barricades of old traverses served for this purpose. See Etienne report of March 31, 1887, FOM, Senegal XII,67; note by Inspector General Fournié, May 8, 1890, FOM, TP; draft report by Petyt for 1892 through 1897, FOM, TP.
75. See Petyt report on DSL expenses, 1890, FOM, Senegal XII,69, pp. 48-49; DSL Chief of Operations to GS, August 20, 1891, SARS, DCF; project of arrêté-1891; Ibid.; Director of Political Affairs to Director Interior, December 21, 1891, Ibid., especially side-note.
76. Report by Surveillance Engineer for May 1889, FOM, Senegal XII,71, commenting on an influx of war refugees from the Saloum into Cayor, wrote: "Of our civilization the natives only appreciate one benefit, that of peace . . . but it is necessary to consider these groupings entirely transitory, except for some centers such as St. Louis . . . On the one hand, the natives don't make permanent and fixed structures that they could leave to their descendants; on the other hand, they don't adapt to the habitat that they have chosen so as to live here indefinitely. They do not have a love for planting over a long duration, which among civilized agricultural people attaches man to the soil. They live from day to day, and a small influence can arouse their nomadic or warrior instincts."
77. Majhemout Diop, Histoire des classes sociales dans l'Afrique de l'Ouest-Le Sénégal (Paris, 1972), p. 63, terms this act, the "Douki," a method of typically African for solving problems.
78. See Klein, Islam and Imperialism, pp. 165-167; note by acting Director Interior, August 28, 1886, ARS, 13G-41; Chief of Native Bureau to Director Interior, April 5, 1887, Ibid.; discourse of governor to General Council, in Moniteur du Sénégal, December 19, 1889,

no. 1774, p. 431.

79. The arrêté of January 15, 1890 only disannexed rural areas of the 1st arrondissement near St. Louis. Other rural areas were attached in 1902 to the Sénégalie-Niger in exchange for a strip of territory of one kilometer width on either side of the railroad track and large square zones around the escales. Attempts to collect the head tax in rural areas of Senegal--Gandiolo, Bargny, and in Serer None and Dioba country--led to all kinds of turmoil. Collections were resisted in some cases and had to be forgiven in others. E.g., see GS to S/Sec, December 7, 1889, ARS, 2B67.
80. E.g., see Klein, Islam and Imperialism, pp. 160-164, 168ff.
81. Paul Pelissier, Les Paysans du Sénégal, pp. 139-142.
82. André Huybrechts, Transports et structures de développement au Congo (Paris, 1970), pp. 72-76, 287-290.
83. There is a massive literature on this point. The pioneering work is Gunnar Myrdal, Economic Theory and Under-Developed Regions (London, 1957), see pp. 51-57. A good recent work is Thomas P. Melady and R. B. Suhartono, Development-Lessons for the Future (Maryknoll, N.Y., 1973), see pp. 78-79, 187-214.
84. The political report, GS to GG, 1st trimester-1908, ARS, 2G8-10, complained that shipments of millet needed in Saldé went overland by means of dioula traders rather than by railroad and then by the river. Into the 1970's herdsmen still preferred to drive livestock overland by foot to Dakar rather than using the railroad.
85. Although the DSL's categories for traffic statistics were too broadly defined to affirm this, one contemporary observer wrote that the kola trade flourished in Cayor only after the railroads' construction (see Paul Vigne, "La question du Soudan-Le chemin de fer de DSL," Bull. SGCB, 6, August 15, 1887, p. 483). For the general argument, see A. G. Hopkins, An Economic History of West Africa (London, 1973), pp. 243-253.
86. E.g., see political report, Niani-Ouli, April 1909, ARS, 2G9-36; monthly reports for Kedougou, 1912, ARS, 2G12-57.

87. For rail rates and fare structures in the French metropole, see Kimon A. Doukas, The French Railroads and the State (New York, 1945), pp. 147-158.
88. The original 1880 "cahier des charges" put such items as spirits, oils, wood, and sugar in 1st class at 0.24 francs per ton and per kilometer; wheat, rice, charcoal and wine in 2nd class at 0.20 Fr/t.km; coal, stone, salt, and sand in 3rd class at 0.13 Fr/t.km.
89. Arthur Hazelwood, Rail and Road in East Africa (Oxford, 1964), pp. 83, 88-94, gives a good idea of the complexity involved.
90. From 1892 the north-central stations of the line Kelle to Goumbo-Gueoul sent out a respectable 16% of total production shipped on the railroad. But the potential of that area became more evident after 1904 in response to higher prices (see Table 5).
91. According to a schedule ("bareme") approved December 4, 1897, copy in FOM, TP. This applied to shipments of at least 1500 kgs.
92. See excerpt P.V., Chamber of Commerce (henceforth CC)-Rufisque, April 24, 1894, SARS, DCF. (The two zones were to be Rufisque-N'Dande and St. Louis-N'Dande); P.V., CC-St. Louis, June 2, 1894, Ibid.; same, April 1, 1897, Ibid.; copy of DSL (Paris) to H elaut, March 10, 1895, SARS, DCF.
93. A problem commonly confronting enterprises with busy seasons or busy hours (such as a telephone company, to use another example with heavy investment in technical equipment). The solution is to spread out business more evenly with time. In the case of the DSL, the slack season served, at least, to repatriate European agents for long recuperative vacations in France.
94. Inspector Bideau's report of September 23, 1886, FOM, Senegal XII,66 compared the kilometric fares in Senegal with those in France and Reunion and recommended unsuccessfully that 1st and 2nd class fares be raised in Senegal to levels comparable to the fares in colonial Reunion. The fares were:

	<u>France</u>	<u>Reunion</u>	<u>Senegal</u>
1st class	0.123 Fr/km	0.25 Fr/km	0.12 Fr/km
2nd class	0.092	0.15	0.08
3rd class	0.067	0.06	0.055

First and second class passengers were also more likely to benefit from reduced (military, clergy, etc.) and round-trip fares.

95. GS to S/Sec, March 9, 1890, ARS, 2B67, which recommended the DSL Chief of Operations Hélaut for the Legion of Honor. In 1897, the DSL helped the colony to prepare the new approaches to a new, metallic pont Faidherbe at St. Louis. In 1907 the government accorded a contract for an electrical generating plant in Dakar to a company run by DSL officials.
96. See draft of note by Binger to Inspector General of Public Works, Ministry of Colonies, November 7, 1899, FOM, Senegal XII,111; note by Bricka, October 5, 1899, FOM, TP; report by Valantin to General Council, June 12, 1899, FOM, TP.
97. The report by Bideau, September 23, 1886, FOM, Senegal XII,66, noted that DSL expenses were six times as high than the predictions of the Walter report. The report by Petyt on DSL expenses 1888-1889, FOM, Senegal XII,69, exposed that the Batignolles, for instance, was still drawing money from the French treasury indirectly by charging the DSL high rates for renting a short rail spur on the large jetty at Dakar. Members of the interministerial DSL Verification Commission were particularly incensed that the Batignolles had not furnished its subsidiary, the DSL company, with a reserve fund for current expenses out of the government-furnished subsidy. Instead, the Batignolles was covering only a small part of the DSL's cost of borrowing; the government covered the rest through its guarantee of DSL operating expenses (see Reg. 31, FOM, TP, especially annex to May 17, 1886 session of Verifications Commission, pp. 124ff).
98. See Bideau report, September 23, 1886, FOM, Senegal XII,66; Etienne report, March 31, 1887, FOM, Senegal XII,69; Petyt report for 1887, Ibid. But by 1890, Petyt felt that the number of DSL agents in Senegal was too small for effective service (Petyt report on DSL expenses, 1888-1889, Ibid.).

99. Note by de Traz to S/Sec, June 23, 1890, FOM, TP, pp. 17-18.
100. On reconstruction of the line, see Petyt report for 1887, FOM, Senegal XII,69, pp. 60ff; Petyt report on DSL expenses, 1888-1889, Ibid., p. 55.
101. The Sentence Arbitrale and the guidelines followed by the arbitration panel are in a booklet published by the French Ministry of Colonies, Documents relatifs au chemin de fer de Dakar à St. Louis (Paris, 1914), pp. 45-46.
102. Draft report of the Commission on the DSL, October 1, 1900, FOM, Senegal XII,75bis. The company's economy bonus was applicable only to the operations formula (4500 + R/2) and not to maintenance; the company received only 2% of any economies in the first year; the bonus then rose by an additional 2% each succeeding year until a maximum of 10%, henceforth applicable, was reached.
103. draft of note by Binger to Inspector General, November 7, 1899, FOM, Senegal XII,111 (cited above).
104. Boutteville report to Minister of Colonies (henceforth MC) August 4, 1900, FOM, Senegal XII,75bis; the text of the convention of 1900 is in Ministry of Colonies, Documents ... DSL, pp. 57-62.
105. See the newspaper clippings on DSL stock in ANF, 65AQ/ E-267; e.g., Guide du Capitale, December 25, 1902, and Pour et Contre, October 23, 1904. Originally there were exactly 10,000 shares of DSL stock of a nominal value of 5 million francs of investment. On technical grounds, the government forced the company to ante up an additional 80,818 francs of investment capital, so that now there were 10,161.6 shares outstanding.
106. Le Rentier, December 27, 1907, ANF, 65AQ/ E-267; Le Globe, October 25, 1906, Ibid.
107. "Notes Utiles," Le Mouvement Financier, August 24, 1907, p. 540, ANF, 65AQ/ E-267.
108. "Etudes Financieres," Revue Minière, September 24, 1908, ANF, 65AQ/ E-267; La Revue Financière, September 1, 1910, Ibid.; Revue Minière, November 9, 1911 Ibid.

109. "Etudes Financières," Le Bulletin Financier, May 15, 1910, ANF, 65AQ/ E-267; "Dakar a St. Louis," Finance Coloniale, February 25, 1911, Ibid.; Journal des Mines et des Travaux Publics, February 24, 1912, Ibid.; Revue Economique et Financière, May 10, 1913, Ibid.; F. Jourdier, "Le rapport sur l'emprunt de l'AOF- II," La Dépêche Coloniale, March 29, 1913, no. 573, p. 1.
110. By late 1908, the Minister of Colonies was already unhappy with the arrangement allowing the DSL to run the newly-opened section of the Thiès-Kaye line. See copy of MC to Governor General of French West Africa (henceforth GG), December 23, 1908, FOM, TP.
111. Excerpt of P.V., CC-Dakar, May 20, 1910, ARS, 043. See also Conseil Général, 1909, December 19, 1909, pp. 616-620; MC to GG, March 10, 1910, ARS, 043; P.V., CC-St. Louis, May 21, 1910, ARS-L; Conseil Général, 1910, May 31, 1910, pp. 68-74, June 8, 1910, pp. 241-249.
112. GS to GG, April 11, 1911, ARS, 043. See also the report on DSL workers, January 20, 1911, Ibid.
113. DSL to MC, September 8, 1910, SARS, DCF; Director General of the Union Colonial Française, Chailley to MC, January 11, 1911, Ibid.

## CHAPTER IV

### PENETRATION AND ECONOMIC DEVELOPMENT-THE THIES-KAYES

If the Sudan is still today "a beautiful house without doors," our duty is to give it the doors it lacks and not to destroy the house.

-J. Van Vollenhoven, 1917<sup>1</sup>

The completion of the colonial conquest in West Africa by 1900 heralded a new era of railroad building in the French colonies of the region. To some extent, the projects of this new phase of railroading in the decade before World War I were simply the outgrowth of previous efforts. An easy access to the Niger river valley from the littoral, expansion of the area's export commerce, political consolidation under French rule, and aggrandizement of the port of Dakar--targets already set during the period of inception from 1878 to 1882--were also the major objectives pursued in this era, while the already existing DSL and Kayes-Niger railroads, moreover, had to be taken into account in future plans. The railroad promoters of the earlier era had been recklessly overoptimistic about the prospects for development through railroad building. Having been fed for a generation on colonialist propaganda glorifying the pioneering colonial railroad builders, many of the officers and administrators of the new era also clung, at least at the outset,



to much of the earlier confidence in the ability of the railroad to foster--indeed create--rapid economic growth.<sup>2</sup>

Nevertheless, in this new era it was no longer feasible, or at least as easy, to finance railroad construction from tax money raised in the metropole. According to the financial law of April 13, 1900, the colonies themselves became responsible for their own budgets--meaning that any new rail construction and rail operations would have to be funded ultimately from revenues collected in the colonies.<sup>3</sup> Even more significant for West Africa was the transformation from 1902 to 1904 of the Government General of French West Africa into a powerful federal agency of administrative and political authority interposed between the metropole and the individual colonies of the region. Itself assuming direct control over certain key federation-wide matters, the Government General--jealous of its custody of the federation's general interests and potent in its budgetary and administrative powers--became the main driving force in designing and implementing an ambitious series of public works programs of port development and railroad construction aimed at penetrating into the hinterland of French West Africa.<sup>4</sup>

In this era of colonial consolidation and fiscal responsibility, any proposed railroad projects would be scrutinized much more carefully than during the earlier era of military expansion, especially for their financial pru-

dence and their prospects for carrying commercial traffic. Thus, it becomes more difficult in this era to distinguish in contemporary documents advocating a particular course of action between overlapping economic and political motives-- although political considerations seem in reality to have always been foremost. An official interest in economic development and political consolidation could and did shade off into a genuine concern for the social well-being, immediate and future, of the African populations who were being directly affected by the government's policies. Nevertheless, in line with the dominant colonialist belief that an expanding export commerce would form the basis of African prosperity, governmental efforts to foster regional development concentrated on developing the overseas trade-- efforts which if successful would also swell the customs receipts that funded the Government General itself.<sup>5</sup>

As in 1880, governmental authorities held that the key to regional prosperity lay in opening up the Sudanese heartland to the export trade with a network of railroads linked to coastal ports. As a vital, integral part of this new venture in colonial railroad building, a projected railroad between Thiès and Kayes was intended by government planners to perform a variety of functions both locally and regionally. Unfortunately, these ambitious plans for a grandiose regional network of railroads into the interior

were to be carried out only partially--leaving a scattered handful of unfinished, isolated rail segments lancing inland from several points on the littoral. The Thiès-Kayes railroad, although forming an impressive portion of the longest and most important of these segments, also proved to be a more fragile economic instrument than the planners had anticipated.

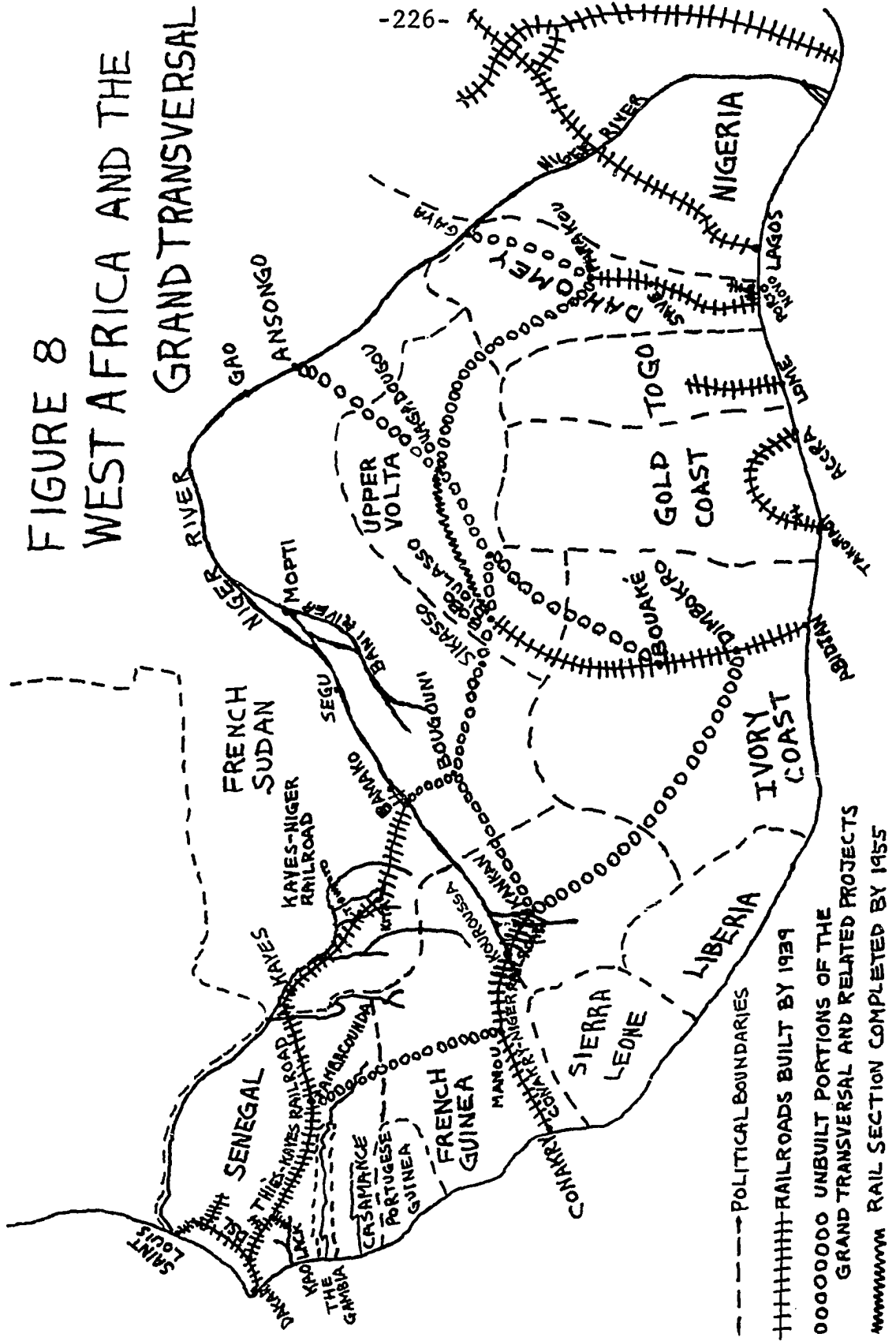
The "Grand Transversal" Formed at the crest of military conquest in 1895 to oversee a loose federation of French colonies, the Government General of French West Africa truly became the primary agency directing political and economic affairs in these colonies only after it had acquired its own autonomous, stable financial footing in 1904.<sup>6</sup> Aside from its crucial role as the chief political authority of French West Africa, the Government General also attended to functions of general interest to the entire federation, such as education, justice, and public works. The Government General's monopoly of the federation's customs receipts enabled it to redistribute essential services and developmental projects more equitably among richer and poorer colonies, and it could finance public works requiring heavy investment of capital far more easily than any individual colony because of a superior ability to raise large consolidated loans in the metropole for these projects.

Featuring some programs of drainage and sanitation, of public building construction, and of riverway clearance, the successive major public works loans floated by the Government General concentrated particularly on the construction of commercial ports along the coast and on railroads of penetration leading from these ports to the vicinity of the Niger valley deep in the Sudanese interior.<sup>7</sup>

A master plan for a comprehensive program of railroad construction in the territory, apparently originating in the Ministry of Colonies around 1902 and henceforth associated with the incumbent Governor General Ernest Roume (1902-1907), centered primarily on construction of a long strategic railroad of penetration starting from the Dakar-St. Louis railroad and running eastward through Senegal; then over the Kayes-Niger railroad to Bamako; and then straight across the region within the Niger bend to Ansongo, a point on the Niger below Gao.(see Figure 8).<sup>8</sup>

Designed perhaps partly in reaction to renewed contemporary speculations about a Transsaharan or Transafrican from Algeria to West Africa, this Transsudanian "grand transversal" was intended to be the primary line of French penetration into the Sudan, opening up the Niger bend region, especially, to French economic exploitation. Other rail lines penetrating inland from several

FIGURE 8  
WEST AFRICA AND THE  
GRAND TRANSVERSAL



-226-

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French colonies on the southern littoral would be attached at different points to this grand transversal, thereby welding the disparate parts of French West Africa together politically and economically into a solid unity. This grandiose network would bind together the colonial federation by facilitating operations of the government's administrative machinery in the interior and by enabling troops to be transported rapidly in case of need.<sup>9</sup> The scheme, however, was also designed in large measure as a major weapon for economic warfare with rival powers.

A railroad already begun by the colony of Guinea from Conakry, a railroad also begun already from Cotonou in Dahomey, and a line projected to be run from the littoral of the Ivory Coast toward Mossi country--all of which were slated to be grafted onto the main transversal--had been deliberately traced in such a manner as to compete with the railroads and rivers of foreign colonies in attracting the products of border areas toward French ports.<sup>10</sup> The ministry also contemplated a "petite ceinture" railroad nearer the coast linking Senegalese railroads to those of Guinea and the Ivory Coast in such a way as to closely encompass the frontiers of the foreign colonial enclaves lying between. A ministerial letter of December 1902 to Roume explained that:

The foreign colonies would be narrowly hemmed in by

the network in such a way as to paralyze their economic development in their respective hinterlands and to drain the products of the soil . . . to the French coasts.<sup>11</sup>

At the same time the grand transversal was clearly designed to magnify the role of Dakar as the political and economic linchpin of the federation by making it the main port for exporting products from the Sudan. Dakar had already been designated in 1898 as the site of a major strategic base for the French fleet and had become the seat of the Governor General after 1902. Both the Government General and naval authorities were now interested in seeing Dakar change from a mere port of call for ocean liners into an active commercial port, attracting thereby the accessory facilities and amenities that would facilitate the smooth functioning of the naval base and the administrative bureaus.<sup>12</sup>

At first glance, prospects for expanding shipping traffic at Dakar appeared bright because the impending completion of the Kayes-Niger railroad, in 1904, seemed to promise more commercial traffic for Dakar as the railroad funnelled a much larger flow of exports from the Niger valley via the Senegal river toward the Senegalese ports. Yet, on the one hand, it was by no means certain that this traffic would indeed bypass the decaying port of St. Louis to flow down to Dakar via the DSL railroad. On the other hand, it was not that certain that the KN could really

generate that great a volume of traffic from the Sudan as long as the unreliable, intermediate link of the Senegal river was utilizable for only four months of the year at best. Indeed, despite the outlay of so much blood and treasure since 1881 to complete the KN, despite the personal efforts of so many prestigious colonial officers (among them Gallieni and Joffre), even the economic viability of the KN's operations seemed questionable as long as its long-haul export traffic was dependent on the capricious river.<sup>13</sup> An all-year grand transversal railroad that linked Dakar directly to the KN, via the DSL, and even entered deeper into the Niger bend, promised to resolve both problems. But, there were certain drawbacks to this approach.

The projected junction at Bougouni of the grand transversal and the Conakry-Niger railroad, for instance, would have been 1400 kms from Dakar and only 950 kms from Conakry. Even before this junction was made, produce transported on the Niger river might easily be exported southward to Conakry from Kouroussa via the Conakry-Niger (CN) railroad rather than passing westward toward Senegal via the KN line. To prevent this from happening, the cost of freight shipped from Bamako to France via Dakar was equalized to that shipped to France from Kouroussa on the Niger via Conakry. This was done by lowering freight rates on



the KN to unremunerative levels, while rates on the CN railroad were deliberately raised despite the difficulties the CN was having in generating sufficient traffic for its line. Ostensibly, this arrangement was meant to assure the KN and CN railroads their "respective spheres of attraction on the Niger river." But obviously the real motive was to secure passage of KN exports westward toward the coast of Senegal.<sup>14</sup>

The choice of the longer rail line as the main axis of penetration to the Sudan, however, added to the administration's burdens. Successful growth of the export trade by means of a long rail line of penetration would really depend on the rates that the railroad would charge for delivering produce to the coast and vice-versa. Rates set low enough to ship exports profitably over long distances might be too low to cover the railroad's transportation costs. To solve this, the administration intended to resort to the versatile expedient of a "degressive" freight rate structure, which, unlike rates strictly proportional to distance (such as on the DSL), would let rail charges for certain goods rise more slowly as the shipping distance increased by means of a sliding-scale of levies for different mileages travelled by rail. In so far as commerce was concerned, degressive rates (known as "tapering" in England) would telescope long export distances into apparently

"shorter" runs. But since in reality the railroad had to cover its own transportation costs, the viability of a degressive rate scheme would depend either on any compensating economies arising from long distance traffic or on the balancing of any losses incurred in low-rate long-distance traffic with surpluses earned on other, more profitable elements of traffic on the line. The problem was not as simple as the planners imagined.<sup>15</sup>

The Thiès-Kayes project A rail line bridging the gap between the DSL and the KN was an obvious first step in creating the projected grand transversal. But first, this proposed railroad link had to be justified as more practicable than the existing connection via the Senegal river, and once it was justified a particular path through Senegal would have to be selected, and a builder would have to be chosen.

The scheme for a railroad link passing through Senegal had to contend at this time with a rival plan for simply improving the navigability of the already-utilized Senegal river link. Of obvious direct benefit to St. Louis at the mouth of the river, this longstanding idea found substantial backing among St. Louis's merchants and from Senegal's deputy to the National Assembly, while also enjoying support in the metropolitan press.<sup>16</sup> Considered a cheaper investment than a railroad, the river plan also promised to assure

cheaper freight hauling rates by water than was possible by rail; and at first the new Governor General Roume appeared to be giving equal consideration to this Senegal river scheme.<sup>17</sup> Studies of a barrage and lock system on the Senegal river were indeed undertaken by military officers during the period 1902-1904, and an initial project for a short rail spur from Kayes downriver to Ambidedi was approved in 1904 with little question since it could be used equally well for a mixed river-rail or an all rail route.<sup>18</sup> Despite governmental disclaimers, the two projects were of course competing for the same limited construction funds and the same potential export traffic--a rivalry underlined by the sharp criticisms penned by the officer in charge of the river project against the railroad.<sup>19</sup>

Studies for the railroad began modestly enough with Roume's simple request to Paris in June 1902, shortly after his arrival in Senegal, for a loan of two military engineering officers to reconnoiter possible traces for a connecting railroad between the KN and either Louga or Thiès on the DSL.<sup>20</sup> The ministry apparently saw the question in wider terms, for it assigned the duty of exploring a possible trace between the DSL and the KN to no less a figure than the director of the Kayes-Niger, Colonel Rougier, then visiting Paris.<sup>21</sup>

The shortest trace to Kayes would have started from

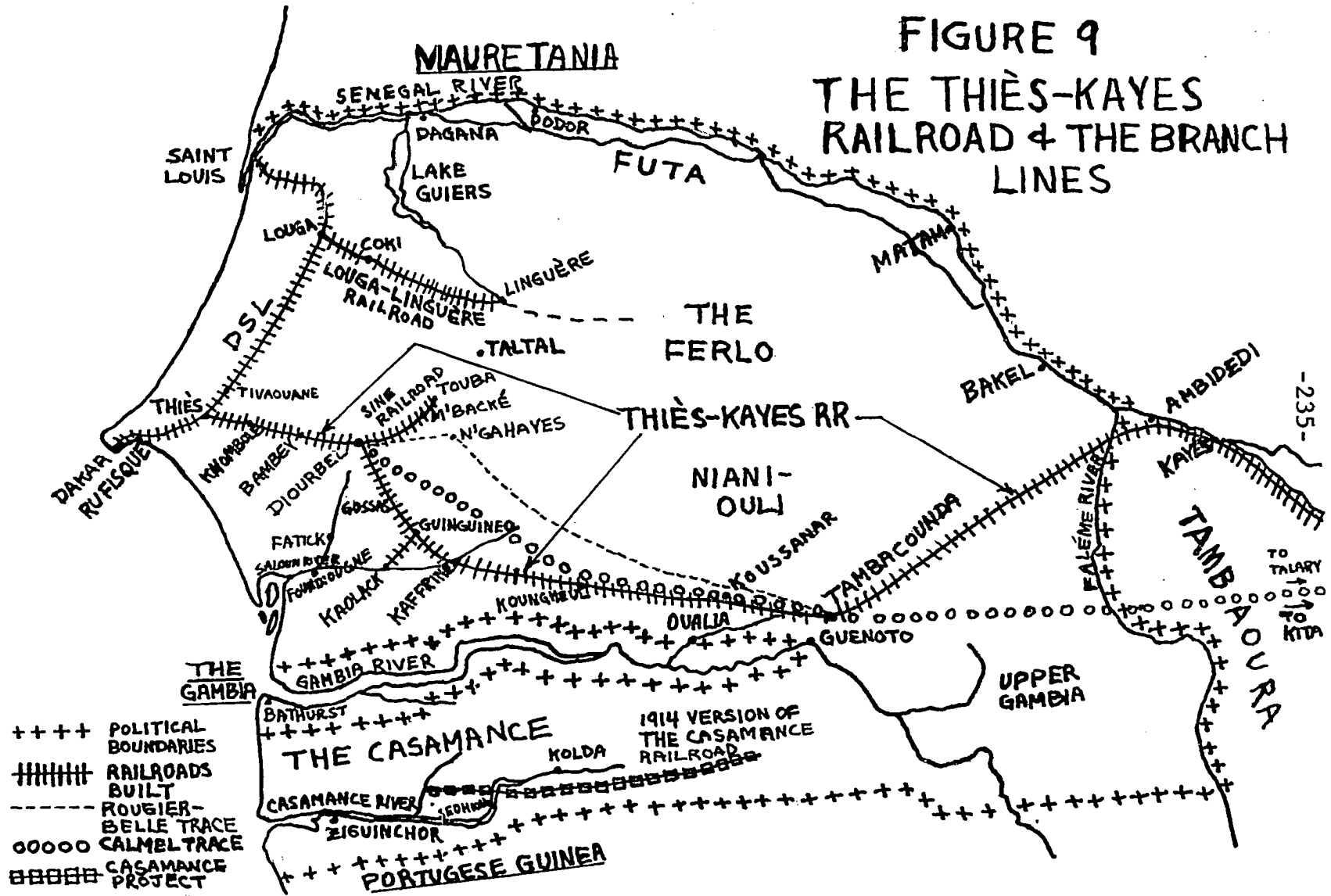
Louga, but in a letter of January 1903 Roume ordered Rougier to explore only a line of penetration starting into Baol from Thiès, which, unlike one from Louga, would probably generate a substantial local traffic.<sup>22</sup> Not only would the export trade itself therefore undergo further local development in Senegal, but the railroad of penetration would be assured a profitable local traffic that generated sizeable receipts to help finance other railroad operations. Roume chose Thiès over Tivaouane partly for the advantages of the site and partly because this juncture would bring the new line closer to Dakar.<sup>23</sup> After following Marmier's trace of 1893 to Bambey and extending it to the vicinity of Diourbel, the direction of the projected line and its junction point on the KN was left to the explorers' findings, with neither a direct-line trace to Kayes nor one to Bakel ruled out at that point. Roume urged, nevertheless, that beyond Diourbel the rail trace ought to dip southward in order to avoid the Ferlo barrens and to penetrate into border areas that, at the time, were conducting most of their trade with the British Gambia. The purpose was, of course, to siphon the products of these regions toward French ports; but Roume also cautioned Rougier not to allow the trace to pass so close to the border that traffic on the railroad could be diverted inversely toward the Gambia river.<sup>24</sup>

The exploratory studies of the railroad trace went well. Rougier himself scouted ahead, making a rapid reconnaissance of the most likely potential route from Thiès to Kayes while a larger expeditionary party slowly followed in his track surveying the trace carefully.<sup>25</sup> The so-called Rougier-Belle trace crossed through well-populated parts of Baol, passing by Diourbel and N'Gahayes; then swung sharply southward toward Tambacounda skirting areas bordering the Gambia; and then turned north in a direct bee-line to Ambidedi (see Figure 9). This trace, which was favorably received in Paris by the governmental Committee of Colonial Public Works in July 1905, also prevailed over the river project when it became apparent that the waterway would be usable for only part of the year even after extensive, costly construction work.<sup>26</sup>

This decision having been taken, it seemed natural that the DSL company, which had almost been granted the concession for a Thiès-Fatick spur only five years before, should now be awarded the franchise for building at least the first 140 km section of the projected line from Thiès to the vicinity of N'Gahayes.<sup>27</sup> Construction by a private firm like the DSL also seemed logical, given the precarious condition of the new Government General's financial situation at a time when it was floating its first major loan.

Nevertheless, discussions between the DSL company and

# FIGURE 9 THE THIÈS-KAYES RAILROAD & THE BRANCH LINES



-235-

TO TALARY  
100 KM  
KTR

the French government did not go well. The DSL was demanding that the Government General guarantee a bond issue to finance construction, agree to a very favorable financial formula governing rail operations, and give the company a virtual veto over rates and fares.<sup>28</sup> Negotiations had not advanced very far when the Government General's Conseil du Gouvernement, meeting in May 1906 to consider a second public works loan for French West Africa, essentially scuttled the DSL's bid by voting to borrow an additional 10 million francs for construction of the first section of the railroad with the federation's own resources and personnel.<sup>29</sup>

Seemingly a contradiction of conventional theories about the role of private investment capital in developing the colonies, this action provoked a lively debate in French colonial circles.<sup>30</sup> It was, nonetheless, a logical outgrowth of past difficulties that had cropped up whenever private firms had undertaken colonial railroad building in such diverse places as Indochina and French Guinea. The colony of Guinea, for instance, had been obliged in 1902 to take over construction of the Conakry-Niger railroad, begun only in 1900, even while compensating the inept private builder with almost 2.8 million francs.<sup>31</sup> In Dahomey, the railroad's concession contract had to be revised radically in 1904 with an outright payment to the entrepreneur of

almost 12 million francs.<sup>32</sup> One common problem was the difficulty of recruiting African labor for construction work, opening the colonial government to litigation in case insufficient government recruitment was blamed for construction delays. Not less important was the Government General's determination to retain control over rail freight rates, which might be manipulated to spur the export trade more easily if not limited by a private firm's need to show a given profit on invested capital.<sup>33</sup>

The DSL's exclusion from construction of the new line was certainly also due in part to the successful efforts of groups of military engineering officers formerly associated with construction of the KN in the Sudan and the railroad in Guinea to secure an important role in constructing the Thiès-Kayes. With the conquest accomplished and a civilian Government General firmly in control of the federation, the political ascendancy of the military in important parts of West Africa was over.<sup>34</sup> Colonial military officers, however, were apparently still not prepared to relinquish the enterprise of colonial consolidation entirely to civilians.<sup>35</sup> Previously, only those unprofitable colonial construction projects, where private capital did not care to venture, like the KN railroad, had been entrusted to the military engineers. Now these officers were arguing that the government should also undertake the



more profitable colonial projects, such as the line from Thiès, the fruits of which could be used later to finance less profitable projects. Modification of a projected rail trace while construction was in progress, it was also reasoned, would be far easier if there were no prior commitments to a given route because of a contract with a private firm.<sup>36</sup>

Construction of the first part of the line from Thiès to Diourbel was begun enthusiastically by the Government General in late 1907 along the Rougier-Belle trace.<sup>37</sup> With few physical obstacles intervening to limit the ultimate direction of the trace between Thiès and the KN, however, alternatives were soon being considered. A trace to Kayes over barren terrain by way of Bakel had been rejected easily in 1903, and a trace going directly to Rufisque without using the DSL line had also been considered and rejected in 1906.<sup>38</sup>

Calmel's suggested variant aroused much more interest from 1907. The first part of the variant, from Diourbel to Tambacounda, passed south of the Rougier-Belle trace with a straighter line--shortening the track mileage slightly while dipping into regions where water was presumably easily available. From Tambacounda Calmel's trace ran directly eastward to Kita via Talary, bypassing the section from Kayes to Kita on the KN line, and thereby shortening

the distance to the Niger by 69 km.<sup>39</sup> The direct line to Kita would have actually entailed more construction expense because more new track would have had to be laid and a chain of hills would have had to be crossed at Tambaoura beyond the Falemé river. On the other hand, it would have also reduced future railroad operating costs and freight charges with a shorter line to the Sudan, while bringing the railroad into more fertile territory near the gold-fields of the Falemé. The adoption of this trace was resisted energetically, however, by both the governor of Upper Senegal-Niger and the director of the KN, who were defending the commercial importance of the town of Kayes and of the section of the KN that would have been bypassed by the Calmel trace. Eventually, the ministry agreed with them and rejected the Tambacounda-Talary variant.<sup>40</sup>

Smaller modifications made on the trace between Diourbel and Tambacounda, however, were highly significant. The final line adopted for this section dipped even farther south than Calmel's trace, bringing the railroad closer to the Gambia river and only 22 km from Kaolack on the Saloum river. While some merchants were concerned that the railroad's traffic could be diverted to the nearby British Gambia, the DSL and some merchants were also surprised to find that it might now exit by way of Kaolack.<sup>41</sup> Engineering officers charged with construction of the railroad explained that

the trace had been redrawn southward in order to pass through areas where water was easier to find. A diversion of railroad commerce into the Gambia, was unlikely, they claimed, because the high mortality of the pack animals near the river limited the volume and range of traffic to it. Rail traffic existing via Kaolack admittedly now became inevitable, but it was argued that Dakar and Rufisque would lose little traffic since maritime shipping to Kaolack was limited by the difficulties of navigation along the Saloum river.<sup>42</sup>

In reality, the new trace profoundly altered the character of the railroad.<sup>43</sup> The argument about water availability seems specious in retrospect in view of the difficulties which the government experienced later in supplying water at Gossas and Guinguineo.<sup>44</sup> The trace was almost certainly redrawn to attract more trade from areas bordering the Gambia; but at that the government was only able to stem the flow of produce from the vicinity of the rail line toward the Gambia itself by introducing special, low freight rates for produce shipped to Kaolack from the rail stations between Kaffrine and Tambacounda.<sup>45</sup> It is indeed hard to escape the notion that the rail trace had really been displaced toward Kaolack not so much for any water supply problems as to reduce the new railroad's dependence on a not always cooperative DSL management, by giving the Thiès-

Kayes its own direct access to a coastal port.

By 1909, plans were being drawn up to expand Kaolack's port facilities and to link the port to the Thiès-Kayes with a short rail spur from Guinguineo. By virtue of its geographic position and the new railroad, Kaolack was in a position to become the natural port for the rail line from Diourbel to the Niger.

The problem might have taken an even more interesting turn economically had France only controlled the Gambia, enabling a even shorter rail line from the Niger to terminate on a superbly navigable exit to the sea. However, various French attempts to obtain the Gambia never succeeded. The Anglo-French treaty of 1904 had indeed accorded to France navigation rights on the Gambia, inspiring various projects for a major French port on that river; but the port and a Gambia-Niger rail link were rejected finally as too advantageous for the economy of the British colony.<sup>46</sup>

Construction of the TK The initial section of the Thiès-Kayes within Baol was an immediate success as soon as it opened. Merchants flocked into Baol to open business at the escales forming near the new TK stations, which were soon shipping out large volumes of peanuts. The DSL company particularly benefited with this development, not only from the additional traffic flowing on its old line but from a two-year contract with the Government General that turned

over operations on newly-opened sections of the TK line to the DSL.<sup>47</sup> Entranced by the profits from its share of the new line's revenue, the DSL and its parent company, the Société des Batignolles, indeed hoped for a time to obtain the concession to build succeeding portions of the Thiès-Ambidedi beyond the first 140 km section already undertaken by the colony.<sup>48</sup>

However, these hopes were soon disabused. Buoyed by the striking commercial success of the first section of the Thiès-Kayes and by the solidity of the federation's finances, Governor General Ponty decided instead in late 1909 that the government itself should continue to build succeeding portions of the line. A new loan of 14 million for constructing the second section was proposed, and it was duly authorized by the National Assembly in February 1910.<sup>49</sup>

Moreover, with criticism mounting against the DSL company's deteriorating service, it was also decided in early 1910 that the company's two-year contract for operating the Thiès-Diourbel rail section would not be renewed. To run the TK line the government created instead, in 1910, its own special agency with headquarters and supporting services at Thiès. Placed ostensibly under the command of the governor of Senegal, this new government service, whose budget formed a special annex to the general budget of French West Africa, functioned autonomously, in reality,

under the guidance of the Governor General.<sup>50</sup> By 1911, Ponty was already asking (within a new public works loan of 150 million) for 25 million francs to complete the last section of the Thiès-Kayes line and even for 15½ million francs to start on the next section of the grand transversal from Bamako to Bougouni.<sup>51</sup>

However, subsequent construction of the Thies-Kayes proved more difficult than anticipated. Originally it was thought that the entire Thiès-Kayes line (625 kms to Ambidedi) would be completed within seven years, and indeed the station at Diourbel (Km 79) was opened as early as January 1909.

Unfortunately, the farther inland construction proceeded, the more slowly it seemed to go and the more costly construction expenses became. The first section of 140 kms. was only completed at the end of 1910, and Malème-Hodar on the second section at Km 211 was only opened in March 1912. Moreover, meager profits from a disappointingly small traffic on operating portions of the TK in 1911 and 1912 provided few extra funds to finance new construction.<sup>52</sup>

The proposed loan of 150 million, which included funding for further TK construction, soon ran into difficulties in the National Assembly, where voices were raised against the management of both TK operations and new

construction. Work on the TK had to be halted for lack of money. Only after William Ponty reluctantly satisfied some parliamentary critics by including projects for improved ports at St. Louis and Conakry in the omnibus public works loan, was approval finally obtained in December 1913 and work resumed on the TK in March 1914.<sup>53</sup>

The outbreak of war in Europe found the TK track not even as far as Tambacounda (Km 395); but construction of the TK line continued into 1917 with the meager resources at the colony's disposal because the unfinished line was also proving very useful in shipping recruited African troops from the Sudan to the trenches in France. A system of supply and mail convoys was organized to bridge the gap between the end of the line and Ambidedi--a run made regularly by automobile from 1917.<sup>54</sup>

The Grand Transversal Unfulfilled Nevertheless, it was clear even before the end of the war, that the program of railroad construction was a shambles. Rail line construction, other than on the TK line, had necessarily been postponed during hostilities, leaving at war's end only a disjointed network of unconnected, stubby limbs pointed uncertainly toward the Niger valley. The economic strain imposed during the war on the metropole, in obliging her to draw more heavily on the colonial empire for support, had exposed all the more clearly the economic backwardness of

colonies such as those of French West Africa. Thus, the postwar period brought renewed interest in completion of a consolidated rail system for French West Africa, not only because it would allow greater access to the Sudan, which officials perceived as a rich storehouse to succor a war-weary France, but also because it promised to spur economic development in the region.<sup>55</sup> Some voices, however, were already questioning the emphasis of the earlier program of railroad construction on an east-west strategic transversal.

From at least 1917, a proposed major railroad of penetration to the Niger bend from the Ivory Coast began to attract increasing attention because its shorter length promised lower rail shipping costs for Sudanese exports.<sup>56</sup> Lines run inland from this direction would have had the added advantage, as Cosnier noted in proposing a great, two-pronged "V" network of rail lines from Abidjan, of linking existing population concentrations in the interior in such a way as to capitalize upon and reinforce existing local and long-distance currents of African domestic commerce.<sup>57</sup>

Oriented generally in north-south directions because of the greater possibilities of crosswise exchange among the differing climatic and vegetative zones of West Africa that lie east to west, the currents of domestic commercial traffic presented a singularly favorable opportunity to



encourage healthy economic growth in the region. Not only might the growth of the domestic trade have fostered the development of greater interregional exchange and greater linkage between regional sectors of production (e.g., rice grown in the Sudan replacing rice imported from Indochina or cattle meat shipped to the forest regions), but this commerce would indeed have supported the growth of the export trade rather than supplanting it. In essence, domestic rail traffic, whether passenger or freight, local or long-haul, was likely to have generated additional rail revenues. With these additional revenues, it would then have been possible to set certain long-haul rail rates at lower levels in order to stimulate a greater long-haul export traffic.

Postwar plans did indeed pay increasing attention to construction of a new port at Abidjan and a long rail line of penetration from the Ivory Coast. Nevertheless, with so much already invested in the port of Dakar and in the Thiès-Kayes railroad--a project so near completion--colonial authorities evidently opted to continue emphasizing this east-west approach as the easiest and quickest way to reach the Sudan.

Governmental efforts were necessarily limited in the postwar era by budgetary considerations. The Minister of Colonies, Albert Sarraut, had indeed called in April 1921

for a renewed program of colonial public works for development ("mise en valeur"), which included much of Roume's prewar program for West Africa.<sup>58</sup> Officials in French West Africa realized, however, that they would have to settle for a scaled-down effort, which one official hopefully characterized as a "programme partiel et d'attente."<sup>59</sup> The funds still authorized for the prewar loan of 167 million were applied only to the most urgent projects in the program of 1913, such as the completion of the TK and port facilities at Dakar, while heavier emphasis was placed on the extension of the Ivory Coast's railroad inland. Other projects, like the Bamako-Bougouni section of the grand transversal, however, were postponed indefinitely.<sup>60</sup>

The scheme for a grand transversal was in effect being shelved, never to be completed. But the Government General was nonetheless clinging to the notion of an east-west line of penetration to the Sudan, while now concentrating on the agricultural development of the great interior delta of the Niger, whose products were to be exported via Dakar by a completed Thiès-Kayes railroad.<sup>61</sup> Thus, the great imperial route from Thiès to the Niger continued to be emphasized for political and strategic reasons, with the line's projected financial viability based on the optimistic French expectations for quick successes in the agricultural development of the Niger river bend.

Work on closing the gap on the TK was again being pushed in 1920, though with costs far exceeding the original appropriation of 25 million. The completed TK railroad was fused with the KN in January 1924.<sup>62</sup> Nevertheless, despite sustained governmental efforts in the Niger valley in the 1920's and 1930's, the results in production were disappointingly meager.<sup>63</sup> The agricultural potential of the Niger region had been grossly misunderstood by government officials, and the completed Thiès-Niger railroad of penetration had itself become a source of difficulty.

Growing pains Operations of the TK line by the colonial government had never really gone smoothly. When it took over operations on the TK in late 1910 from the DSL, the Government General had been obliged to purchase new rolling stock quickly and to organize hastily a new government agency for TK operations, whose top posts were soon largely staffed by military officers.<sup>64</sup> It is understandable therefore that initial operations on the TK were plagued with a number of misadventures, which raised much criticism in 1913 during the parliamentary debates on the loan of 150 million.<sup>65</sup> Merchants hastening to expand their commercial operations along the new line particularly resented the TK's frequent delays in moving freight.

During World War I, service on the line was reasonably well maintained, considering the economic dislocations

due to the war (loss of foreign markets for peanuts, difficulty of obtaining replacement parts and coal); but by the end of the war, the TK's worn equipment was in a sorry state.<sup>66</sup> The DSL railroad, facing similar problems, improved its service noticeably by 1922.<sup>67</sup> However, with a much longer line, with heavy construction underway at the far end of the line, and with only inadequate, rudimentary repair facilities available at Thiès, the TK was unable to recover as quickly. In 1921 the TK attempted to stimulate commerce and traffic with lower freight rates, but from 1922 to 1924 the railroad's inadequate rolling stock was unable to keep up with the growing traffic. Merchants were particularly irate that their peanuts were not being shipped before the arrival of the season's rains spoiled the exposed produce.<sup>68</sup> Already under fire for underestimating the costs of construction of the final section of the TK, Pierre Ballabey, director of the TK since 1910, was blamed for the sad situation, and his ouster planned in 1924.<sup>69</sup>

The fusion of the TK and KN in 1924 considerably worsened the plight of the railroad, and led to a disastrous transportation debacle in 1925. The thin rails, steep gradients, and sharp curves of the KN section obliged the railroad service to use four times as many locomotives to haul a given weight load on the KN than on the better-built TK section. Thus, even though little produce could actually

be shipped from the Sudan in 1924 and 1925, the burdens of the new long-haul service on the TKN, requiring as it did additional rolling stock (especially on the badly built KN section), impaired the already-strained local service on the Thies-Kayes section of the TKN.<sup>70</sup> The bumper crop of 1924 simply overwhelmed a now overextended TKN, forcing some merchants to beat the rains in 1925 by shipping peanuts to port overland by slow-moving pack animals.<sup>71</sup>

The TKN's immediate troubles stemmed largely from an inadequate rolling stock and insufficient personnel, and these could be remedied with purchases of new equipment and a vigorous recruiting campaign in France.<sup>72</sup> The new, incoming director of the TKN (from 1927 the Thiès-Niger or TN) proceeded to do just that, and to conduct a thorough purge of the railroad's staff and workers as well. The railroad's painful process of recuperation was well begun in 1926; but before it was completed in 1930, a growing world crisis in the commodity trade hit the railroad hard, diminishing its freight volumes and revenues just as local commerce was clamoring for lower freight rates.<sup>73</sup>

The TN was also suffering, however, from a serious, long-term predicament stemming from the unevenness of productivity along the length of the rail lines. The earlier success of the TK in Baol along the initial Thiès-Diourbel section had indeed been misleading since it was not repeated

to the same extent farther down the TK line. From 1911 to 1922, before the fusion of the two lines, most of the railroad's receipts were generated by traffic on the 79 km stretch of line from Thiès to Diourbel, and to a lesser extent from the 77 km Diourbel-Kaolack section (see Table 10). The longer section of line east of Guinguineo (more than 200 km long by 1913) produced only a small portion of the line's total receipts. A unified TN was in even worse financial shape than the incomplete TK, since the KN line consistently produced a net operating deficit, which became extremely serious from 1930 on, when running costs exceeded receipts for the entire line (see Table 11). The lopsidedness in the distribution of receipts along the line was all the more disappointing because of the government's efforts to encourage production in the interior by means of sharply degressive freight rates in use from 1913. In 1913, for instance, peanuts on the TK could be shipped at the rates of 0.13 francs per ton and per kilometer for the first 50 km (the normal flat rate), at 0.065 Fr/t.km for the next 100 km, at 0.045 Fr/t.km for the next 150 km, and 0.03 Fr/t.km for the following 200 km.<sup>74</sup> Another special rate allowed peanuts from stations between Kaffrine and Tambacounda inclusive to be sent to Kaolack at even lower prices. At the fusion of the TKN, peanut freight rates were set at 0.45 Fr/t.km for the first 50 km stretch

in a sliding scale down to 0.04 Fr/t.km for distances greater than 800 km.<sup>75</sup>

Clearly the scale of degressive rates was not matched by decreasing costs for long-haul freight since the costs of shipping on the KN were much higher than on the TK--so much so that reconstruction of the entire KN had to be undertaken soon after fusion.<sup>76</sup> The deficits involved in lower freight rates for long-haul traffic, thus, had to be assumed by more prosperous elements of traffic on the section of the line nearest the coast. Unfortunately, the economic results of this sacrifice were disappointing. Of the total tonnage of products exported via the TN railroad during the trade seasons of 1928-29, 1929-30, and 1930-31, over two-thirds originated along the section Thiès to Kaolack, and less than 15% on the KN (see Table 12).<sup>77</sup> The fusion of the two lines had brought only a modest increase in combined freight tonnages, but an enormous ballooning in the volume of traffic as measured in tonnage times distance (t.km) (see Table 13).<sup>78</sup> Long haul traffic sharply increased operating expenses, while generating proportionately little additional revenue or exports.

TK impact in Senegal The Thiès-Niger of course had been designed to function not only as a major axis of penetration into the interior, but as a generator of local agricultural

production and a commercial rival to a major waterway in the adjacent foreign colony of the Gambia. In some of these respects it was clearly a success.

For one thing, it drew trade away from the Gambia. Before construction of the new railroad, some of the peanuts of the Saloum and almost all shipped from Niani and Ouli had been exported by French commercial houses via the British-held Gambia river. Now, as the railroad was built into the northern parts of these territories, peanut traffic shifted direction from such southern river escales as Oualia and Guénoto to the new rail escales, such as Koussanar. The shift was all the more strongly confirmed when the TK reached Tambacounda in 1915 and when the government barred the export trade via the Gambia after World War I.<sup>79</sup>

Like the DSL, the TK had also rectified some of the more irksome regional disparities previously afflicting the region. This was evident in the case of the Wolof of the Saloum, who had often been obliged before the TK railroad was built to emigrate seasonally to farmland along the DSL where cultivation was more remunerative. The entrance of the TK into the Saloum not only made these migrations unnecessary, but induced a large seasonal counterflow of cultivators from less productive or overworked areas of northern Senegal into the rich, virginal land of the Saloum.<sup>80</sup> It is also evident that groups of Mouride



"talibes" were taking advantage of the new railroad from the first to plant new agricultural colonies along the TK in lands now made accessible for remunerative cash-cropping.<sup>81</sup>

Most significant was the TK's rectification of the DSL's earlier failure to serve Baol directly--a failure which had severely hobbled the growth of the earlier export commerce in that area. The first three stations of the TK--Khombole, Bambey and Diourbel--were quickly exporting impressively large quantities of peanuts--some 53,084 tons total for all three stations in 1909, and 48,788 tons in 1910.<sup>82</sup> Some of Baol's peanut tonnage had already been exported previously via animal carriers to the DSL or coastal escales, particularly with higher peanut prices from 1900.<sup>83</sup> But clearly the railroad accounted for significant increases in local production.<sup>84</sup> The Baol escales quickly became among the most prosperous trading centers in Senegal, and accounted thenceforth for much, if not most of the TK's peanut exports and rail receipts. About a third of the peanut traffic carried on the DSL would also subsequently originate on the TK; mostly from these escales (see Tables 14 and 20).

As some merchants had feared earlier, the shift in Baol's trading patterns impaired the prosperity of some DSL escales formerly profiting from a proximity to Baol.

After averaging shipments of 17,000 tons in the period 1905 to 1908, peanut tonnages exported from Tivaouane fell sharply to 12,000 tons in 1909, and stayed below 10,000 tons for a number of years. (see Table 15). Peanut shipments from the escale of Thiès held up better at first, but then slipped to much lower levels.<sup>85</sup>

On ports The TK brought about dramatic changes in the flow of export traffic toward the different ports.<sup>86</sup> St. Louis was plainly the main loser in the competition among the ports of Senegal. Once completed, the TKN railroad, of course, had been slated to take the long-haul commerce of the Sudan from St. Louis; but the TK also injured the port's prosperity in a more indirect way.

St. Louis' problems stemmed fundamentally from the sand bar that blocked and endangered ships trying to enter the mouth of the Senegal river. An inconvenient obstacle for 19th century shipping, the bar had become a major barrier to the larger commercial ships of the 20th.<sup>87</sup> A project for fixing the sand bar and clearing a reliable channel had been on file since 1886, and Senegal's public works service prepared updated technical studies for the project between 1904 and 1910.<sup>88</sup> Unfortunately, the large sums necessary for such a project could now only be raised by the Government General, whose officials were plainly reluctant to invest in an undertaking that might divert some of

the Sudan's traffic from the TK railroad. Ponty, in particular, flatly refused to use the federation's funds for fixing the sand bar at St. Louis.<sup>89</sup> The colony's General Council, many of them St. Louisians already at odds with the centralizing tendencies of the Government General on other issues, took up the project's cause. But the Council could do little against the federal government's obstinacy.<sup>90</sup> A split in the ranks of St. Louisian merchants over the question did not help the city's case either.<sup>91</sup>

Momentarily St. Louis seemed to have won the issue when the deputy of Senegal succeeded in forcing Ponty to earmark an additional 10 million francs in the loan of 1913 for this project. But the Government General managed to stymie work on the sand bar indefinitely by insisting on further, more extensive studies that were in fact never carried out.<sup>92</sup> In 1920 and 1921, some political figures tried to revive the project for this now commercially-moribund port. But almost all of the 10 million originally allotted in the loan of 1913 was diverted instead in 1923 to projects of higher priority.<sup>93</sup> Proposals to pour new peanut exports into St. Louis from a new rail spur into Djolof were also frustrated since construction on this railroad began far too late to help St. Louis' port. Only its role as capital of Senegal and Mauretania allowed

modern St. Louis a modicum of its ancient prosperity, as traffic in its port dwindled to a thin trickle of river trade.<sup>94</sup>

The TK railroad project had been designed with the intention of augmenting the traffic of the new commercial port being constructed at Dakar, and indeed the play of degressive freight rates did funnel Sudanese exports all the way to Dakar after fusion of the TKN. Nevertheless, it was Kaolack, lying 182 kms closer to the Sudan along the railroad, that benefited most from the new rail line. Despite navigational difficulties on the Saloum river, exports through the port of Kaolack, already growing with an upsurge in peanut exports from the Saloum after 1900, increased dramatically after a rail spur from Guinguineo linked Kaolack with the TN in January 1912.<sup>95</sup> In 1913 and 1914, Kaolack quickly captured the peanut shipments from all TK stations east of Diourbel and most of Diourbel's peanuts as well (see Table 16).<sup>96</sup>

After a temporary concentration of maritime traffic at Dakar during World War I, Kaolack's natural geographic advantages soon made it the main port for the TK's peanuts in the post war era.<sup>97</sup> Whereas peanuts exported via the Saloum river had accounted for only 23.3% of the total from Senegal in the period 1909-1913, it amounted to 36.7% by 1925.<sup>98</sup> Despite the predictions of colonial officials,

almost all peanuts of the TK from Gossas eastward were exported via Kaolack, and from 1923 it again drew the majority of Diourbel's produce as well.<sup>99</sup>

Merchants based on Dakar and Rufisque were discontented with the growth of a rival port at Kaolack, which would oblige them to invest competitively in subsidiary operations at that port.<sup>100</sup> Theoretically, it was possible to channel the flow of peanut freight all the way to Dakar or Rufisque by instituting special degressive rates cancelling the cost of the extra 44 kms involved in sending Diourbel's peanuts to Rufisque or the 182 kms in sending peanuts from Guinguineo to Dakar by rail instead of Kaolack.<sup>101</sup> In reality, the cost of the extra mileage, if it were not subsidized by the government, would have to be borne by the TK railroad service, whose financial situation as noted above was none too bright. Moreover, the DSL, which controlled the 72 km run from Thiès to Dakar, resisted implementing a common unified degressive rate for long-haul traffic on the TN since the company would clearly gain little revenue while augmenting costs with this arrangement.<sup>102</sup> Under the prodding of a vigorous local chamber of commerce at Kaolack the government decided by 1928, to erect a modern, well-equipped port at Kaolack, which from 1929 was to capture the major share of peanuts shipped from Senegal.<sup>103</sup>

Population movements Population growth in the various coastal ports of Senegal from 1908 to the 1930's clearly reflects not only the redistribution of the export trade among these ports but also a significant movement of population in Senegal toward urban and semi-urban areas (See Tables 17 and 18). Dakar's population, which had been reasonably stable at around 24,000 from 1908 to 1916, shot up to over 37,000 by 1921, to 54,000 by 1931 and to 76,100 by 1934. Thiès, whose losses in caravan trade from Baol were more than compensated by its selection as a major transportation crossroads and by the location of TK headquarters nearby, bounded from a total of 1,750 inhabitants in 1908 to 3,044 in 1914; and then to 6,427 people in 1921. Towns that lost out in the new commercial dispensation-- St. Louis, Tivaouane, and ultimately Rufisque--maintained more stable population levels in contrast to agglomerations such as Thiès, Diourbel, and Kaolack, which mushroomed spectacularly; but the disadvantaged towns also tended to grow from the increasing urbanization of the society. A tabulation of population in 13 urban centers in 1914 enumerated a total of 77,598 people in these locales at a time when the total population of Senegal was estimated at 1,247,000. There were a total of 139,635 people in 34 urban centers other than Dakar in 1930 at a time when the total population of Senegal was still around 1.6 million.<sup>104</sup>

Whereas the ports of St. Louis and Rufisque jointly held 39,402 of these people in 1930 and Kaolack some 13,348 more, nine DSL escales including Thiès boasted a respectable combined total of 30,308 people, while eight of the TK escales already held a total of 26,265 people--that is, the larger rail escales alone accounted for over 40% of the urbanized population in 1930, exclusive of Dakar. The European population in Senegal, an element almost exclusively urban, was also on the rise during this period, especially in Dakar.

Construction of the TK railroad had contributed toward urbanization in Senegal by nurturing a string of new escales abutting the railroad's new stations. The growth of these escales seems all the more interesting considering that the new rail stations had generally been located, regardless of the size of nearby centers, at spaced intervals of 25 to 30 kms along the rail line at sites that promised sufficient water.<sup>105</sup>

The section between Thiès and Diourbel, at least, had been deliberately traced through a densely settled area. But even Diourbel had been chosen not for its size, but because of a coincidental transfer of French resident's quarters there from Sambé.<sup>106</sup> Beyond Diourbel, politico-economic strategy guided the direction of the trace, which bypassed many of the larger villages in the corridor between

the Ferlo and the Gambia. Kaffrine with 226 people, Kougheul with 191, Koussanar with 79, Koumpentoum with 111 were hardly of impressive size.<sup>107</sup> Even Tambacounda with 320 people was mainly chosen because of its proximity to a junction of four existing overland trading routes.<sup>108</sup>

The social dimension Although it is hazardous to infer social attitudes from statistics, the TK railroad, like the DSL, was apparently a source of much social satisfaction to Africans. Aside from the growth of population at the rail escales, this is clearly reflected in the heavy third-class passenger traffic (and fourth-class in the Sudan) on both railroads, as well as in the opportunity to farm new land previously too remote for cash-cropping.<sup>109</sup> In Myrdal's terms, the railroad was extending the range of the "spread effects" produced by the peanut export trade, particularly by equalizing previously severe spatial disparities.<sup>110</sup> Henceforth, cash-cropping was diffused over a much wider zone, and any incipient land shortages were eased. The extensive campaigns of well-drilling deliberately undertaken in conjunction with the construction of the TK, in order to attract and fix populations in the vicinity of the rail lines and other favored areas, were also welcome boons to rural populations chronically suffering from water shortage.<sup>111</sup>

The railroad, however, as an instrument of external



market forces, tended to increase sectoral disparities by stimulating an overstressed export trade; and there were drastic limits to the railroad's ability to redress spatial disparities. The TK's impact on eastern parts of its line had been disappointing, and areas too remote from railroads--such as Kedougou and the Senegal river basin--suffered from "backwash effects," in which the play of taxes and prices would lure the young men for work, seasonally or permanently, to the favored areas.<sup>112</sup> Furthermore, there was still the question--raised by Frankel in connection with African railroads in general--as to whether the region's population was really large enough to make a long railroad of penetration financially viable.<sup>113</sup>

This does indeed seem to have been a problem for the Thiès-Kayes in the 1920's. Population increases along the TK line were substantial, as indicated in census figures for the cercles of the TK line (Baol, Sine-Saloum, Niani-Ouli); but these increases seem less impressive if matched against comparable increases for Senegal as a whole (see Table 19).<sup>114</sup> Census figures on the basis of cercles would not, of course, reflect population movements within cercles or seasonal sharecropper migrations toward areas along the rail trace. However, the relatively low absolute increase of population in Niani-Ouli indicates that the disappointing agricultural production in the 1920's of areas east of

Guinguineo indeed stemmed partly from the shortage of settled population in these areas.

Thus, as early as 1917 a governor of Senegal had proposed that the government bring in African settlers from the more remote areas of the Sudan to fill underpopulated areas near the TK escales.<sup>115</sup> This particular suggestion never got far; but by the 1930's the colonial government was undertaking several actions that tend to confirm that the existing population distribution was a major factor in the weakness of productivity on the TK line. One important action was to formalize and encourage the habitual, seasonal influx of share-cropping migrant farmers, or "navetanes," from the Sudan and Guinea toward coastal areas of Senegal. This seasonal migration, antedating even the French conquest, was now actively encouraged in the 1930's by propaganda campaigns in the navetane homelands, and the navetanes were organized rigorously for the round-trip seasonal journey into large supervised groups travelling at reduced train fares.<sup>116</sup> Even more significant was the encouragement given to the Mouride brotherhood of Senegal, whose earlier far-ranging drive to establish peanut-growing colonies had been deeply distrusted by government officials during a first period of expansion from 1907 to 1927.<sup>117</sup> The larger, better-organized second period of Mouride expansion was conducted from 1932 to 1945, with government approv-

al, eastwards into the upper valleys of the Saloum and Sine and along the "new territories" of the TK railroad.<sup>118</sup> Not entirely unconnected with the Mouride migrations, was a government-sponsored program organizing a sometimes-forced migration of Serer people from Sine into the new terrains of the northern Saloum.<sup>119</sup> However effective these government measures may or may not have been, they were clearly undertaken in response to perceived needs. The core of the economic problem for the TK escales farther in the interior lay not in freight rates, but in the shortage of manpower willing to settle there. In any case, after the 1930's the center of gravity of Senegal's population did shift eastward along the TK, and with it the distribution of agricultural production.

Auxiliary railroads The policy of moving people to accommodate railroads was one that increased spatial disparities to some extent. On the other hand, construction of auxiliary branches to serve productive or promising areas of Senegal too remote from the DSL and TN railroads seemed, for a time an alternative solution. The notion of laying down low-cost, narrow gauge (60 cm) lines for freight hauling between various points in Baol (Bambey-Gaoune, Diourbel-Gassane, or Guinguineo-Gassane), from Kaolack to Rip, into the Upper Casamance, or from Louga into Djolof indeed enjoyed a certain popularity in the postwar period.<sup>120</sup>

At that time, a narrow-gauge rail enterprise would face growing competition from motor truck traffic; but several firms, notably a consortium formed in 1927 by major Senegalese commercial houses, the DSL, and the Banque de l'Afrique Occidentale, seemed enthusiastic about these projects.<sup>121</sup> One imaginative scheme would have combated truck competition with a hybrid of road and rail—using a rail-guided, gasoline-powered truck as a locomotive, with its weight on wheels rolling on the ground on either side of the track.<sup>122</sup> However, the colonial government itself, in fact, not any private firm, finally undertook these auxiliary railroad projects.

The most promising of these lines was the Louga-Linguère railroad, which promised to tap the productivity of Djolof, reputedly a major breadbasket in ancient times and still an exporter of peanuts and millet despite its remoteness from the coast. The project had indeed already been actively promoted from 1908 by a merchant of Rufisque, Ferdinand Maury, who even won the colonial government's backing for his scheme before the war disrupted his plans.<sup>123</sup>

After the war, the project was taken up directly by the government of Senegal, which constructed the entire 134 km railroad as a one-meter gauge single-track line branching on the DSL at Louga by 1931.<sup>124</sup> Construction of the line,

begun in December 1926, was directed by French military officers using locally recruited labor. The government, however, yielded the line's operation to the DSL company in a 25 year lease granted in December 1928--a logical arrangement since the Louga-Linguère's export traffic was obliged to pass via the DSL railroad.<sup>125</sup>

Unfortunately, the line proved a dismal failure. Construction costs were much higher than anticipated, and, despite preliminary surveys, its new escales suffered from severe water shortages. The new line, which had the misfortune of opening just when the Great Depression was beginning to strangle the peanut trade in Senegal, was also penalized by the decay of St. Louis' port, obliging traffic from Louga to exit at high cost at the more distant ports of Dakar and Rufisque. From 1929 through 1932, the Louga-Linguère took in 1,458,000 francs in receipts while chalking up 4,364,000 francs in expenses.<sup>126</sup>

The Louga-Linguère had been built partly because the influential "bourba" Djolof, Bouna N'Diaye, among others, had been campaigning on its behalf for years.<sup>127</sup> The project for a Casamance railroad arose out of similar efforts on the part of local political figures in the Casamance.<sup>128</sup> The Casamance project unfortunately did not get far. The ineptness of civilian and military personnel assigned to the initial surveys and the governments indeci-

siveness in choosing the railroad's terminal points hamstrung the project at the planning stage. By 1929 a study commission recommended against a railroad because of doubts that sufficient rail traffic could be generated in the underpopulated Upper Casamance. By then local merchants were more interested in improving the navigability of the Casamance river than in any railroad, and the colony of Senegal ceased its studies.<sup>129</sup>

The one-meter single track railroad built from Diourbel to Touba stands out from the other two projects as a notable commercial success. Designed with the intention of continuing beyond Touba to Taltal, and eventually to the Louga-Linguere, the Diourbel-Touba (or Sine) railroad had first been suggested only in 1924. Senegalese merchants apparently would have preferred rail lines in other directions, such as toward Gassane or the Gaoune forest, and Diourbel's merchants especially feared that the Diourbel-Touba would capture much of the produce then being brought directly into Diourbel.<sup>130</sup>

It is clear, despite the paucity of pertinent documents, that French authorities decided to go ahead with the rail spur to Touba for political reasons connected with the death in 1927 of the spiritual leader of the Mouride brotherhood, Ahmadou Bamba. With the remains of Ahmadou Bamba slated to be transferred for burial at Touba, this village

was likely to become a major center of devotion and pilgrimage for the Mouride faithful. In any case, construction of this 46 km line, branching directly from the TN at Diourbel, began in November 1929 and was terminated in 1933 with the aid of an ample labor offered by Mouride volunteers.<sup>131</sup> Despite the depression, this new line was immediately a striking commercial success--its new escales of N'Doulo and M'Backe became two of the busiest shipping centers in Senegal--and its success offers a useful object lesson when taken together with the failure of the other lines.

First of all, regardless of the economic issues involved, all three of the auxiliary rail projects seem to have been initiated for predominantly political reasons. This is in line with Myrdal's observation that local political action is often directed to equalize spatial disparities, and it also indicates a noteworthy capacity of local political figures to influence colonial policy at that time to some degree.<sup>132</sup> Expectations that the railroad in itself would actually increase total peanut exports, however, do not seem realistic, and the optimistic project studies seem calculated more to suit the political needs of the moment than to tap genuine economic opportunities. At the least, it could be said that governmental planners certainly entertained an exaggerated notion of

the commercial development that a railroad could generate. The new Diourbel-Touba railroad was certainly a success. But much of its new tonnage, especially from N'Doulo, had previously been shipped out via the nearby rail station of Diourbel or by a fleet of truck haulers who had developed a heavy traffic in the area.<sup>133</sup> This is not to deny that production expanded in the area subsequent to the rail spur's construction; but much of this can also be attributed to its favorable situation along a major axis of future Mouride colonization aimed at the religious center of Touba, rather than because of the railroad per se. At best, the railroad to Touba had managed to tap production in an area already ripe for expansion, rather than creating those conditions itself.

The disappointing failure of a railroad to stimulate any significant production in Djolof reaffirms the point. The factors supportive of production in that area, though similar to those present on the Diourbel-Touba line, were unfortunately just too weak. The cost disadvantages of the region, located so far from good port outlets, and the shortcomings of the Louga-Linguère line were all the more painful at a time when a depression was choking down market prices for peanuts. If anything, the railroad drew labor away from the Djolof, by enabling local cultivators to escape seasonally to other areas where cash crops could



command better prices. Later in the 1930's market prices rebounded to levels that might have sparked productive growth earlier along the Louga-Linguère. But it was too late. By then, the government, which had taken over the line from the DSL, was ready--perhaps all too ready--to write off the Louga-Linguère as an unfortunate investment of little potential, and to leave Djolof a backwater.<sup>134</sup>

Conclusions Railroads were one of the proudest marks of imperialist enterprise. They fortified the imperialists' perception of themselves as teachers and builders engaged in an enterprise that would benefit the colonized as well as the metropole and would justify thereby the European presence in West Africa. The French envisioned the railroads as tools to free the Sudanese interior from a prison of economic isolation, enabling indeed a new major world center to flower there.<sup>135</sup>

The Thiès-Kayes formed only a portion, though an essential portion, of a grand transversal railroad that was to bring this about. The Thiès-Kayes had been designed to fulfill several roles, and it had certainly performed well in bringing an added measure of spatial equalization and prosperity to wide areas of Senegal. However, the railroad's impact had been more feeble than expected, even in Senegal itself. It had stimulated production in areas where human and material resources were already concentrated

in sufficient number--areas already being exploited by the export trade. But the railroad had a disappointingly meager impact in other places.

The reason for this failure--brought out clearly in the case of the Louga-Linguère--lay in the interplay of world market prices, local productivity, the cost of living, rail freight structures, and the need to cover rail expenses with receipts. At root, much of the problem lay in the relative sparseness of population that made a long railroad of penetration barely viable with insufficient traffic. Since the colonial government would not subsidize rail operations, the rail line could only stay solvent if a sufficient, productive population could be induced to move to the vicinity of the line--even if it did leave some other areas, such as Djolof with its poor rail line, in the "backwash" of progress. Just as fundamental a problem was the shortage of export (or domestic) freight of high value per unit weight of volume--a problem that had crippled the long-distance trade in pre-colonial Africa earlier. The low value of goods transported, such as peanuts, now also hobbled the financial viability of the railroads and their reach into the interior.<sup>136</sup>

Another part of the problem lay in the east-west orientation of the grand transversal project as the major axis of penetration to the Sudan. The longer distance of the east-west trace selected and its crosswise orientation

to major lines of domestic trade simply magnified the financial problems of the railroad, while only generating a feeble export and domestic traffic. As the post-World War II prosperity of the Ivory Coast indicates, an emphasis on developing trade on north to south rail lines might not only have encouraged the growth of a wider regional domestic trade (probably, with fewer consequent sectoral dislocations), but also might have stimulated a greater volume of long-distance export traffic.<sup>137</sup>

French officials paid much lip service to the primacy of economics as a justification for the colonial effort. But despite the possible financial difficulties of an east-west route, of which they were well aware, these officials clearly subordinated economic development to political and strategic considerations. For them, commerce was only one dimension of a general political struggle with foreign powers. These officials had hoped that the inconvenience of economic geography could be redressed by a simple manipulation of freight rate structures. But the railroad had proven a fragile economic tool in the West African setting. In the prosperous period 1927 to 1929, the TN with a longer line was carrying about the same volumes of total freight, peanuts, and passengers as the much smaller DSL (see Table 20).<sup>138</sup> While the Thiès-Niger barely covered expenses, the DSL was prospering. Soon the economic health

of both railroads, and indeed their existence, would be tested by the calamity of the Great Depression.

Notes

1. GG (Van Vollenhoven) to GS, September 10, 1917, SARS, DCF, in reference to a suggestion that a migration of Africans be organized from the Sudan to the areas about the railroads.
2. As an example of the colonial literature on railroads in Africa, see Commandant Andry, Etude sur le chemin de fer de Kayes à Bamakou du Sénégal au Niger, 1893, copy in archives of Senegal's Régie des chemins de fer (henceforth RA); Charles Rotte, Les chemins de fer et tramways des colonies (Paris, 1910), p. 14, claimed that traffic on a railroad increased as the square of its length.
3. In principle anyway; see Suret Canale, L'ère coloniale, pp. 432-433; Georges Hardy, Histoire sociale de la colonisation française (Paris, 1953), p. 147; As Suret-Canale noted, budgetary expenses were met by the colony of French West Africa, but not by French Equatorial Africa, which continued to receive metropolitan subventions.
4. See C. W. Newbury, "The Formation of the Government General of French West Africa," Journal of African History, I, 1960, pp. 111-128; Rheinart report of December 18, 1913, with Wm. Ponty's response, ARS, 4G15; the Monguillot report of November 25, 1913, Ibid., details the evolution of the Inspection General of Public Works of French West Africa from 1905, when its chief Inspector General (henceforth IGTP), only counselled the Governor General, until 1913, when an Inspector General kept an eye on the technical services of the federation's colonies, reviewed their technical plans, issued directives on organizations, and was consulted on personnel matters.
5. In this case ideological beliefs and the self-interest of the governmental bureaucratic structure reinforced one another.
6. See C. W. Newbury, "Government General" cited above. The key enactments in the formation of the Government General were the decrees of October 15, 1902 and the decrees of October 18, 1904.
7. The colonies of Senegal and Guinea had contracted loans earlier, but these debts were consolidated as part of

the first general loan made by the Government General. The Governor General would have to obtain approval for each of the items on the proposed loan from the Ministry of Colonies, which would then have to secure parliamentary assent in a bill approving the loan.

8. See copies of the letter MC to GG, December 12, 1902 in ARS, 0228 and 065, with map in 0228; the map in ARS,065 is dated May 1906; the apparent original of the plan in Paris, in FOM, TP, is marked simply "D cembre, 1902-Plan Binger," which might indicate Binger as the originator of the plan. Salleses, Director of the Guinea railroad, suggested modifications in his report of July 3, 1903, with accompanying map in ARS,065. The plans for a Transsudanian were given wide publicity in 1911 when the government of French West Africa proposed constructing a new section of it from Bamako to Bougouni.
9. See GG to MC, July 22, 1909, ARS, 072. The railroad would be appreciated for rapid delivery of mail and for easy transfer of officials into the interior, as well as their rapid evacuation in case of sickness. After the government began to recruit large numbers of Africans for the French army, the railroads of penetration would be particularly appreciated for facilitating the flow of recruits out of the interior, rather than troops into it.
10. MC to GG, December 12, 1902, ARS, 065. Construction of a Conakry-Niger had been started in 1900. See the excellent article by Jacques Mangolte, "Le chemin de fer de Konakry au Niger, 1890-1914," Revue Franaise d'histoire d'Outre-mer, LV, 1968, n  168, pp. 38-105. A Dahomey railroad concession was granted to private firm in 1901 for a trace from Cotonou. The Ivory Coast railroad was started in 1904 with funds of the loan of 65 million and reached Dimbroko by 1910.
11. MC to GG, December 12, 1902, ARS, 065. There was a significant danger though that these very railroads might be used, contrary to the hopes of their builders, to drain products into foreign colonies if they passed too near a frontier area which was served more cheaply by a shorter foreign railroad or waterway. Because of this problem, French authorities were particularly keen on getting control of a railroad projected to be built in Liberia. See ARS,0230, especially Mouneyres to Chief of Service of Civil Affairs, March 22, 1913; Ponty's response to Rheinhart report, December 13, 1913,

- ARS, 4G-15.
12. See Excerpt, inspection report of Rear Admiral Auvert on the naval establishment at Dakar, December 6, 1909, ANF, DD2-2452.
  13. GG to MC, September 24, 1902, FOM, TP.
  14. See the Monguillot report of November 25, 1913, ARS, 4G15, which noted that rail rates had been arranged to canalize freight toward the west, while disregarding the costs of this diversion; also GG to MC, November 6, 1911, FOM, TP. See also Ficatier report to GG, May 3, 1922, SARS, DCF; See P.V., Consultative Commission of French West African railroads, August 21, 1911, FOM, TP.
  15. The possibility of compensating economies for long-hauls is discussed in Arthur Hazelwood, Rail and Road in East Africa. (Oxford, 1964), pp. 82-141, especially pp. 82-84. Long-distance hauls on the Thiès-Niger, however, seem to have been more costly.
  16. See Luneau's report to the Committee of Colonial Public Works (Comité des Travaux Publics de Colonies), session of February 2, 1903, with its negative reaction to a railroad project. See also Charles Duffart, "Le chemin de fer Sénégal-Niger et l'amélioration du fleuve," Dépêche Coloniale, June 25, 1904, p. 2, and P.V., CC of St. Louis, June 6, 1902, in which Roume advocated amelioration of the Senegal river.
  17. The report by Director of Public Works (Gt.Gal.), Ficatier, September 1902, copy in FOM, TP, on public works for French West Africa noted the usefulness of a study of a railroad to Kayes, but considered the amelioration of the Senegal river indispensable. See also GG to MC, September 24, 1902, FOM, TP.
  18. See report to and extract of P.V., Committee of Colonial Public Works, July 11, 1904, ARS, 062; copy GG to MC, September 26, 1904, ARS, 085; Luneau report to Committee of Colonial Public Works, October 24, 1904, FOM, TP.
  19. Mazeran to GG, September 2, 1902, FOM, TP; Mazeran report at the end of the mission, August 15, 1904, Ibid. See also the article "Le Sénégal, accessible et navigable en tout temps," (continued) by Mazeran in Dépêche Coloniale, n<sup>o</sup> 2604, December 9, 1904, pp. 2-3.
  20. See copy GG to MC, June 24, 1902, ARS, 062.

21. Copy of report by Binger and Boutteville to MC, November 27, 1902, ARS, 062.
22. GG to Colonel Rougier, Chief of Exploratory Mission, January 9, 1903, ARS, 062.
23. The observations of the Marmier report of 1893, cited in the previous chapter, were useful to Roume at this time.
24. River freight transportation, although slower than rail transport, was inherently cheaper, so railroad planners had to pay particular attention to the possible economic interreactions of a projected rail line with a nearby river. In the case of the Gambia, whose river allowed ocean-going vessels to penetrate easily 300 kms into the interior, a cross-country pack animal transit informally improvised by merchants might easily drain the commerce of the Sudan into the Gambia. The French commercial houses of Senegal already dominated Gambian trade, but the diversion of trade would mean that a French-built railroad was contributing to the tax base of the colony of the British Gambia.
25. See Government General, AOF, Le chemin de fer de Thiès au Niger, (Paris, 1931), p. 37; copies of correspondence and itineraries by Rougier and Belle, and Rougier's report are in ARS, 062, 063 and in FOM, TP. See also Government General, AOF, DSL-TK, (Vol. I, in Chemins de fer en AOF [Paris, 1906]), pp. 77ff. Most striking in these various reports is the extent of French ignorance of conditions in this part of the interior after 10 years of occupation.
26. Copy of GG to MC, July 7, 1905, ARS, 062 and 072. In its natural state, the river was navigable at a convenient time for the importation of European trade goods, but it was too low at times when local agricultural products had to be evacuated.
27. Director General, Union Coloniale Française to GG, February 2, 1906, ARS, 085, recommended construction of the first part of the new line by the DSL.
28. The project of convention, November 23, 1905 is in FOM, TP; See also GG to MC, February 1, 1906, Ibid.; Copy report "Embranchment du Baol," March 13, 1906, Ibid.
29. A concession to the DSL was rejected on the motion of



of the Lt.-Governors of Senegal and Upper Senegal-Niger, but plainly with the acquiescence of Roume. Captain Lotte, Commandant of the Navy in Senegal gave a brief description of the sessions of May 8 and 9, in his letter to Minister Marine, May 15, 1906, ANF, DD2/2447; See also MC to GG, May 11, 1906, ARS, 075; same, May 18, 1906, Ibid.; GG to MC, May 19, 1906, Ibid. The President of the DSL pleaded for Roume to reconsider, but he refused in GG to President DSL, June 1906, copy in FOM, TP. In an earlier "Note-propositions relative à la construction et l'exploitation du chemin de fer du Baol," July 1905, FOM, TP, Roume had been interested in according the DSL the concession for the new spur, but only if it also agreed to split its own line into Dakar-Thiès and Thiès-St. Louis sections.

30. See Director General, Union Coloniale Française to GG, June 23, 1906, ARS, 085. See also Pierre Hardant, "Les Travaux publics au Ministère des Colonies," Dépêche Coloniale, n° 2894, January 24, 1906, p. 1; n° 3008, February 7, 1906; n° 3018, February 17, 1906, p. 1; n° 3108, May 23, 1906, p. 1. See Henri Lorin, "Les chemins de fer du Sénégal," n° 3156, July 13, 1906, p. 1. The editor of Dépêche Coloniale, J-P. Trouillet, came out in support of Roume in an article-"L'AOF et son nouveau projet d'emprunt," n° 3201, August 30, 1906, p. 1.
31. Mangolte, pp. 65-72; GG to MC, October 7, 1903, FOM, TP.
32. The original contract of June 26, 1900 with Borely and Company of Marseilles had accorded that company an outright grant of 295,000 hectares of some of the best land in Dahomey. The abuses resulting from this privilege forced a hasty alteration of the contract. See Documents Parlementaires, Chambre, November 22, 1906, p. 148.
33. GG to MC, October 7, 1903, copy in FOM, TP. Mangolte, pp. 67-73, noted the difficulties of recruitment resulting from the mistreatment of Africans by agents of the private contractor. See also GG to MC, August 10, 1905, ARS, 0228; in which Roume already envisaged forming in French West Africa, a government railroad service similar to the state-owned railroads in France; Roume's report to the Conseil du Gouvernement, December 10, 1904, ARS, P12; Mouneyres' note on the Monguillot report of November 25, 1913, ARS, 4G15.

34. See Newbury, "Government General," pp. 118-128.
35. The later quasi-monopoly of military officers over construction work on the Thiès-Niger is noted in Government General, AOF, Thiès au Niger, p. 42. GG Ponty noted in his response of January 17, 1914; ARS, 4G15, to the Monguillot report on French West Africa's Inspection General of Public Works that Colonel Rougier as Director of the KN had been "L'initiateur d'une série de jeunes et brillantes officiers du génie à l'oeuvre chemins de fer africains." One of these, Captain Launay was indeed to become Inspector General of Public Works later on. Thomasset, another officer, was likewise to become an IGTP. See also Mangolte, pp. 70-71.
36. The question of colonial railroad construction by the state had been advanced by a number of military officers publicly since 1900. See Charles Rotte, Les chemins de fer et tramways des colonies (Paris, 1910). pp. 21-49; Fernand Guary "Les chemins de fer africains et la régie directe." Dépêche Coloniale n° 2925, November 14, 1905, pp. 1-2 and n° 2926, November 15, 1905, pp. 1,2.
37. Details of construction of the Thiès-Kayes line are covered in Government General, AOF, Thiès au Niger, pp. 37-51.
38. See report of the variant by Captain Friry, June 9, 1906, ARS, 065; Report of Director of Public Works, Senegal, July 2, 1906, Ibid.
39. The Calmel variant was studied December 1906 to May 1907. Calmel's report is document n° 75 in ARS, 064.
40. Much of the argument turned on technical and budgetary considerations. See the report by Digue, director of KN, March 6, 1908, ARS, 065; Lt. Governor of Upper Senegal-Niger to GG, n.d. (document #22), Ibid. Lt-Governor of Upper-Senegal-Niger to GG, March 24, 1908, ARS, 085; P.V., Chamber of Commerce, Kayes, March 14, 1908, Ibid.; GG to MC, May 25, 1908, ARS, 072; MC to GG, August 31, 1908, Ibid. The book by a former commandant of the cercle of Upper Gambia, Frédéric Riembau, De Dakar au Niger (Paris, 1908), on the other hand, strongly promoted the Calmel trace.
41. Copy letter Vieuxtemps (DSL board of directors) to Bähr

(Dakar), April 7, 1909, ANF, 89AQ, unclassified (Brazzaville) "Nous avons été surpris d'apprendre que la ligne Thiès-Kayes passe actuellement a 20 km seulement de Kaolack! Pour une ligne de pénétration elle a de la peine à s'éloigner de l'Océan." See the CFAO note presented December 10, 1908 to the African section of the Union Coloniale, copy in ARS, 065, and the report by Delpit, Director of Public Works, Senegal, March 6, 1908, ARS, 072.

42. See P.V., CC-Rufisque, March 4, 1909, SARS, DCF; Friry's response to the CFAO note at the December 10, 1908 meeting of the Union Coloniale's African section, copy in ARS, 065, in which he indicated that Kaolack would only handle the overflow of rail traffic; Friry's discourse in P.V., Chamber of Commerce, St. Louis, March 13, 1909, ARS-L; Noiroto report to GG, March 1, 1909, ARS, 072.
43. The commercial bulletin for the Sine-Saloum, February 1911, ARS, 2G11-43 already reported the transport of peanuts by pack animals from Guinguineo to Kaolack, rather than by rail to Rufisque.
44. Friry was much more optimistic about finding water along the original Rougier-Belle trace in his earlier report on subterranean water, December 22, 1905, ARS, 085. On difficulties of supplying water to Gossas and Guinguineo, see Director TK to Chief of Public Works Service, May 17, 1919, SARS, DCF; Launay Report on the TKN for GG, June 3, 1924, ARS, 1P119.
45. See note by Friry to IGTP, October 6, 1908; Noiroto report to GG on the Upper Gambia, n° 1, n.d. (1909), ANF, 148AP5; GS to GG, December 13, 1913, SARS, Confidential registers, (henceforth Confid); report Director TK on tariff projects, October 4, 1913, ARS, 076. In 1914, the price of peanuts at Oualia and Guenoto on the Gambia ranged from 20 to 23 fr/100 kg, compared to 18 fr/100 kg at Koussanar on the railroad (Political report, 1st trimester 1914, ARS, 2G14-6).
46. French interest in a Gambian port in 1904 was soon overshadowed by the Thiès-Kayes rail project. The desirability of a French port on the Gambia connected by rail to the TK was raised again during the immediate post-war period. See Ficatier report to GG, May 3, 1922, SARS, DCF. The suggestion was rejected in the note by IGTP Mouneyres, June 19, 1922, Ibid. and the report by acting Director TK, August 28, 1922, Ibid. See also John Hargreaves, Prelude to the Partition of West Africa (London, 1963), pp. 347-348.

47. From December 1908 to December 1910. Ponty had accepted DSL operation of the new rail spur after a campaign by elements of the colonial party on the company's behalf. See Director General, Union Coloniale Francaise to GG, September 15, 1906, FOM, TP; same, November 24, 1908, ARS, 072; copy MC to GG, December 24, 1908, FOM, TP; Pherivong report, February 26, 1911, FOM, TP.
48. Note for MC by Boutteville, May 29, 1909, FOM, TP; Project of concession by Batignolles, FOM, TP; Table of advantages and disadvantages of Batignolles construction, November 3, 1909, Ibid.
49. GG to MC, July 22, 1909, ARS, 072; Boutteville note for MC, November 4, 1909, FOM, TP; Picquie note for MC, November 11, 1909, Ibid.; Minister of Finances to MC, December 6, 1909, Ibid.; see also GG to MC, May 7, 1909.
50. The governor of Senegal admitted in a note of May 4, 1911 on the Le Conte inspection report of February 22, 1911, FOM, TP; that he was unable to oversee the TK. See GS Levecque's complaints about the colony's inability to control the TK in his comments of September 3, 1918 to the report by Tixier of August 1918 on Senegal's Public Works Service, FOM, TP, and also GG Angoulvant's sarcastic reply of September 18, 1918, Ibid.
51. See Mouneyres report to GG in the Conseil du Gouvernement, June 27, 1911, Ibid., on the projected loan of 150 million francs, emphasizing the Dakar-Ansongo grand transversal, P.V., Conseil du Gouvernement, session of June 26, 1911, Ibid.; GG to MC, December 31, 1911, Ibid.
52. Overall receipts were up because of passenger traffic, but freight receipts were sharply down. See Table 10. Also see the report for the 1912 session of the Council of Government, ARS, P13, and GS to GG, June 4, 1912, ARS, 087.
53. The Governor General's plans were strongly criticized in the Committee of Colonial Public Works. See report by Pontzen to the Committee of Colonial Public Works, February 14, 1912, Ibid. Note by Boutteville, July 12, 1912, Ibid.; Report #2459, Chamber of Deputies, session of December 23, 1912, copy in Ibid.; GG to MC, January 2, 1913, Ibid. See also Lemaire and Picaron to MC, April 11, 1913, Ibid. A variation of the Tambacounda-Talary

- trace was again being considered seriously. See the Pontzen report of February 14, 1912, and "A propos du Thiès-Kayes," Dépêche Coloniale, December 1, 1911, p. 1.
54. MC to Minister of Finance, August 26, 1914, FOM, TP; Political reports, Senegal, 1st and 4th trimester 1916, ARS, 2G16-5, noted that the gap was already being crossed by automobile for mail service at the end of 1916. Also see Director TK to IGTP, November 12, 1914, ARS, 088; same, November 15, 1914, Ibid.
  55. See Henri Cosnier, L'Ouest Africain (Paris, 1921) pp. VIII, XIX-XXIII. Cosnier, who was a strong critic of past French economic policy in the region in other respects, strongly endorsed a renewal of railroad construction.
  56. Report of acting Lt.-Governor Upper Senegal-Niger, December 1, 1917, ARS, 6P166-36. The acting IGTP, Thomasset, suggested in a report of February 10, 1919 to GG, ARS, 6P166-36, that the railroad nets in the colony have two major axes of penetration: Dakar-Bamako and Abidjan-Bouaké-Bobo-Mopti. Aubry had suggested a Bamako-Bani railroad rather than the line to Bougouni in his report of June 15, 1914, FOM, TP.
  57. See Cosnier, pp. 129-130, 219-224, Cosnier was not the first to do so. Binger had already suggested earlier in his account of 1892 of his explorations that the Ivory Coast be made the entry point for lines of penetration and development in West Africa. See G. Binger, Du Niger au Golfe de Guinée par le pays de Kong et le Mossi, Volume II (Paris, 1892), p. 345; maps showing routes and population concentrations are on pp. 398, 401.
  58. See Albert-Sarraut, La mise en valeur des colonies françaises (Paris, 1923), pp. 361ff.; Suret-Canale, L'ère coloniale, pp. 350-354. Also the report by Georges Barthelemy, for the Committee of Algeria, the Colonies, and Protectorates on the "mise en valeur" of colonies, 1921, copy in ARS, 1P35-32. Implementation of the entire program was predicated on a massive flow of German materiel to French Colonies as a part of war reparations.
  59. Report of May 10, 1922 by Mouneyres, FOM, TP.
  60. The funds of 1913 were reallocated in the laws of

August 8, 1920 and July 29, 1923. See the report by Raymond Godfernaux to the Committee of Colonial Public Works, January 10, 1922, FOM, TP; Report n<sup>o</sup> 5059 by Georges Bousset for the Chamber of Deputies, session of November 14, 1922. GG Carde indicated that even the Sarraut program was outdated in his note of April 8, 1926, ARS, 4G-87-105.

61. See report of GG on the program of port work and transportation routes for French West Africa, [1919], ARS, 6P166-36. Note the continuing interest in a Transsaharan. A Comité du Rail Africain, of prominent French citizens, proposed in 1918 that French West Africa be served by North African ports through a rail connection. The Governor-General of French West Africa was very hostile to the notion. See GG to MC, March 15, 1919, ARS, 6P166.
62. The rails of the completed line were first joined on August 15, 1923. See "Inauguration Thiès-Niger," in the special issue of Annales Coloniales, December 26, 1923. The fusion was put into effect as of January 1, 1924 by the arrêté of November 17, 1923, but the budgets of the two lines were not merged until 1927 (by a law of December 30, 1927).
63. The failure of the Niger development scheme is outlined in Jean Suret-Canale, L'ère coloniale, pp. 354-360.
64. See report Director TK, April 8, 1910, SARS, DCF, on the purchase of locomotives; report Director TK on railroad operations, September 18, 1913, ARS, 087.
65. On TK operations problems see: Director TK to GS, December 22, 1910, SARS, DCF; Director TK to GS, March 4, 1913, SARS, DCF. See criticisms of the deputy Barthe during debates of the proposed loan of 150 million in December 1912, excerpt in ARS, 087.
66. Launay "Note relative au fonctionnement des chemins de fer du Sénégal," April 10, 1920, FOM, TP; Economic report, February, 1922, ARS, 2G22-26. One problem had been the rapid degeneration of locomotive fireboxes designed for coal-burning when they had to use wood. See Director TK to GS, April 1, 1916, ARS, 0233; same, April 23, 1917, Ibid.
67. Report of Chief Surveillance Engineer, DSL, March 1, 1923, ARS, 6P104-36.

68. See monthly economic reports-February, March and May, 1922, ARS, 2G22-26; President CC-Rufisque to Director TK, March 29, 1922, SARS, DCF; President CC Rufisque to GG, February 14, 1922, SARS, DCF; GG to GS, October 25, 1923, SARS, DCF.
69. See GG to MC, June 10, 1924, confidential, ARS, 1P6-10. GG to MC. September 8, 1924, Ibid. Ballabey's personnel dossier is #A-496 in SARS, See also Thiès au Niger, pp. 37,42.
70. See the publication by Government General of French West Africa, Sur les difficultés rencontrées au réseau Thiès-Niger depuis sa création et sur les mesures prises en vue d'assurer une exploitation normale et rationnelle de ce réseau (n.d.-circa 1927); Thiès au Niger, pp. 62-67; Launay report on functioning of TKN for GG, June 3, 1924, ARS, 1P119-32; Report of Director of TKN, September 24, 1924, SARS, DCF. See P.V., CC-Kaolack, February 27, 1924, pp. 38-40, ARS-L.
71. See monthly Economic Report, April 1925, ARS, 2G25-2. See also monthly Economic Report, May 1922, ARS, 2G22-26; P.V., CC-Kaolack, June 26, 1924, SARS, DCF.
72. See Difficultés Thiès-Niger, pp. 7-10; Thiès au Niger, pp. 67-69. Ficatier had warned of the insufficiency of rolling stock and personnel in his report to GG, May 3, 1922, SARS, DCF; but his recommendations were largely rejected for budgetary reasons by IGTP Mouneyres in his answering note of June 19, 1922, Ibid. See also adjoint Director TN to GG, April 19, 1925, ARS, 1P6-10, Merly report on TKN personnel, June 15, 1925, ARS, 4G86-105.
73. See Inspector Merly to MC, July 3, 1926, FOM, TP; Demongin report, May 20, 1926, Ibid.; "Bulletin Mensuel sur la Situation Economique et Politique de l'AOF," May 1926, copy in SARS, DCF; Acting GG Dirat's response of July 2, 1926 to the Merly report of June 12, 1926, ARS, 4G87-105; P.V., CC-Kaolack, April 26 and May 31, 1930, FOM, TP.
74. Report of Director TK on four tariff projects, October 4, 1913, ARS, 096.
75. See Report [Launay], May 1924, ARS, 6P172-36, the price to 50 km was 0.45 Fr/t.km; from 51 to 80 kms, 0.32 Fr/t.km; 81 to 150 km, 0.18 Fr/t.km; for 151 to

- 350 km, 0.08 Fr/t.km; for 351 to 800 km, 0.05 Fr/t.km.
76. The need for more appropriations to repair the KN had already been recognized earlier; see GG to MC, March 8, 1923, FOM, TP on a proposed new loan of 55 million.
  77. See the table in a report by the acting Director TN to IGTP, September 26, 1931, SARS, DCF.
  78. Le Gregram report, Mission Sol, June 16, 1930, p. 6, See also Thiès au Niger, p. 84.
  79. Commercial Bulletin, Sine-Saloum, July 1909, SARS, DCF; monthly reports on Niani-Ouli, 1915, ARS, 2G15-36; commercial bulletin, Tambaccunda, January 1920, SARS, DCF. See also Adam, pp. 19, 139-140; Riembau, Dakar au Niger, pp. 42-56.
  80. This seasonal migration from the Saloum was mentioned in Rougier's report of 1903, ARS, 063, chapter 3, p. 11; Government General, AOF, DSL-TK, pp. 162, 175.
  81. See Paul Pelissier, Les paysans du Sénégal (Saint Yrieix, 1966), pp. 302-310; Administrator cercle Sine-Saloum to GS, May 20, 1910, SARS, DCF. See political report, 2nd trimester 1914, ARS, 2G14-6.
  82. Statistics from the annual reports of the DSL board of directors to stockholders, 1910 and 1911.
  83. See for instance, the political report for January, 1906, ARS, 2G6-4, political report 1st & 4th trimester 1908, ARS, 2G8-10; report for Sine-Saloum, January 1911, ARS, 2G11-45.
  84. Friry noted in his project report of June 9, 1906, p. 7, that the port of Fatick also drew peanuts from Diourbel 40 kms away and even from N'Gahayes. The total freight exported from Baol may have been in the order of 15,000 to 20,000 tons of peanuts before the railroad's construction.
  85. For the protests of the merchants of Tivaouane and Thiès, see petition to GS, May 9, 1907, ARS, 085; extract of P.V., Municipal Council of Thiès, May 21, 1907, Ibid.; GS to GG, May 23, 1907, Ibid.; GG to GS, June 2, 1907, Ibid.; copy GG to MC, October 6, 1907, Ibid.; acting GS to President, CC-Rufisque, March 28, 1908, SARS, DCF, claimed there was little to fear, since in a rich country, the new outlet would create new products. See also the



- report for 1909 in folder 1, ARS, 2G9-6; the commercial bulletins for Tivaouane in ARS, 2G11-44, and January through March 1909 in SARS, DCF.
86. See Roger Pasquier, "Villes du Sénégal au XIX<sup>e</sup> siècle," Revue Française d'Histoire d'Outre-Mer, XLVII (1960), pp. 387-426.
87. A report by Inspector Pherivong on the sand bar of St. Louis, December 15, 1910, FOM, TP, noted that ships of 1200 tons at most could pass the bar. Nevertheless when the sand bar was in a favorable position the commercial activity in the port of Saint-Louis could still exceed that of Dakar, as in 1909. See the annual economic report 1909, ARS, 2G9-4, folder 4. The situation for St. Louis had deteriorated markedly by 1912 (annual economic report, ARS, 2G12-8, folder 5). Difficulties of river navigation also played a role. Senegalese commerce found it difficult to evacuate by river a mere 2500 tons of freight from the Sudan in 1925 (Difficultés Thiès-Niger, pp. 4-6).
88. See Camille Camara, Saint-Louis du Sénégal (Dakar, 1968), pp. 103-106, 123-127, and Commandant Geo Mada, La barre du Sénégal, Une fleuve sans issue (Bordeaux, 1918), rare copy in ARS-L; See also MC to GG, May 3, 1906, FOM, TP; report by Director Public Works, Mouneyres, (Blache-Mouneyres project), July 18, 1910, Ibid.
89. GG to MC, June 12, 1911, FOM, TP; Copy note for Minister, March 4, 1913, Ibid.; GG to GS, April 10, 1911, ARS, P246. Méniaud, Director of the Bureau of Economic Affairs in the Ministry, noted in his report, September 1, 1910, ARS, P244, that if the bar were cut, St. Louis would retain almost all of the long-distance import freight and some of the export freight which the TK would otherwise get. Many articles were written on all sides of this subject in metropolitan newspapers (e.g., Pierre Mille, "Le Fleuve Sénégal," Dépêche Coloniale, January 7, 1904, p. 2; J. Hubler, "La Barre du Sénégal," Ibid., February 9, 1910, p. 2-4; same, Ibid., August 13, 1912, pp. 1; same, Ibid., August 21, 1912, p. 1; F. Jourdiér, "La Barre du Sénégal," Ibid. February 26, 1913, p. 1). Ponty attempted to avoid undertaking the project by claiming that it ought to be done instead by a private company, which would exploit the improved harbor; but the Governor General never displayed any interest in pursuing this solution. See GG to MC, July 13, 1912, FOM, TP; Note by Inspector

General Devos, August 10, 1912, Ibid.

90. As in Conseil Général, extraordinary session, December 21, 1910, pp. 84, 85.
91. In 1902, (See P.V., CC-St. Louis, March 28, 1902, ARS, Q28) the chamber of commerce rejected even the notion of ameliorating the bar. In 1909, the chamber was more favorable, but certainly not enthusiastic (See excerpt P.V., CC-St. Louis, November 22, 1909, copy in FOM, TP). See excerpt of letter from Administration of CFAO to its branch office at St. Louis, June 1, 1910, FOM, TP; same, January 9, 1911, Ibid. The DSL had created a special low rate on goods between Dakar and St. Louis as an alternative to remedying St. Louis portuary problems.
92. Boutteville note for MC, March 4, 1913, FOM, TP; Boutteville to M. Cochery, March 17, 1913, Ibid. J. Renaud's report recommending new, more detailed studies of the project was published as "Amélioration de l'embouchure du Sénégal," in La Géographie, 19, (1914), pp. 397-400. Renaud's recommendation was affirmed by the Committee of Colonial Public Works on July 7, 1913. See copy MC to GG, July 25, 1913, ARS, P248; copy P.V., Committee Public Works, July 7, 1913, Ibid. See also the report by Louise, March 4, 1914, Ibid. The vicissitudes of the problem to 1917 can be followed in ARS dossiers P244 through P249.
93. Excerpt P.V., CC-St. Louis, May 5, 1919, ARS, P42; Blaise Diagne to MC, July 8, 1920, FOM, TP. Blaise Diagne, to MC, March 30, 1921, FOM, TP. See also Conseil Colonial, August 1921 (extraordinary) pp. 46-50. The funds were first diverted to other works by the law of August 8, 1920 and confirmed in the law of July 29, 1923. By 1923, the entrance to St. Louis was so silted up that exports from the river had to pass by rail to Dakar, (1923 report by Chief of Customs Service, Senegal, SARS, DCF, p. 38). The memorandum on the bar of St. Louis prepared by Boutteville for (MC) Sarraut for his trip to West Africa, n.d. [September, 1921] FOM, TP, stated: "Dakar maintenant est le véritable port du Sénégal et il n'y a pas avantage à éparpiller les travaux et les dépenses comme on l'a fait trop souvent en France..."
94. Camara, Saint-Louis, pp. 111-123. Camara also writes optimistically of plans to ameliorate the entrance to

- the port in the future (op. cit. pp. 122-126). For St. Louis as the port for Djolof, see the report by Pherivong to MC, January 6, 1911, FOM, TP; Aubrespin report of June 20, 1911, ARS, 053.
95. The Political report, 4th trimester 1912, ARS, 2G12-9 noted that the port of Kaolack was taking an important part of the products of East Baol, heretofore exiting via Rufisque. The work by A. Dessertine. Un port secondaire de la cote occidentale d'Afrique, Kaolack (Kaolack, 1967) is essential for a study of this port. See also Joseph Fouquet, La traite des arachides dans le pays de Kaolack... (St. Louis, 1958), especially pp. 52-60, 108-116.
  96. Some chamber of commerce statistics show that Khombole and Bambey generally shipped all of their peanuts via the DSL. Obviously, from column 9 of Table 16 an estimated 6,292 tons of Diourbel's peanuts went to the DSL in 1913, and 5,136 tons in 1914. The remainder, roughly 10,000 tons in 1913 and 15,000 tons in 1914 went to Kaolack.
  97. See Economic Affairs report-Senegal, January 1924, ARS, 2G24-2. Note that the play of the railroad's rate schedule would send to Kaolack all peanuts shipped from Guinguineo to the Faleme, but the exports of the Sudan would go all the way to Dakar.
  98. See "L'AOF en 1925," a special issue in 1926 of the Bulletin Mensuel de l'Agence Economique de l'AOF, pp. 41-43, for the figures.
  99. See the following P.V., CC-Kaolack: May 31, 1922 for the 1921-22 trade season, January 8, 1924 for 1922-23 trade season Bulletin, CC-Kaolack n° 12 (Dakar, 1926), pages 42, 46 has statistics for the 1924, 1925 trade season; Bulletin, CC-Kaolack, n° 13 (Dakar 1927), page 43 for 1926-27 trade season; all of above found in SARS, DCF. See the note by Ficatier to GG, May 3, 1922, SARS, DCF; Note by IGTP of June 19, 1922, Ibid. IGTP Mouneyres doubted that Kaolack would ever be as important as Ficatier thought. The marginal notes on Ficatier's report also indicated skepticism that Kaolack would ever be a major port. See also Chief Customs Service, Senegal, report of 1923, SARS, DCF, p. 36.
  100. E.g., Director General, Union Coloniale Française to GG, June 27, 1914, ARS, 076. Copy President CC-Dakar to GS, November 27, 1923, SARS, DCF. The government was

reluctant to improve the approaches to Kaolack, hoping instead that degressive freight rates would bring at least some of the peanuts along the line to Dakar. See the speech by President CC-Kaolack on the visit of the acting GG June 1922, copy in ARS, 17G190-104. Also P.V., CC-Kaolack, February 27, 1924, pp. 35-37.

101. See Director of TK, Thibaud, June 16, 1910, SARS, DCF; contrast it with Ballabey to Surveillance Engineer, September 16, 1910, ARS, 042. Director General of Union Coloniale Française to GG, June 27, 1914, ARS, 075; GG (Ponty) to Director General of Union Coloniale Française, September 7, 1914, Ibid.; Report of Director of TK, October 4, 1913, Ibid. See Director, TK, Thibaud, June 16, 1910, SARS, DCF.
102. DSL to MC, December 13, 1921, FOM, TP; DSL to MC, April 14, 1922, Ibid. Report by Director TKN, Ballabey, December 18, 1923, ARS, 1P50-32. See also the estimate by Chief of Public Works Service to GS, January 15, 1924, SARS, DCF; Lachèze (DSL) to GS, January 17, 1924, ARS, 1P50-32.
103. See GS to GG, June 28, 1928, StL; GS to GG, September 19, 1928, SARS, Confid.; report by Aussel (Demongin mission), April 16, 1936, FOM, TP.
104. The table for 1914 was in SARS, 22G50; the table for 1930 was in SARS, DCF. See J. Lombard, Géographie humaine, pp. 21, 25-26, 31, 135-156.
105. The spacing was for technical as well as commercial reasons since a series of stations at spaced intervals was necessary both for water and for regulation of traffic on a single-track line.
106. The census figures for the cercle of Thiès, ARS, 1G296 in 1904 lists a total of 1,995 people at the village of N'Diourbel in East Baol, but this is not confirmed by the Rougier-Belle studies. The account by Belle originally dated May 30, 1904 and printed in Government General, AOF, DSL-TK, p. 114 specified only a halt at Diourbel, the seat of a French resident that "se réduit a quelques cases occupees par le personnel indigène de la residence. Le véritable village indigène est un peu au sud de Diourbel, à Diarren." The station was slated in this report for Sambé at KM 86. On p. 170, the population of the four villages of Sambé was estimated at 3,165 people.

107. The figures are for 1904 from ARS, 1G290 for the Sine-Saloum (indicating many villages of 500 to 700 people) and from ARS, 1G293 for Niani-Ouli. In Niani, the village of Maka-Colybentan had 1205 people at the time. Diourbel, Gossas, Koussanar and Tambacounda notably were adjacent to marigots. The Rougier-Belle trace took into account existing concentrations of populations on its way to Kayes, but the route finally adopted was determined more by topography and economic geography. See Rougier report, June 3, 1903, ARS, 062; Belle report, May 30, 1904, ARS, 063. The final trace skipped large villages situated further north, (some of them sites of abundant water at the junction of two different vegetative zones).
108. For Belle's description of Tambacounda, see DSL-TK, p. 152. Tambacounda became the chief center of the cercle in 1920. See J-F. Dupon, "Tambacounda, capitale du Sénégal Orientale," Cahiers d'Outre-Mer, April-June 1964, pp. 175-214, especially pp. 179-180, 207-213.
109. For a breakdown in passenger traffic by class, see the Legregram report, June 16, 1930, FOM, TP, pp. 33-34 Third and Fourth class passengers accounted for over 95% of the total number of passengers on the TN from 1925 to 1929. Despite the length of the line, the average distance travelled by a passenger in that period was between 86 to 99 kms. Neither first nor second class traffic was remunerative, but the two lower classes were.
110. Gunnar Myrdal, pp. 27-33.
111. From 1906 to 1914, a special well-drilling brigade operated in Senegal drilling by mid-1913 on the TK alone some 103 new wells (totaling 2952 meters of drilling depth). See Ballabey list, June 7, 1913, ARS, 087. Friry report, January 16, 1907, ARS, P37; situation report, Director Public Works, April 20, 1907, ARS, P38; Administrator Sine-Saloum to GS, December 23, 1910, SARS, DCF; same, December 22, 1910, Ibid., with two maps pinpointing locations of wells for 1910; report on Public Works situation, November 1913, SARS, DCF; Public Service Report 1913, ARS, 2G13-35.
112. See GG to GS, July 1, 1915, ARS, 2G15-6; report 2nd trimester, Ibid.; May report, Kedougou, ARS, 2G11-38; Kedougou reports, ARS, 2G12-57; Kedougou reports, ARS,

2G13-50; February-March report for Kedougou, ARS, 2G15-34.

113. S. Herbert Frankel, Capital Investment in Africa (London, 1938), pp. 375-376.
114. It is hard to draw any firm conclusions from statistics taken on a cercle-wide basis partly because of boundary shifts between cercles. Unfortunately changes during the crucial period after 1925 are obscured by several changes; viz., the merging of Djolof into Louga; the dismemberment in 1928 of Tivaouane between neighboring cercles, and the cession of the two cantons of Fandène and Diack (totaling 28,400 inhabitants in 1904) from Baol to Thiès in late 1927. See the report of the Chief of the Political Bureau, to GS, February 1928, FOM, AP3085; same, May 16, 1925, Ibid.; GS to GG, October 5, 1929, ARS, 13G17-17.
115. GG to GS, September 10, 1917, SARS, DCF. Van Vollenhoven commented: "It is certain that the prosperity of the Sine-Saloum and in a more general way the cercles traversed by the TK could only gain from notable augmentation of their farming population. But the means foreseen by M. Brocard, which consists of organizing a sort of official migration, of compact masses of natives of the Nigerian region to the Sine-Saloum, seems unrealizable in practice..."
116. Charlotte Quinn, Mandingo Kingdom, p. 27 noted Sarakole coming to the Gambia as navetanes before the conquest. The colonial administration acted to promote and organize the seasonal movement of navetanes in groups from 1932. Some notions of this can be gleaned from Economic report-1932, ARS, 2G32-40; Customs report, ARS, 2G32-6. Economic report 1933, ARS, 2G33-4; Economic report, 1935, ARS, 2G35-36; Economic report-1936, ARS, 2G36-3; Political report 1937, ARS, 2G37-17. The history of the navetanes is being studied by M. Phillippe David, a former French administrator, who wrote Gens de l'hivernage. Sur la route du Sénégal avec les navetanes de 1954 / Paris, 1955 /, Mémoire Ecole Nationale de la France d'Outre-Mer.
117. See especially Pelissier, Paysans du Sénégal, pp. 302-310. See also annual political report-1929, ARS, 2G29-15. The government of Senegal had discouraged settlement of Mourides along the Louga-Linguère rail-

road as late as 1928. See GS to Administrator Louga, February 4, 1928, SARS, Confid. The political report of 1934, ARS, 2G34-5 notes the movement not only of Mourides along the TK line, but also movements of population from Louga and Djolof toward these regions.

118. Pelissier, Paysans du Sénégal, pp. 302-310. Type report of Lucien Nekkach, Le Mouridisme depuis 1912 (Saint Louis, 1952), ARS-L.
119. Pelissier, Paysans du Sénégal, pp. 308-310. Pelissier added on page 307 that a spontaneous colonization of Tidjani Wolofs was also taking place along the railroad, but interestingly enough mainly in the sector between Gossas and Kaffrine, the same area favored by the navetanes.
120. E.g., see P.V., CC-St. Louis, September 15, 1923, SARS, DCF, pp. 8-9; the letter M. Carrie and Abrigeon to GS, July 17, 1923, SARS, DCF, expressed an interest by the Société des Etudes des Voies Economiques d'Afrique Occidentale in building Louga-Coki and Bambey-Gaouane lines. An economic conference under the aegis of Governor-General Carde, March 25, 1926, SARS, DCF, noted the usefulness of building lines into Djolof and the Casamance.
121. Syndicat d'Etudes de Chemin de Fer de la Côte Occidentale d'Afrique (henceforth SECCOA) to GS, October 13, 1927, StL; GG to GS, November 19, 1927, ARS, 6P46-36. Société Auxilliare Africain to GG, March 29, 1927, Ibid. described the formation of SECCOA. See also copy SECCOA to GS, June 9, 1927, Ibid., GS to GG, January 7, 1928, Ibid.; GG to GS, January 21, 1928, Ibid.; Note on 60 cm railroads, February 22, 1928. Ibid. The Monguillot report, February 10, 1938, FOM, TP, p. 22, remarked that SECCOA had only been an "emanation" of the DSL.
122. The "road-rail" system was proposed by Director of the Société d'Etudes des Voies Ferrées Economiques de l'Afrique Occidentale to MC, December 6, 1924, ARS, 6P42-36; see the brochures of the company for the Louga-Yang Yang, Bambey-Gaouane, Diourbel-Thiel, Bignona-Velingara and Sedhiou-Kaorane lines. See also MC to GG, April 10, 1925, ARS, 6P42-36; copy of GG to GS, June 18, 1925, Ibid.
123. The ARS dossiers 052 through 056 are concerned with

the Maury concession for a Louga-Linguère railroad. See especially GS to GG, June 6, 1908, ARS, 052; project of convention, February 7, 1914, Ibid.; reconnaissance by Aubrespin, May 24 to June 4, 1911, ARS, 053; Parmentier study, June 11 to August 5, 1911, Ibid.

124. The overall technical study was drawn up by the Chief of Senegal's Public Works Service, July 4, 1927, copy in FOM, TP. Construction of the Louga-Linguère Line by the colony was decided at the urging of the colony's Colonial Council by 1925. See copy acting GS to GG, August 8, 1925, FOM, TP.
125. See GG to MC, October 14, 1927, FOM, TP; DSL to MC, December 2, 1925, Ibid.; GG to MC, January 26, 1927, Ibid.
126. Report by Coste to MC, June 4, 1938, FOM, TP.
127. See note by Friry to IGTP, October 6, 1908, ARS, 065; Bouna N'Diaye to GG, December 26, 1920, ARS, 17G239-108; Bouna N'Diaye to GG, November 3, 1937, ARS, 13G48-17 credited Van Vollenhoven for getting favorable consideration of the Louga-Linguère railroad.
128. See the Thibaud report of July 22, 1914 on the Casamance railroad project, FOM, TP; Report by Ponty, January 19, 1915, ARS, 088; The Casamance project was raised again by Abdoul Diallo in the 1922 session of the colony's Colonial Council (GS to GG, March 3, 1923, ARS, 088; Olivier to IGTP, March 14, 1923, Ibid.). See Inspector Muller report on the Casamance railroad, January 1, 1928, FOM, TP; Muller to MC, May 17, 1928, Ibid. The Chamber of Commerce of Ziguinchor threatened to resign in 1926 because of delays in implementing the project. See also P.V., CC-Ziguinchor, session January 25, 1923, excerpt in SARS, DCF.
129. See the report by Monguillot, February 10, 1938, FOM, TP; High Administrator of the Casamance to GS, February 28, 1923, SARS, DCF; Report acting chief of Public Works, August 31, 1926, St. Louis; Beurnier to High Administrator of the Casamance, August 14, 1928, SARS, DCF.
130. P.V., Syndicate of Defense of Senegalese Interests, January 18, 1929, SARS, DCF; President, CC-Dakar to President Defense Syndicate, March 28, 1929, Ibid.;



GS to Administrator Baol to GS, April 16, 1928, SARS, DCF.

131. See annual political report-1929, ARS, 2G29-15. Formal approval for a complete Diourbel-Taltal line was obtained in 1931 (arrêté by GG, February 18, 1931); The section Diourbel-M'Backé was opened for partial exploitation as of April 1, 1931 (arrêté of March 28, 1931).
132. Myrdal, pp. 44-45.
133. In ARS, 6P438-36, tables of monthly shipments of peanuts from stations on the TN and Sine railroads, show that Diourbel only shipped out about 14,000 tons in 1933 (compared to over 40,000 tons in 1931), while the Sine escales of N'Doulo and M'Backé together shipped out a total of about 13,000 tons. For truck traffic, see project by Surleau, June 28, 1930, FOM, TP.
134. Inspector Monguillot report, December 20, 1937, FOM, TP; GG comment on report, April 9, 1938, Ibid. The note by Launay, October 18, 1935, FOM, TP, remarked that no serious effort had ever been made to develop land along the line.
135. See the report, annex n<sup>o</sup> 445, 2nd séance, session of November 22, 1906, Documents Parlementaires, Chambre, p. 148.
136. See the comments by Hopkins, Economic History of West Africa, pp. 72-77, on pre-colonial transportation problems.
137. A north-south African-based trade continued to flourish notwithstanding the east-west orientation of the export trade. When railroad traffic was cut with the breakup of Mali and Senegal in 1960, Mali developed a heavy truck traffic with Abidjan. See e.g. Claude Meillassoux, Urbanization of an African Community. Voluntary Associations in Bamako (Seattle and London, 1968) pp. 20-22. See also the remarks in Hopkins, Economic History of West Africa, pp. 243-253; R. Peterec, Dakar and West African Economic Development (New York, 1967), pp. 14-24.
138. The DSL was only 264 kms long, while the TK section of the 1220 km Thiès-Niger was 669 kms long (395 kms Thiès to Tambacounda alone).

## CHAPTER V

### RAILROAD LABOR

Le premier devoir de l'administration coloniale est de répandre chez les indigènes la notion de la nécessité du travail...

-special commission report, 1928<sup>1</sup>

The mobilization or channeling of labor for imperial ends lies at the heart of the imperialist enterprise. This may have been less apparent in other colonized areas, where looted mineral treasures have distracted the observer's attention. It was evident in tropical Africa, where the local labor supply was vital for all phases of economic and political activity, whether for growing export crops, building railroads, or carrying out even the simplest directives of the few imperial proconsuls on the scene.

European dependence on African labor in Senegal was aggravated by the general scarcity of labor in the region. Doubtlessly recalling the earlier slaving days, some misguided officials in Paris were urging into the 1890's that Senegal send manpower to other labor-short French colonies, such as Guiana in the Americas.<sup>2</sup> French officials and merchants in Senegal, better aware of their own colony's chronic labor shortages, were in turn trying unsuccessfully at the same time to promote the emigration of both Europeans

and non-Europeans into Senegal.<sup>3</sup> The problem was felt even more acutely after the conquest, as the scarcity of population throughout most of French West Africa became apparent and after colonial authorities launched extensive public works programs requiring large contingents of skilled and unskilled labor. By the 1920's, the colonial administration was openly resorting to the massive recruitment of involuntary manpower for both public and private needs.

The efforts of French colonial circles in the 1920's to enlist formal government support in intensifying the exploitation of colonial labor throughout French West Africa and the countervailing attempts of the International Labor Office at Geneva to abolish forced labor in European colonies clearly deserve more detailed treatment than is possible in this study. In brief, certain French companies, firmly dismissing the notion of some government officials that the colonies be formed into nations of free peasants, were urging instead in the 1920's that colonial authorities be specifically enjoined to recruit labor for French firms in the colonies.<sup>4</sup> As a result, in 1925, French West Africa received its first comprehensive labor decree, which was designed, even while establishing some wage, health, and work condition safeguards for African workers, to introduce into the colony "offices du travail" for labor recruiting and "conseils d'arbitrage" to prosecute infractions of the

labor contracts that African workers would be obliged to sign.<sup>5</sup> From 1927 on, the "2<sup>e</sup>me portion du contingent," an inactive army reserve consisting of the surplus of young Africans liable for military duty, was converted into a pool of unskilled labor for both public works and private industry.<sup>6</sup> Many other men would hire on directly with private firms or emigrate as "navetanes" simply to be exempt from this onerous service.<sup>7</sup>

Senegal stood apart to some extent, however, from this repressive trend in colonial labor policy, with only a few companies in its remoter areas taking advantage of the decree of October 1925.<sup>8</sup> This is not to deny the occasional abuse of African workers both in its remote and its urban areas.<sup>9</sup> Some involuntary labor was recruited within Senegal or brought into Senegal from other French colonies, first by direct recruitment and later by the 2<sup>e</sup>me portion.<sup>10</sup> Sometimes, as in the case of some Mossi brought in for railroad construction in the 1920's, recruited laborers could be horribly mistreated.<sup>11</sup>

Nevertheless, the abuses were infrequent and generally not widespread. Porterage was apparently rare in Senegal, even in the Casamance.<sup>12</sup> The new offices du travail and conseils d'arbitrage were generally disregarded in Senegal, where Africans had long been hired on a free and informal basis.<sup>13</sup> Indeed, one of the chief attractions of the

Senegalese labor market was its relative freedom, which drew many laborers and navetanes from other French colonies, just as others were also being drawn into neighboring British colonies.<sup>14</sup> Despite occasional labor shortages, European firms in Senegal, for their part, continued to prefer the informal hiring practices customary in Senegal, if only to avoid the expense involved in the worker care provisions of the 1925 act.<sup>15</sup>

Like other French colonies in Africa, Senegal imposed on its African rural subjects an annual labor service obligation ("prestations") for extending and maintaining bridges, roads, and other rural colonial facilities (such as telegraph lines). Yet even in this case, Senegal's comparatively light prestation obligation was redeemable in cash from 1928, and there are indications that prestations were generally applied with less rigor than in other parts of West Africa.<sup>16</sup>

Railroad labor Heavily dependent as they were on the quantity and quality of available workers and agents for a variety of functions for both the original construction of the rail lines and their later operation, colonial railroads can provide some particularly useful insights into labor problems in Senegal. For instance, it will be recalled that a scarcity of local labor had forced the Batignolles to import experienced Italian laborers at great expense in

order to build the DSL originally. The colonial administration had resorted to a similar expedient for the Upper Senegal railroad in 1881. But the Chinese and Moroccan workers imported for this purpose were decimated by yellow fever. It is significant that construction of the Kayes-Niger was only undertaken seriously from 1898, when a large African work force had been collected forceably and brought into the Sudan.<sup>17</sup> The experiment in importing non-African manual labor was never repeated. Henceforth, labor for construction of railroads and other public works was recruited locally or brought in from other parts of West Africa.

Labor questions were equally important for ongoing railroad operations. Wages and related employee costs, after all, formed the major share of operating expenses on both the DSL and TN railroads.<sup>18</sup> Besides the central management offices in Paris and Dakar, the DSL's employees were distributed among three main operating divisions--a Movement division called ("Exploitation") providing personnel to run the stations, terminals and trains, a Rolling Stock division ("Matériel et Traction") to run the locomotives and to repair and maintain rolling stock, and a Track division ("Voie et Bâtiments") to repair and maintain the track, roadbed, and company buildings.

There were four categories of employees at the DSL:

permanent European agents hired under contract with a monthly salary, European skilled workers under contract on an hourly basis, permanent African employees, and temporary workers ("auxilliaires"), the latter category including a few Europeans hired temporarily, but also including African skilled hourly workers and low-level, regular African employees, as well as a great mass of casual day laborers temporarily hired on a day-to-day basis.<sup>19</sup> The salary scale of a permanent or semi-permanent employee and his advancement in the company would be determined by his position within an array of occupational grades and classes presumably corresponding to his seniority and skills, which also roughly determined the specific job position that he occupied within the company's table of organization.

The TK and successor TN and DN railroads had similar operating divisions, although the TK did combine the Movement and Rolling Stock divisions for the first few years of its existence.<sup>20</sup> The gradings and echelons of regular employees, although differing greatly in detail, were similar to those of the DSL; but European employees were organized into a permanent administrative cadre ("cadre commun"; later a "cadre supérieur" and "cadre commun supérieur") or hired temporarily under contract. Some African personnel were hired on a permanent basis into an administrative cadre ("cadre local"; later divided into primary and secondary

levels); and a great mass of African regular and temporary workers were hired on a daily basis.<sup>21</sup> Unlike the DSL, the TK and TN always retained a Service de Travaux Neufs, largely run by military personnel and fielding a large work force. In 1926, for instance, this service employed 1,692 laborers, of whom 896 had been forceably recruited and 612 others obliged to "volunteer."<sup>22</sup>

The number of agents and workers employed by the DSL and TN over a number of years are shown in Tables 21 and 22. One point emerging from the tables is the large number of African day laborers, of whom the majority were employed for the hard manual labor necessary for maintenance work and freight loading. Another is the persistent employment of significant numbers of European agents, especially on the DSL--a particularly important point since Europeans were paid so much more handsomely than African employees.<sup>23</sup>

European employees From the inception of the railroad, it was necessary to bring in skilled and experienced railwaymen from Europe capable of organizing and controlling traffic, possessing the requisite technical specialties for maintaining, replacing, and repairing rail equipment, or simply literate enough to follow some of the manifold accounting procedures involved in shipping freight, selling and checking passenger tickets, and storing and distributing parts and equipment.



Batignolles management had paid lip service to the principle of European immigration when the ministry in Paris was proposing the permanent settlement of Italian laborers in Senegal.<sup>24</sup> Yet in hiring European agents for the DSL, they were estimating privately instead that a European's health would not be able to resist Senegal's climate for a period longer than six years and limited the duration of the contracts of DSL agents to this maximum period of six years.<sup>25</sup> Indeed, during the first few years of operation, the attrition rate among DSL European employees was extremely high. In 1887, an estimated 8½% of the DSL's European agents died, and another estimated 16% had to be discharged for poor health, while many others were incapacitated by ill-health for short period of time.<sup>26</sup> Of the 197 "permanent" European employees hired by the DSL from 1883 to 1885 for work in Senegal, 120 of them (61%) had left the company within two years (90 within one year). Twenty one of them died within their six-year period (9 within their first year of service), and 52 more are listed in company records as having left for health reasons.<sup>27</sup>

With time the DSL came to realize that Europeans could be employed on a long-term basis in Senegal if certain precautions were observed.<sup>28</sup> Sixteen of the original 197 survived to serve for periods longer than six years, nine of them serving for more than 15 years (5 for more than 20

years). The DSL took care to repatriate its European agents with their families to France for a three month vacation at two-thirds pay for every two years of service in Senegal.<sup>29</sup> The company's staff became more stable as working and housing conditions improved.

The TK railroad and its successor TN, coming into existence as they did at a much later date when conditions in Senegal were more amenable for accommodating European agents, did not suffer from the same initial upheavals in staff. It must be remembered that the bulk of European personnel hired for the TK and TN railroads became, thereby, fonctionnaires working for a government agency on a long-term basis. Many of the posts on these railroads were filled by military personnel attached for this purpose to the railroad, and many railroad civilian employees were retired colonial officers and sergeants, deliberately hired by the railroad because of a proven acclimatization to West Africa.<sup>30</sup>

The lot of a DSL European railwayman was not particularly pleasant during the period preceding World War I. Recurring epidemics of yellow fever continued, at least to 1927, with European agents and their families having to be withdrawn from the colony en masse during the severe epidemic of 1900-1901.<sup>31</sup> Company operations were centered at Dakar, which was always regrettably short of good housing. At

first, DSL agents often had to resort to makeshift arrangements (as sleeping in railroad cars) or to dormitory facilities that the DSL rented to its agents in a converted freight station.<sup>32</sup> Along the railroad line, the hastily-erected wooden stations housing the stationmasters quickly fell into disrepair.<sup>33</sup> The discovery after 1900 of the mosquito's major role in transmitting yellow fever obliged the DSL to pay more attention to the sanitary and housing needs of its personnel and their families at the same time that a large influx of Europeans was exacerbating the housing situation in Dakar. The DSL in that period undertook to build new housing for its European personnel and to purchase some well-located houses in Dakar.<sup>34</sup>

The Thiès-Kayes railroad was concerned with housing for its European employees from the start. But it was the efforts of the unified TKN to attract large numbers of new rail employees after fusion in 1924 that led this railroad administration to appropriate over 4 million francs for European housing in 1925, over 3.5 million in 1927, and over 6 million from 1928 to 1930.<sup>35</sup>

A number of litigations brought by DSL railwaymen against the company in the 19th century are the only remaining echoes of the grievances of European DSL agents.<sup>36</sup> It is in a report of 1911 investigating DSL operations, though, that the company's exploitation of its European employees is

more clearly exposed.<sup>37</sup> According to this report, many an unemployed worker in France had been lured to the colony by the misleadingly high pay offered by the DSL. Once in the colony, the newly-hired worker would discover that his high colonial wages were relatively meager in view of Dakar's extremely high cost of living. Effectively, the agent was forced to work long hours of overtime for the company, at a peril to his health, in order simply to make ends meet. Since an agent's work contract entitled him to prepaid passage back to France only under certain conditions, he was virtually trapped in his job, unless he was able to find employment in commerce (the colonial administration apparently had agreed tacitly not to hire DSL men).<sup>38</sup>

Frustrated railwaymen took out their grievances against the company, the report lamented, by serving the public badly and rudely.

The plight of European railroad employees as depicted in the report of 1911, while probably accurate, is too narrowly drawn to give a complete picture of the complex situation of these railwaymen. There were, after all, agents who prospered with the DSL and TN in long-term careers. On the other hand, there were also a number of European railwaymen ready to take advantage of their positions either by setting African rail subordinates to work for the European agent's own personal benefit or by brazenly cheating African

passengers too ignorant of French procedures and of their own rights--or too frightened to insist upon them.<sup>39</sup> It should be remembered also that European agents occupied the better paying, less strenuous posts on the railroad from which they were expected to oversee and direct the African workers, who carried out, after all, the heavy labor.

African manual labor The colonists' admonition, "any European who digs in the earth, digs out his own grave," was indeed heeded on the railroads in Senegal. Both the DSL and TK had to rely on Africans hired on a casual day-to-day basis to fulfill the backbreaking tasks of loading and unloading (freight cars, coal, etc.), maintenance and reconstruction of the track and roadbed, **lifting** heavy machine parts in the repair shops, and so on. In the DSL's Track service, even the Europeans who had originally formed the majority of the foremen of the track work gangs--an arduous task in the sun's heat--had to be replaced gradually after 1889 by experienced African foremen.<sup>40</sup> By the time the TK was built, virtually all its maintenance work gangs were directed by African foremen.

There were a number of other enterprises in Senegal competing with the DSL and TN for unskilled day laborers. Merchants needed manpower for hauling and stacking peanuts and other goods at their trading stations in the interior and at ports, and to load and unload ships. The colonial

administration and private contractors needed workers for public works projects and municipal works (streets, sewers, etc.) in the communes. It should be noted that the total number of African wage laborers of all types accounted for only a small fraction of the able-bodied men in West Africa --only an estimated 60,000 men for all of French West Africa in 1928. Furthermore, many of them were concentrated at Dakar--the worker population of Dakar in 1924 was estimated at 15,000.<sup>41</sup> Tables I and II indicate that the DSL and TN accounted for a significant percentage of the total work force, and a tabulation of some 5,491 Africans regularly employed for 34 different firms in Dakar in 1930 listed over 550 regular African employees for the DSL--a contingent second in numbers only to the 1,070 men employed at the time by the Entreprises des Travaux du Port de Dakar.<sup>42</sup>

Despite the relatively small number of workers needed, there were severe manpower shortages in Senegal from the end of World War I. This was due, to a degree, to demands made on local manpower by military conscription for the colonial army from 1912, as well as by government recruitment for local and general public works. The shortage of casual labor for loading ships at Dakar became so severe by the waning days of the war, that it was only resolved by the administration's importation of forced labor recruited in other parts of Senegal and the Sudan.<sup>43</sup> But plainly, the

steep rise in wages received by African laborers during the post-war period, which was partly a reflection of rises in living costs and the devaluation of French currency, was made possible largely by a significant increase in business activity in the area. As might be expected, merchants were complaining bitterly about the supposedly unfair, high wages that African workers were asking, and they were demanding through the local chambers of commerce that the administration intervene.<sup>44</sup> The TK was also experiencing difficulties--the shortage of African laborers to load peanuts onto trains in 1925 was a major cause of bottlenecks in TKN operations--and this railroad was also appealing for government intervention.<sup>45</sup>

The TK had already resorted to forced labor for construction of unfinished sections of its line as early as 1913.<sup>46</sup> In the early 1920's, the construction of the TK line was finally completed by using large contingents of forceably recruited African laborers, most of them Mossi brought in from Upper Volta. From 1927 on, about 1550 men on the average of the 2ème portion du contingent of the French Sudan was regularly assigned to the TN, despite the complaints of the Lt. Governor of the Sudan against their use in Senegal when the Sudan was suffering from its own labor shortages.<sup>47</sup> The evidence indicates that the DSL, on the other hands, rarely resorted to requisitioned labor.<sup>48</sup> At least on

occasion, the DSL was able to use its Track maintenance crews for loading trains during the busy trade season.<sup>49</sup>

And, of course, the DSL also benefited indirectly as the conscripted laborers imported for other employers, such as the TN, eased shortages generally in the labor market.

Labor in Senegal, it has been noted, was generally hired on a voluntary basis. In the case of hiring in rural areas though, a careful distinction must be made, for often the French would recruit laborers in these areas simply by applying directly to local chiefs. It was the chiefs who were made responsible by the colonial government for raising prestation labor annually. Indeed, labor recruiting for prestations was one source of the chiefs' authority under French rule.<sup>50</sup> Hiring laborers in groups was, of course, a natural expedient in a society where communal solidarity was strong; but it may be asked whether recruitment was truly voluntary in all cases. Mouride talibés volunteering to work on the Diourbel-Touba rail spur were almost certainly really volunteers. But it is doubtful that this was true for Africans recruited for clearance work in the original construction of the DSL in the 1880's or for the labor recruited locally for construction of the Louga-Linguère line by chiefs strongly favorable to the project.<sup>51</sup>

Those unskilled laborers willingly offering their labor for wages in urban areas can be generally classified into



two categories. Those living adjacent to work sites-- generally farmers willing to supplement their income during the agricultural slack season after November--and those emigrating deliberately to earn wages for a short period with the intention (like the navetanes) of returning home, usually at the end of the trade season, with trade goods and head tax payments. As one former DSL laborer (in Track maintenance) of the 1920's explained, a young man would emigrate for a season to join a work crew where some of his relatives might already be working. He would intend to work for a season only, living as frugally as possible, but would acquire a taste for the work and the money it brought. He would be drawn to return year after year, and finally be induced to settle down permanently in the vicinity of his work on the railroad.<sup>52</sup>

Not that the regular unskilled laborer divorced himself entirely from the land. Many laborers who came to live in the vicinity of the urban areas and along the rail line, even those who were employed full time by the railroad and even some who were skilled workers, continued to farm at least on a part-time basis and, in the case of the Lebu, to fish.<sup>53</sup> This was not unwelcome to European employers, because their workers could thereby get along with lower wages and would have something on which to fall back during slump periods when wages were not available. This meant, naturally

that labor would be scarce from planting to harvest. But this was not objectionable in an economic system based largely on exporting peanuts, for which the busy exporting season coincided with the agricultural slack season.<sup>54</sup>

Indeed, even officials in the colonial government considered in the late 1920's that recruited laborers would be happier during their turn of service if they were allowed to cultivate their own food in their spare time.<sup>55</sup>

It would be worthwhile to know more about the organization of work gangs on the railroad. A report of 1907 indicates that, in general, piece rate payments were not welcomed by African day laborers in Senegal.<sup>56</sup> The usual method adopted was to pay daily wages while supervising the output of the work crews closely, discharging the crews that did not produce at the expected rate. Given the unstable employment of individual temporary laborers, this meant that European management would probably depend greatly on the ability and reputation of the African foreman organizing the crew. Indeed, although the railroads kept pay records listing individual workers by name, there are indications that payments to crews may have been made, at least at times, in monthly lump sums to be divided among the workers on the crew.<sup>57</sup>

It would be of considerable interest to learn the origins of the African laborers working for the DSL and TN.

Records unfortunately are lacking in this respect; but a few chance references indicate that most of the African laborers hired by the DSL, at least in its formative years, came not from nearby Cayor, Serer country, or Baol, but were rather Tukolor, Sarakole, and Bambara of the middle and upper reaches of the Senegal river--groups which had already been serving as the bulk of the floating labor population for the commerce of St. Louis.<sup>58</sup> With time, of course, many Wolof also came to work for the railroad, probably coming to form the majority, at least on the DSL. But the facility with which many African immigrants Wolofized their names (and in time their speech and culture) makes it difficult to be precise on the evolution of the work force with time. Tukolors, it is generally agreed, were particularly numerous in the Track service and were highly valued as laborers for construction work on the TN line.<sup>59</sup> Bambara were also prominent as laborers in all branches of railroad service and were especially numerous on the TN line. The Sarakole, as we shall see, were especially drawn to work on locomotives.

The movement of African workers and their hiring by European employers in Senegal was not regulated by official government statute until the 1890's. From 1891, the colonial administration became increasingly alarmed as agents of the Belgian Congo began to recruit Senegalese for work in that

colony (some as laborers, some for specialized skills some--claimed the French--as soldiers). Conducted openly at first, later clandestinely through various subterfuges, this recruiting, which drew significant numbers of Senegalese to the Congo (the French consular office at Bathurst estimated in 1897 that as many as 1300 Senegalese had passed through there to the Congo in the previous year), provoked the first labor legislation in Senegal. A series of acts forbade foreigners to recruit Africans without government assent and ultimately restricted African emigration.<sup>60</sup>

Given the limited labor supply, it might have been expected that European employers would be concerned about their laborers' well-being or at least attempt to husband this manpower by substituting mechanical power for human. But expensive imported mechanical devices tended to wear out quickly in a tropical climate where there were few skilled workmen to maintain them properly; and many employers, colonial officials lamented, were all too willing to squeeze profits out of underpaid, overworked African laborers with the blind assurance that the colonial administration would provide replacements by dipping into a seemingly inexhaustible pool of cheap manpower--whereas in reality manpower resources were strained to the breaking point.<sup>61</sup> That there were fewer abuses in Senegal (though they were not inexistent) is strongly indicated by the large, voluntary season-

al flow of immigrant laborers and navetanes into Senegal. Abuses were also much less likely to occur in the operating divisions of the railroads, which as the only really industrial enterprises in Senegal aside from the naval arsenal at Dakar, were obliged to hire not only unskilled laborers, but large numbers of skilled African workers as well.

African skilled labor Africans had long been drawn to European colonial trading posts and ports not only for the attractive trade goods available there, but also for the specialized skills which Europeans might teach.<sup>62</sup> This was certainly why many Africans of the interior came to enlist in the French colonial armed forces before and during the era of conquest, since many of these soldiers returned to their homelands on discharge with newly acquired martial skills--which in some cases were turned against their former European mentors.<sup>63</sup> Likewise, other Africans would come to European ports, as St. Louis, to learn European skilled crafts in order to pursue this trade within the colony or back in the interior.<sup>64</sup> The most famous example of the latter was certainly Samba N'Diaye--a Bakiri of the Upper Senegal, despite his Wolofized name--who became the chief cannoneer and military architect for El Hadj Umar when the latter conquered an empire in the interior.<sup>65</sup>

There were, of course, the traditional specialized

artisans of the Senegambian-Sudanese region, highly skilled in their inherited specialties in metal-work, leather, or weaving. Some of these, like the Wolof gold jewellers, justly enjoyed fine reputations for their excellent workmanship. Their husbanded skills reach back to an era long antedating contact with Europeans.<sup>66</sup> But these artisans were formed into special, hereditary castes, like the traditional musicians and praise-singers, whose members might become wealthy and even be feared, but with whom "honorable" families avoided marriage. The "European" skills, even those involving metal and woodwork, were regarded in an entirely different light than the traditional artisan skills.<sup>67</sup> Education in a European "métier" was sought by people from different strata of society, not just the members of the traditional castes; nor did the exercise of the skill "dishonor" the artisan. The reader would naturally expect that métiers on the railroad would serve as opportunities for ambitious slaves or their descendants for advancement in society. He might be surprised to learn that they also served as particularly well-paying opportunities for the sons of notable families, especially those literate enough for clerical positions in commerce or the colonial administration, after the French conquest had eroded the traditional means of support of the notable classes.<sup>68</sup>

An obvious solution to the heavy financial burdens on

the railroads--of high salaried European agents brought in at great expense, periodically repatriated for health reasons, escounced in special housing, and not operating at par in a foreign climate--was to train and educate Africans to take over their positions at more modest salaries.<sup>69</sup> In the case of the DSL, a certain delay might be expected from the inception while sufficient numbers of Africans were being trained in the requisite skills--no mean feat when most Africans had first to learn French before mastering the unfamiliar railroad techniques. Indeed with time, a significant number of Africans became permanent employees at the DSL either at lower-echelon positions in the company's bureaucracy, as skilled workers in the workshops, or as locomotive engineers. Yet the top and higher middle-echelon posts in all branches of the DSL were always reserved for Europeans. In all the years of DSL operations, only three Africans were ever allowed to attain the grade of station-master and only one held it for any length of time (serving in the small way station of Rao). Africans became train engineers (though the title of engineer was at first withheld) only because European engineers could not endure the heat in a coal-burning locomotive under a tropical sun.<sup>70</sup> One might have expected government officials to have been pressing the DSL to reduce its heavy expenditures in the first few years of operations by substituting African

employees for European. But L. Petyt, the main government financial inspector in the company's formative years--who went so far as to urge the DSL to close the company hospital in order to economize--was also insisting at the same time that Africans be barred from responsible posts on the DSL, and particularly complained against letting Africans run the locomotives.<sup>71</sup>

National, cultural, and racial prejudices were clearly involved in the persistent preference on the DSL for the employment of European agents where Africans would have functioned just as well. But this is not a complete explanation. One piece of evidence indicates a fundamental, rather obvious motive, to which there is rarely an explicit, written reference. Referring to the high cost of the company's European employees in Senegal, a DSL publication of 1888 explained their need. The European, it stated:

ne représentant que 18% de l'effectif total ...  
D'ailleurs, à dépasser la limite actuelle on  
s'exposerait à se mettre à la merci des indigènes,  
dès qu'ils se sentiraient maîtres de la situation.<sup>72</sup>

This frank admission of insecurity--indeed of an underlying elemental fear--was perfectly understandable shortly after Mamadou Lamine's Sarakole jihad and only shortly before Tukolor rail workers were to aid Ahmadou's raiders to cut the fledgling Upper Senegal rail line.<sup>73</sup> This particular concern was indeed affirmed just a bit further in the publication as it cautioned:



Il est nécessaire également de mêler dans les équipes des diverses races noires, Saracolets, Bambaras, Toucouleurs, Sérères, Gabonais, Yoloofs, afin de ne pas se mettre à la discretion de fanatiques ou d'indisciplinés.<sup>74</sup>

There is no question that European uneasiness must have diminished as French colonial rule was consolidated. Certainly the severe yellow fever epidemic of 1900-01 during which operation of the DSL was virtually in the hands of its African employees, must have clearly demonstrated that they could be relied upon.<sup>75</sup> Yet, diminished as it must have been with time, the underlying element of fear and insecurity was never wholly absent. Rather, it appears to have been comingled with the self-serving interests of European agents who were pursuing long-term careers with the DSL later on. These agents now had a stake in preserving the discriminatory status quo which had come to be institutionalized on the DSL. After World War I, colonial officials remarked on a notable improvement in the technical proficiency of African workers on the railroads. Nevertheless, they also noted at the same time the emergence of a new and disquieting independent attitude on the part of many of these workers, especially those who had seen military service in France. <sup>76</sup>

There was significantly different attitude on the TK and the TN toward allowing Africans into more responsible positions than on the DSL, although the top and middle-

echelon posts were also reserved on those railroads for Europeans.<sup>77</sup> It may be argued that this was due in part to the fact that the TK was built during an era of imperial tranquility, with diminished fears for security. Certainly it was also due in part to the continued pressure on the TN railroad administration to cut operating costs, particularly after 1924-25.<sup>78</sup> Perhaps though, it stemmed in good part from the character of top officials in the railroad administration, most retired or detached active army officers and sergeants who were accustomed to commanding large bodies of African troops and who were therefore able to form good opinions of the abilities of African subordinates before coming to the railroad. Certainly European military men with experience in the colony would have a greater self assurance about their own personal role in West Africa and feel less uneasy in commanding Africans than the civilian European agents of the DSL, who after all were protecting acquired, but fundamentally vulnerable positions.<sup>79</sup>

This is not to say that African employees were necessarily better off working on the TK or TN. The use by these railroads of requisitioned labor has already been mentioned. Those who worked on these rail lines also recall the distinctly military tone in work discipline, which gave these railroads a harsh reputation. Work discipline on the DSL could also be strict; but some ex-DSL men at least still

harbor a nostalgia for the company.<sup>80</sup>

It should be emphasized, however, that the TK and TN, unlike the DSL, did set out to hire large numbers of educated Africans. As government agencies, these railroads were prepared to accept the graduates of primary and technical schools that were run by the Government General or by the colony of Senegal. A very few well-educated Africans were even admitted into the Cadre Commun Supérieur on the TN, especially after 1925.<sup>81</sup> Retired railwaymen recall though that the railroad administration did not actively undertake to attract large numbers of young, French-educated Africans until later, in 1937, under Giran's directorship of the Dakar-Niger railroad.<sup>82</sup>

In considering what particular categories of African skilled craftsmen might have been drawn to working for the railroads, one immediately thinks of the inhabitants of St. Louis and Gorée as forming a pool of skilled workers as well as clerical help for the railroad. But St. Louisians of long residence were generally reputed averse to taking up a workman's trade. This went back at least to 1855, when according to Carrère and Holle, St. Louisians, previously so eager to learn métiers before 1848, were now leaving them to recent Tukolor, Bambara, and Sarakole immigrants.<sup>83</sup>

St. Louisians of good family preferred to engage in commerce, to be clerks for merchants, or to serve in the

colonial administration. A number of St. Louisians had been educated in France; some, such as Justin and Georges d'Erneville, had even received a technical education and served for a time in the colony's Public Works service.<sup>84</sup> There were indeed a good number of St. Louisians and Goréens, both African and creole, in all branches of the colonial government's bureaucracy, including the technical service of posts and telegraphs.<sup>85</sup> But few St. Louisians entered DSL ranks, even in clerical capacities, because DSL management based in Dakar apparently regarded St. Louisian creoles with disdain almost from the start.<sup>86</sup> Many St. Louisians preferred, in any case, to engage in commerce or land speculation (such as the above-mentioned Justin and Georges d'Erneville). When commerce became less attractive after the turn of the century, it is apparent that they chose the more hospitable ranks of the colonial bureaucracy over the DSL railroad.<sup>87</sup> As such they became part of a larger general movement of young, educated West Africans who were coming to grips with colonial domination in the 20th century by taking positions within the French colonial administration and demanding equal treatment with their European counterparts.<sup>88</sup> It was by this means that some entered the new Thiès-Niger railroad, another branch after all of the colonial bureaucracy. Even in this case, educated St. Louisians apparently would serve on the railroad only if unable to gain a post in other, more

attractive branches of colonial service, such as tax collection and "conditionnement."<sup>89</sup>

The ethnic composition of the skilled labor force in either the DSL workshops in Dakar or the TK workshops in Thiès is difficult to determine precisely. It seems that, despite their small number, Goréens were prominent as skilled workmen in the shops; and even as locomotive engineers.<sup>90</sup> The Lebus of Dakar, as might be expected, became prominent in the main DSL workshops in that town, but apparently only around the turn of the century.<sup>91</sup>

The corps of locomotive engineers deserves a special mention. Its members were of diverse origins, of course, but it contained a significantly large proportion of Sarakole from the very first. The Sarakole had long been renowned for emigrating temporarily as young men to seek fortune outside their homeland on the Upper Senegal.<sup>92</sup> Many of them temporarily became petty merchants--"dioula"--on the long-distance trade routes of the interior. Others went to the coasts of the Senegambia to farm as navetanes or serve as mercenaries.<sup>93</sup> A good number of them were attracted to urban areas of Senegal to work for merchants or the French administration, particularly as sailors on ships in the Senegal river or on the ocean.<sup>94</sup> It was easy for them to make the transition from steam-driven boats to steam locomotives, and the Sarakole quickly became renowned for relishing the

prestigious role of driving the iron behemoths.

Clerical skills naturally would be learned in the schools set up by the French in the colony. A *métier* whether it was a skilled craft or a specialized job, like that of a train engineer (who also had to make minor repairs), might be learned at one of the few trade schools in Senegal open to apprentices.<sup>95</sup> It was more likely, however, that a young man would learn a trade skill during a term of apprenticeship with an older, skilled workman (at whose home he might live). Even if both teacher and pupil were both illiterate in French, they were often capable of attaining high technical precision with only rudimentary tools.<sup>96</sup> Often a skilled craftsman could train his own son or nephew on the job at the railroad, until the young man was ready to apply directly to a railroad manager for a job as a skilled apprentice (by passing a simple craft test for admission). In fact before training in regular trade schools became common, the railroad administration preferred to hire the sons of regular employees.<sup>97</sup>

Employment stability Skilled craftsmen, like the general mass of laborers, were often unwilling to be employed at the railroad, or with any other one employer, for any extended length of time. Instead, many of them preferred to move as temporarily employed day laborers from one job to the next, better-paying job, depending on the work avail-

able. This tendency is related to the phenomena called the "backward-sloping labor supply curve."<sup>98</sup> Simply put, it means that the African worker, especially the seasonal migrant, often labored with a target sum in mind. Once the sum was amassed, he would quit his job. Increased wages, according to the theory, only hastened his departure, lessening productivity instead of raising it. Some scholars, such as Pfefferman, argue rightly that European employers exaggerated the importance of the phenomena and the transiency of their African employees simply to justify paying low wages.<sup>99</sup> Even the colonial administration, which was capable of deploring the greedy exploitation by private firms of African laborers, was itself not exempt from recruiting unskilled workers at low wages on a short-term basis, rather than paying the additional costs for long-term workers with greater productivity.<sup>100</sup>

There was, nevertheless, a real reluctance on the part of many Africans to work for Europeans on a long-term basis. Target wages may have been one factor in the case of some skilled African workers, especially if these workers could fall back on some lucrative alternative (as farming). But this factor was far more important for the seasonally migratory unskilled laborers. In the case of skilled workmen, an instinctive, culture-bound aversion to long-term labor obligations, which implied a servile relationship in

the Senegambia, may have been far more important--especially since the French were also resorting to formal contracts elsewhere as a means of enforcing work.<sup>101</sup> Mobility in employment was also a matter of practical self-interest, for a skilled worker often was able to find a higher paying job or better working conditions somewhere else at a given moment. Many would move from the DSL to the TK, to Public Works, or the naval arsenal, and back again--but for higher wages, not for the sake of change alone.<sup>102</sup> An extreme example of this job mobility was the Belgian Congo's recruitment of Senegalese workers in 1896, when the DSL lost at least 17 locomotive engineers of various grades and 6 skilled workers who left for higher paying jobs in the Congo.<sup>103</sup>

Interestingly enough, when asked what as railwaymen had set them apart from other Senegalese, to a man the retired Senegalese railwaymen could suggest nothing except the assurance of a steady salary and comforting retirement pay that they had received from the railroad. Their common unpretentious answer perhaps goes to the heart of the matter. The railroads, as other European firms, did offer steady salaries, even in the early days. But they were pitifully slow to arrange for any long-term employee or retirement benefits, which might have stabilized their work force earlier.<sup>104</sup>



Railroad employee benefits France notoriously lagged behind other industrialized European nations in passing legislation to guarantee social benefits and work protection to its workers in the late 19th and early 20th centuries. A law on work accidents was passed only in 1898, working hours for women and children was limited to 10 hours daily in 1900, and a six-day week made obligatory only in 1906.<sup>105</sup> It is not surprising therefore to find European employers in Senegal resisting attempts to extend any metropolitan social legislation into the colony.

Out of necessity, the DSL ran a hospital and medical service for its employees.<sup>106</sup> It also permitted its European employees, again out of necessity, long vacations in France every two years during the railroad's slack season. For a number of years though, its only other benefit arrangement for European employees was a bonus of one year's salary payable in a lump sum to the employee only if he survived to complete a full six years service. There was no provision for sickness and accident benefits--a serious matter in Senegal, since an unlucky agent might find himself simply repatriated back to France with few resources and his health broken. In 1893, the company did begin, in conformity with a metropolitan law of December 1890, to set up for its European employees a retirement fund, which accumulated regularly (from 1894) 5% of its employees salaries along with

twice as much in matching company funds in a specially earmarked account. But company officials had not even bothered to draw up a statute regulating disbursement of these funds to its personnel, even as late as 1898.<sup>107</sup>

The DSL's pension plan, finally elaborated fully in 1903, was not far different from the earlier bonus of one year's salary after 6 years of service. Aside from 5% withheld from his salary, the agent would receive company funds equal to 13% (later 16%) of his total accumulated salary only after six years of service with the company.<sup>108</sup>

After World War I, the fringe benefits accorded to European DSL agents did improve.<sup>109</sup> This was a reflection not simply of changes in metropolitan law, but more importantly of increased worker militancy in the colony after the war.

European employees of the Thiès-Niger were more fortunate in this respect than DSL employees, since as agents for an autonomous government agency their employee benefits tended to parallel those given to other fonctionnaires in the colonial bureaucracy.

Demonstrably reluctant to accord benefits to their European agents, employers in Senegal were certainly less willing to accord any to their African personnel. In response to queries about extending metropolitan laws on pensions to West Africa, Senegalese chambers of commerce objected that its administration would be extremely diffi-

cult, because most Africans lacked a civil identity (registered birth, marriage, etc.) and because so many Africans moved about freely in urban areas changing their names at will.<sup>110</sup> Even accident insurance was opposed on the grounds that Africans could easily obtain the traditional charitable aid available in their own society; and some even claimed that accident insurance would only lead some Africans to mutilate themselves deliberately in order to get it.<sup>111</sup>

In this respect, the DSL was better than most. At least the DSL set up a retirement fund for its permanent African employees in 1908. In one account, 2½% of a worker's salary would be set aside, payable to him with accrued interest whenever he left the company; while a second account fed by company funds equal to 5% of the employee's salary would be payable in full to him in a lump sum only after 20 years of service (a part of it after 15 years).<sup>112</sup> This was not much; and during the period of labor militancy following World War I, African workers concentrated on improving salaries and allowances, not pensions. It was only later that pension benefits came to be appreciated.<sup>113</sup>

Strike activity Labor militancy in the period before 1933 was seriously circumscribed. French subjects in French West Africa were not permitted to join labor unions; nor were labor unions officially permitted to form as such until

1937.<sup>114</sup> An industrial labor consciousness and solidarity among Africans in Senegal, at least as expressible specifically in French terms, did not emerge clearly until the great railroad strike of 1947-1948, and to a much lesser extent in the strike of railroad day laborers in 1938.<sup>115</sup> Nevertheless, the period before 1933, an era of labor "pre-history" for Senegal as it were, is instructive for understanding later developments and the patterns of transformation of African labor.

There were attempts, it should be noted, to form unions well before 1937. European railwaymen on the DSL were trying to form a union as far back as 1908.<sup>116</sup> But the courts denied them this right, because the law of 1884 permitting unions to be formed in metropolitan France had not yet been promulgated in French West Africa. In 1920, an act signed (inadvertently) by the Governor General seemed to have promulgated the act of 1884 in the colony. But it did so in such an ambiguous fashion, that in the face of the colonial government's opposition it was unclear whether the formation of unions had really been permitted or not.<sup>117</sup> In this legal twilight period after 1920, however, the colonial government did permit the grouping of rail employees in "associations amicales"--organizations, which were not exactly unions, but were entitled to a legal personality, could collect dues from their members, and thereby give

workers a voice in the defense of their economic interests.

Naturally, there was strike activity even without formal worker organizations. The DSL locomotive engineers went on strike briefly in 1909, and there were isolated strikes in other sectors of the economy as well.<sup>118</sup>

Historians of African labor will find the DSL strike of April 1919 instructive. It broke out in response to rapidly increasing prices and embraced virtually the entire personnel of the DSL.<sup>119</sup> Since the strike leaders remained anonymous in view of the ban on unions, there were no worker representatives available to negotiate with management. The government therefore decided to break the strike quickly by simply inducting railroad personnel into the military (the same expedient used to break railroad strikes in France). In Dakar, European personnel confronted with induction submitted immediately. But the strike held, simply because the African personnel, especially the critical locomotive engineers, could not be located--and the trains could not run without them.<sup>120</sup>

The colonial administration was naturally worried about the bad example that European workers were giving their African subordinates. Even more important was the demonstrated dependence of the European workers on the support of the skilled African workers, and this lesson was strongly reinforced by events shortly following the strike. Realizing

that their successful, but too hastily conceived strike demands had been too meager, the African workers proposed to launch a second strike and appealed for support from their recent European strike comrades. The African DSL workers were scornfully rebuffed by these now-satisfied European workers, but proceeded nevertheless on their own-- and won the additional gains.<sup>121</sup>

After 1920, new labor associations were formed on both the DSL and TK. An amicale was formed on the TK in 1920 and amalgamated with one on the KN in 1924. Europeans and Africans had separate "committees" on this association, but a separate association was created for African TN agents in 1929.<sup>122</sup> Both European and African employees within the DSL each formed their own separate active associations from the first. The activities of these organizations were circumscribed. But they could channel the grievances of workers to railroad management, and they certainly served to school a generation of African workers and their leaders in handling labor problems. Even illiterate African subjects, though theoretically not permitted to join, could in fact make their grievances known through the associations. The associations were a two-way street in another sense. The closely detailed police reports on meetings of even small numbers of railwaymen reveal that they also served in keeping the colonial government well informed of the mood and

intentions of rail workers and their leaders.<sup>123</sup>

By 1925, in the face of rapidly rising prices, both European and African workers were again prepared to strike for higher pay and benefits. Their actions were now markedly different than in 1919.<sup>124</sup> Not only were the workers on the DSL better organized to win a quick strike, but this time the TKN workers were also prepared to carry out their own threat to strike. DSL workers actually went on strike for several days; but no strike was necessary on the TKN. In the year of crisis in overloaded rail transport, neither the DSL nor the TKN could afford a strike; and so both were obliged to satisfy worker demands quickly.

Historians may be tempted to posit a linear progression in African worker sophistication and strength from the years 1919 to 1925 to 1938 to 1947. This might be true in limited respects, but would be entirely misleading in others. Governor General Carde was furious about the labor unrest of 1925 on the railroads and because of it refused to allow legalization of unions in the colony later that year.<sup>125</sup> The government's riposte was not long in coming. On the TN, Chardy, the new director, brought in new railwaymen from Europe as short-term "contractuals" in order to balance and weaken the TN's militant cadre, while the broom which he wielded against incompetents on the railroad was certainly directed against the "troublemakers"

of 1925 as well.<sup>126</sup> At the same time, Chardy acted to gratify basic employee needs by such actions as setting up food-buying cooperatives on the TN for both European and African employees, with the administration of the African cooperative firmly in the hands of the TN administration.<sup>127</sup>

The DSL associations were stronger and more cohesive. They were able to threaten strikes as late as 1929, and even 1931, and were able to obtain higher levels of overall pay and benefits than their TN compatriots.<sup>128</sup> But this gave them little respite as the economic crisis that began in 1928 induced the colonial government to purchase the DSL from its owners. In the aftermath of the government's takeover in 1933 and the abundance of labor during the depression, the ranks of the DSL workers were decimated and they were cowed into quiescence.<sup>129</sup> A close examination of events leading to the labor strike of 1938 would probably show that the seeds of unrest did not come from the successes of 1925, but from the subsequent repressions of 1927 and 1934.

Tentative Conclusion This survey of aspects of labor practices on Senegalese railroads is much too limited to allow firm conclusions; but I hope it suggests some direction for future studies. Basically the chapter has attempted to sketch out a frame of reference, linking historically the



dependence of European enterprise on African labor with the emergence of a growing African industrial labor consciousness. Closely related to this historical evolution was the seminal role of expatriate European workers as both teachers and taskmasters, while they themselves were adjusting to work conditions in a foreign climate.

The year 1933 is significant within this chronology, not only because it marks the time at which the colonial administration was successfully snuffing out an incipient trade union militancy among both European and African rail employees, but also because it signaled the elimination of the structure of Afro-European labor relations distinctive to the DSL. Previously there had been two autonomous tendencies on the railroads, with the African employees on each line recruited on a different basis and subject to a different statute.<sup>130</sup> On the TN, a tiny African elite had been given European status, while the lower ranks of employees had been subject to a harsh discipline. On the DSL, a racially discriminatory line had been drawn between European and African employees, but the consequent solidarity among African personnel apparently bettered the general lot of the rank-and-file, who often were able to offset the disadvantage of less education with their status as French citizens. With the elimination of the DSL company, the TN pattern of development was imposed uniformly on both lines,

easing the color line for an assimilated elite, while the workers as a whole were bent to the administration's will.

Much more remains to be done on this pre-amalgamation era of labor history on both the DSL and TN. What is needed are complementary efforts on statistical surveys by questionnaire and on additional oral interviews. This would help to determine the origins of African railroad workers (social, regional, and ethnic) and their personal experiences (duration of employment, mobility, promotions, skills, and disposal of earnings). Such work should be accomplished as soon as possible, while so many railwaymen of the pre-1934 era or their sons are still alive.

Notes

1. Conclusions of Commission Spéciale de la Main d'Oeuvre Coloniale, February 24, 1928, ARS, K56-19.
2. GS to MMC, April 9, 1883, ARS, 2B57; GS to S/Sec, April 7, 1889, ARS, 2B62; same, September 7, 1893, ARS, 2B70; same, June 18, 1894, Ibid.; Governor French Guiana to GS, October 2, 1894, ARS, K30.
3. S/Sec to Gasconi, February 6, 1884, FOM, Senegal XV,1; Gasconi to S/Sec, February 21, 1884, Ibid.; acting GS to MMC, March 13, 1885, ARS, 2B58; see GS to MMC, March 6, 1882, FOM, Senegal XIV, 25, and document #41, n.d., (1897), ARS, L22, on proposed Chinese and Vietnamese immigration to Senegal. Later on, officials were skeptical about European immigration in GS to French Consul, Sao Paulo, Brazil, February 24, 1897, SARS, DCF, and President CC-St. Louis to Director Interior, October 24, 1895, Ibid.
4. Interest in forced labor recruitment for private firms centered particularly on the Ivory Coast and, to a lesser extent, on the French Sudan. See Conference minutes of GG with Governors on manpower, ARS, K82-26; GG to Lt. Governor, Ivory Coast, March 1, 1924, ARS, K81-26; excerpt P.V., Conseil du Gouvernement, November 13, 1924, ARS, K93-26; P.V., Commission Spéciale de la Main d'Oeuvre Coloniale, February 24, 1928, Ibid.; P.V., Conseil Economique, June 15, 1928, Ibid.; L.E. Schwartz, "Le travail...", Courrier Coloniale, May 4, 1923, copy in ARS, K55-19; also copy Secretary General, Union Coloniale Française to MC, July 5, 1930, ARS, K409-132.
5. The prestation obligation was first regulated in an arrêté of November 25, 1912. The study of labor contracts by the Government General began in 1912. See ARS, K398-132. In its response to the 1912 questionnaire, the DSL came out solidly against government regulations in general and work contracts in particular (DSL to GS, July 3, 1912, StL); Demongin remarked in his report of February 20, 1926, FOM, TP, that laborers forceably recruited for the TN railroad were furnished with contracts that they were forced to sign by the colonial government. See the typed resumé on the proposals of different colonies of French West Africa, December 1923, ARS, K55-19; two decree projects on "native labor" in French West Africa, Ibid.; projects approved, November 13, 1924 (Guiraud),

Ibid.; GG to MC, July 26, 1928, ARS, K56-19; circular, MC to Governor Generals in colonies, July 22, 1924, Ibid.; circular, GG to Governors, October 11, 1929, ARS, K60-19.

6. See opinion of Lt. Governor of Upper Senegal-Niger in a resumé of propositions on labor legislation, (1923 or 1924), ARS, K55-19; GS to GG, November 12, 1930, ARS, K66-19; Annual Report on workers of 2<sup>ème</sup> portion-French Sudan, 1933, ARS, K47-19; Annual Report on 2<sup>ème</sup> portion-French Sudan, 1938, Ibid.
7. P.V., Office du Travail (Sudan), October 27, 1927, ARS, K56-19. The question of forced labor in French Africa is taken up by J. Suret-Canale, L'ère coloniale, pp. 312-327.
8. Companies taking advantage of the decree of October 1925 in Senegal were the Compagnie des Cultures Tropicales (Tambacounda), the Compagnie des Sisaleraies et Carburants Africaines, the Société des Plantations de la Haute-Casamance, and the Société des Mines de Falemé-Gambie (acting GS to GG, September 29, 1930, ARS, K60-19).
9. As in political report, January 1906, ARS, 2G6-4; acting GG to Administrator Dakar, June 3, 1931, ARS, K60-19; Report on Charles Lombardini, May 18, 1931, Ibid.
10. GS to GG, November 17, 1918, ARS, K408-132; GG to GS, October 19, 1918, Ibid.; GG to GS, December 19, 1927, ARS, K47-19. This leaves aside the occasional use of soldiers and the common use of jail prisoners as laborers.
11. Report Lt. Governor Upper Volta to GG, October 7, 1922, ARS, 10G11-107; copy Taillebourg report /1922/, Ibid.; Ballabey to IGTP, February 2, 1923, Ibid.; Report acting Director TK, August 28, 1922, Ibid.; GS to Lt. Governor, Upper Volta, February 12, 1924, SARS, Confid; GS to GG, February 23, 1924, Ibid.
12. See acting GS to GG, August 8, 1916, SARS, Confid. The exceptions were the cercles of Upper Gambia, Matam, and parts of the Upper Casamance. See economic report 1929, 4th trimester, ARS, 2G29-2; political report 1939, ARS, 2G39-4; political report 1940, ARS, 2G40-2. Contrast this with an arrêté of 1938 of the French Sudan

13. See the answers by the St. Louis and Dakar chambers of commerce to the 1897 Union Coloniale Française questionnaire on manpower, SARS, DCF; GS to GG, January 10, 1924, ARS, K82-26. See also acting Administrator Dakar to GG, August 19, 1927, ARS, K81-26; Note of Inspector General, May 4, 1940, ARS, K99-26.
14. Administrator Dakar to GG, March 23, 1931, ARS, K66-19, remarked: "Il n'est pas douteux, en effet, que du jour où le travail forcé serait organisé à Dakar, la population flottante menacée de recrutement disparaîtrait, ainsi de main d'oeuvre les entreprises des particuliers." Recruited labor, though, could be brought into Dakar from neighboring colonies.
15. Acting GS to GG, September 29, 1930, ARS, K60-19.
16. Only Dahomey had less onerous prestation obligations. See annexed table 1930, ARS, K69-19 which shows Senegal having an annual obligation of 4 days of labor. See circular of September 23, 1913, GS to Administrators of cercles, JOS, 1913, p. 949; GG response to Rheinhart report, December 13, 1913, ARS, 4G15; Senegal annual reports: ARS, 2G27-18(2); ARS, 2G28-8; ARS, 2G39-4; circular of GG, September 12, 1930, ARS, K120-26; Note by Inspector du Travail for IGTP, May 31, 1933, ARS, K143-26; Berthet note to Director Cabinet, April 19, 1940, Ibid.
17. About 1000 of Samory's "sofas" captured as war prisoners were brought in to build the railroad. Crosson-Duplessis, Le chemin de fer de Kayes au Niger, copy of excerpt of Bulletin de la Société Française des Ingénieurs Coloniaux (Paris, 1904) in RA, wrote on pages 68-69: "il en est presque toujours ainsi dans les entreprises coloniales; au début, on est souvent obligé de constituer un noyau de travailleurs avec de la main d'oeuvre importée peu à peu les indigènes de la région traversée viennent se grouper autour de ce noyau;... L'initiation à la loi du travail est alors faite et la recrutement de la main d'oeuvre locale est assuré." In fact, labor requisitions caused many to flee the vicinity of the KN. See MC to GG, October 29, 1902, ARS, 2G2-1, and Crosson-Duplessis, pp. 11-13,67.
18. For the DSL, see Petyt report of DSL expenses, 1888-1889, FOM, TP, Senegal XII,69, pp. 107,111-112; report of Chief Surveillance Engineer, December 7, 1917, FOM, TP; report of Chief Surveillance Engineer, December 8, 1928, FOM, TP. For the TN, see Legregram report,

July 12, 1930, FOM, TP, along with Chardy's response of July 20, 1930, Ibid.

19. For a concise explanation, see E. Devèze, Chef du Bureau personnel de la Direction Fédérale des Chemins de Fer de l'AOF, Formation Professionnelle-Cours de Personnel, 1956-1957, RA, pp. 9-23 which went into a detailed explanation of DSL cadres for 1925-1926. For a brief comparison with rail workers in France, see K.A. Doukas, The French Railroads and the State (New York, 1945), pp. 64-74.
20. The report of Director TK, May 6, 1914, SARS, DCF, recommended division of the unwieldy combined Movement and Rolling Stock division.
21. See Devèze, Formation, pp. 23-78, 91; arrêté of November 29, 1910, JOS, December 1, 1910, pp. 872-873, 934-936; an arrete of April 1, 1921 reorganized the cadre commun.
22. Report Demongin, February 20, 1926; FOM, TP. Of the 896 forced laborers, 201 were from Senegal; the rest from the Sudan. Demongin's impression is confirmed in Lt. Governor, Sudan to GG, April 12, 1926, ARS, K410-132 (and K81-26). The Sol report on TN personnel, August 5, 1930, FOM, TP, listed as working on the Travaux Neufs service a total of 64 Europeans (57 military), 1,497 hired laborers and 1,320 of the 2eme portion.
23. E.g., see salary scales for Africans and Europeans in 1925 in Deveze, Formation, pp. 11, 14-21, 38-40. The Pruvost report on the Dakar-Niger railroad, June 25, 1935, FOM, TP, p. 103, noted that Europeans accounted for 58.6% of the total personnel expenses (chapitre I) in 1930, for 46.7% in 1931, and for 51% in 1932. See Legregram report, July 4, 1930, FOM, TP, pp. 18ff.
24. Gasconi to S/Sec, February 21, 1884, FOM, Senegal XV,1; GS to MMC, March 13, 1885, Ibid.
25. See DSL brochure, "Notes relatives à la construction et à l'exploitation du chemin de fer DSL," December 1888, copy in FOM, TP, p. 35. "La compagnie ne peut envoyer, en effet, au Sénégal que des agents expérimentés ... Quel avantage trouveraient-ils à quitter les Compagnies ... pour s'expatrier s'exposer à un climat dangereux, et revenir en France au bout de 2, 3, ou 6 ans au maximum, avec une santé détruite, car l'Européen ne s'acclimate pas au Sénégal ..."

26. See Ibid., pp. 34-35, and the Etienne report, March 31, 1887, FOM, Senegal XII,59, p.36.
27. The following tables were tabulated from individual employees records in the archives of the DSL Company in Paris [henceforth DSL (Paris)]:

year <u>hired</u>	# <u>hired</u>	#Left Company Within						
		<u>Less than one mo.</u>	<u>One to six mo.</u>	<u>Six to 1 yr.</u>	<u>One to 2 yrs.</u>	<u>Two to 3 yrs.</u>	<u>Three to 6 yrs.</u>	<u>More than six yrs.</u>
1883	21	0	5	1	4	6	3	2
1884	51	0	12	9	9	9	9	3
1885	125	7	27	30	17	7	21	16
TOTAL	197	7	44	40	30	22	33	21

<u>year hired</u>	<u>fired</u>	<u>laid off</u>	<u>quit</u>	<u>died</u>	<u>died with- in year</u>	<u>repatri- ated for health</u>	<u>other</u>
1883	5	4	3	5	2	1	3
1884	11	7	9	5	-	14	5
1885	10	15	18	16	7	38	28
TOTAL	26	26	30	26	9	53	36

28. The DSL must have recognized that European employees could work on a long-term basis by the early 1890's, although the personnel statute of 1897 was still laid out on the basis of a six-year agent contract. The Fontaneilles report of July 17, 1898 concerning the DSL, in FOM, TP, makes it clear tht long-term employment was possible.
29. See DSL personnel regulations-1897, copy in FOM,TP. The Petyt report of expenses for 1890, FOM, Senegal XII,69, indicated that European agents went on vacation with their families in France at company expense.
30. For general policy on hiring retired military personnel at the Kayes-Niger, see answer to question 7 by Director KN, September 9, 1912, ARS, K399-132. A list of European personnel on the KN, in a report of January 18, 1907, RA, listed 14 active military personnel out of a total of 68. See Demongin report on TKN personnel, April 10, 1926, FOM, TP, and especially Chardy's comments pp. 6, 10. See also Petyt report 1891-1892, FOM, TP,

- p. 28, on the proposed use of military personnel on the DSL. TK agents were subject to the decree of August 5, 1910 regulating personnel in the "Travaux publics des colonies." See acting GS to Director TK, March 30, 1915, SARS, Confid. As "fonctionnaires," they had more job security than someone hired by contract on a temporary basis.
31. Report of DSL board of directors to stockholders, June 15, 1901, FOM, TP.
  32. On rentals, see DSL board of directors report to stockholders, April 28, 1888, FOM, TP; unsigned note on Dakar station (1897 or 1898), FOM, TP.
  33. Petyt report, DSL expenses 1890, FOM, Senegal XII, 69, p. 60; DSL to MC, November 8, 1894, FOM, TP. The Jacquerez report of September 14, 1901, FOM, TP, found several stations unsuitable to house rail agents and their families.
  34. DSL to MC, November 23, 1900, SARS, DCF, proposed using government reserve funds for various constructions on the DSL line, including five new stations which would shelter European agents in more sanitary circumstances; DSL to MC, April 25, 1904, FOM, TP, suggested building housing in the "Dunes area" for its European agents. Even as late as 1925, the DSL was buying housing in Dakar for its European agents. See Director DSL to DSL Administrators, Paris, July 16, 1925, DSL (Paris). In 1894, high company officials had felt no need to house DSL personnel. See report by Pouyer and A. de Traz, FOM, TP, pp. 17-21.
  35. Thiès au Niger, pp. 73-74.
  36. L. Petyt report on DSL for 1887, May 30, 1888, FOM, Senegal XII, 69, pp. 32-33. Petyt report, DSL expenses 1890, Ibid., pp. 70-71. Boissel to Premier Briand, December 24, 1910, FOM, TP; Boissel to Deputy Blaise Diagne, December 1, 1920, Ibid.; DSL to MC, April 21, 1921, Ibid.
  37. See report by Rolly on DSL functioning, January 29, 1911, ARS, 043, pp. 24-31. The Ligue Française pour la Défense des Droits de l'Homme et du Citoyen had made more general but unsubstantiated charges earlier. See François de Pressensé to MC, October 23, 1906, ARS, K32; GS to GG, March 9, 1907, Ibid.



38. Telegram GG, Ponty, (at Kouroussa) to Cabinet (GG), December 21, 1910, RA: "me suis engagé avec compagnie à ne pas nous faire guerre d'employés et enlever agents à la dite compagnie dont bonne exploitation nous intéresse."
39. GS to GG, February 22, 1921, SARS, Confid, noted how a TK agent had worked African rail laborers for his own personal profit. See Inspector Merly to MC, July 8, 1926, FOM, TP; Demongin report, April 8, 1926 on service in stations, Ibid. A general, wide-spread practice of overcharging Africans for passenger tickets was noted in Chief Exploitation Service TN to Lt. Silvani, Commandant Gendarmerie of TN, June 30, 1930, FOM, TP; Chief Exploitation Service of TN to Chief Commercial Section of TN, March 24, 1930, Ibid.
40. The Petyt report of 1891-1892, FOM, TP, pp. 8,9, listed 16 chefs-cantonniers (undoubtedly Europeans) for 1889 and only 6 for 1892. A report on DSL personnel with an attached tabular listing of September 15, 1892, FOM, Senegal XII,72, specifically listed 5 European chefs-cantonniers. The Fontaneilles report of July 17, 1898, FOM, TP, pp. 59,60 indicates that by 1897, at least, even these were gone. The job, it should be noted, involved skills at basic surveying measurements to align the track.
41. Copy GG to MC, January 18, 1928, K56-19; GS to GG, January 10, 1924. ARS, K82-26. In GS to GG, August 4, 1928, ARS, K58-19, an estimate was made that 3,500 workers were needed for public works projects in Senegal. Lt. Governor of Sudan to GG, August 12, 1927, ARS, K57-19, estimated 8,000 men would be recruited by the administration for public and private needs, not including separate private hiring. See also acting GS to GG, September 29, 1930, ARS, K60-19.
42. Administrator Dakar to GG, October 20, 1930, ARS, K60-19. Most were Tukolor from the Senegal river and Sousous from Guinea.
43. General Bonnier to GG, June 29, 1918, ARS, K408-132; commentary on draft arrêté by GG, n.d. (1918) on drafting manpower for Dakar, ARS, K408-132; GG to Ravitaillement-Marine, September 28, 1918, Ibid.; copy acting President CC-Kaolack to Administrator Sine-Saloum, October 24, 1918, Ibid.; copy telegram Administrator Sine-Saloum to Delegate Senegal (Dakar), December 30, 1918, ARS, K399-132; report by Syndic of manpower,

- February 26, 1919, Ibid.; Aumont to Chief Economic Affairs Service, February 19, 1919, Ibid.
44. E.g., Oldani to GS, December 6, 1918, ARS, K399-132; Economic Bulletin-December 1920, ARS, 2G20-1; Administrator Dakar to GG, July 31, 1926, ARS, K81-26; P.V., CC-St. Louis, December 18, 1926, SARS, DCF.
  45. GG to Lt. Governor of Upper Senegal-Niger, January 20, 1919, ARS, K399-132, complained that permitting higher salaries in his colony would have repercussions on the cost of completion of the TK. On the shortages of laborers for shipping peanuts on the TN, see June 1925 economic report, ARS, 2G25-2.
  46. Thiès au Niger, p. 46; earlier in 1911, work on the Kaolack-Guinguineo spur alone required 1200 recruited laborers, June report, ARS, 2G11-43.
  47. TN report on 2<sup>ème</sup> portion, ARS, K47-19; report of acting Director TN to GG, October 4, 1932, Ibid.; annual report on workers of the 2<sup>ème</sup> portion, French Sudan 1938, ARS, K47-19. The actual contingents sent in a given year varied wildly from none to 1600 men, but most recruits were kept on the job for almost 2 years. See also Lt. Governor of Sudan to GG, August 12, 1927, ARS, K57-19; same, September 16, 1927, Ibid.; GS to GG, December 19, 1927, ARS, K47-19; Demongin report, February 20, 1926, FOM, TP, on forced labor on the TKN; Demongin report, April 10, 1926, Ibid., on TKN personnel; Merly report, June 22, 1926, Ibid., on African manpower for the TKN; response of Lt. Governor of Sudan, May 28, 1926, ARS, 4G87-105; response of GG, June 2, 1926, Ibid.
  48. Director DSL to Chief Surveillance Engineer, May 15, 1926, ARS, K81-26; Director DSL to GG, June 9, 1926, Ibid.; Commissaire Police, St. Louis to GS, December 6, 1926, Ibid.
  49. Petyt report 1891-1892, p. 85, FOM, TP.
  50. See answer to question 9 of the questionnaire on forced labor in French West Africa [circa 1928], ARS, K66-19; remarks in GG conference, January 8, 1921, ARS, K82-26. The Lt. Governor of Upper Senegal-Niger noted that the chiefs received 5 francs per worker recruited. For general background on rural labor, it is useful to consider African domestic slavery. See Denise Bouche, Les villages de liberté en Afrique noire, 1887-1910 (Paris, 1968), pp. 58ff.; J.-L. Boutillier, "Les captifs

en AOF (1903-1905)," Bulletin de l'IFAN, série B, 1968, pp. 513-535.

51. On labor recruiting of 500 men for the Louga-Linguère, see Administrator Louga to GS, October 8, 1926, StL; Economic report, December 1926, ARS, 2G26-3; Political report 1929, ARS, 2G29-15.
52. Testimony of a retired African "cheminot." During the course of my sojourn in Senegal, I interviewed 26 African ex-cheminots (all but one in the spring and summer of 1972) on a confidential basis. Henceforth, information provided by these men will be footnoted as "EX-RR." These interviews were very informative, not only for factual information, but in directing the study toward basic questions. Unfortunately a small sample of only 26 men, however informative, has to be preliminary in nature. See Appendix II for details. A letter, DSL to MC, November 8, 1894, FOM, TP, refers to laborers working on the DSL track living nearby with their wives and children in straw huts; see also Petyt report on DSL expenses 1890, FOM, Senegal XII,69, p. 21.
53. EX-RR interviews. For a few years, the company even had its employees growing peanuts on DSL property for its own profit.
54. With exceptions. During World War I, heavy port traffic was handled at times only with recruited labor (see report by the Syndic of manpower, February 26, 1919, ARS, K399-132). Typical base salaries for unskilled urban laborers were 1.25 to 1.50 francs per day from 1881 to World War I (less 0.50 Fr/day if meals were provided). In 1918-1919, with much manpower in the army, these salaries rose to 3 and even 6 francs per day (Oldani to GS, December 6, 1918, Ibid.).
55. See art. 31 of the draft decree on offices du travail, ARS, K55-19; P.V., Commission on regulation of work, August 9, 1924, Ibid. (referring to this article as #37).
56. Report by Friry, January 16, 1907, ARS, P37. In contrast see Mornet report on piece work in northern Nigeria, 1913 (for the Congo railroad project) in ANF, unclassified 89AQ-Brazzaville. See also Avant-projet Noirot, July 20, 1894, p. 64, FOM, Senegal XII,82 on road construction gangs.
57. Port workers in Dakar, at least, were paid in lump sums for an entire crew. See GG to Administrator Dakar,

- July 22, 1926, ARS, K81-26; Administrator Dakar to GG, July 31, 1926, Ibid. A draft report by Petyt (1898), FOM, TP, indicates that a record was kept of the work of individual workers only in the central workshops, but not outside.
58. GS to S/Sec, April 12, 1886, ARS, 2B75; Petyt report on DSL expenses 1890, FOM, Senegal XII,69, p. 21. GS to GG, Political report 1908, ARS, 2G8-10. In a monograph on Thiès in 1910, ARS, 1G337, p.35, an official noted: "Les manoeuvres se recrutent assez difficilement sur place; cette catégorie de travailleurs est fournie par les bambaras, toucouleurs et sarakolés qui viennent pendant la traite travailler dans les escales, et ensuite regagnent leurs pays d'origine ou ils livrent à la culture." See also Director DSL to Chief Surveillance Engineer, May 15, 1926, ARS, K81-26.
59. EX-RR interviews.
60. Decrees of June 17, 1895 and January 17, 1897. See GS to S/Sec, January 6, 1892, ARS, 2B67; same, January 5, 1893, Ibid.; same, March 11, 1893, Ibid.; Delegate Interior (Dakar) to Director Interior, May 19, 1892, ARS, K31; excerpt of notice in JOS, December 5, 1891, ARS, K31; documents #47 and 106, Ibid.; draft GG to General, Commandant en Chef, July 26, 1896, ARS, K397-132; report Director Interior to GG, August 4, 1896, Ibid. See also the dossier FOM, Senegal XIV,26. Senegal reluctantly permitted, however, its workers to be recruited for the French Congo and Madagascar. See French Congo to GG, March 22, 1902, ARS, K398-132; Gallièni to GG, December 14, 1901, Ibid.; GG to Governor-General of French Equatorial Africa, April 30, 1913, ARS, K397-132.
61. See report by Inspection Générale des Services Sanitaires et Médicaux, October 12, 1931, ARS, K60-19; draft report by Maretti on agricultural manpower in the cercle of Kayes, July 17, 1923, ARS, K81-26; "Danger of Depopulation, French West Africa," November 21, 1931, ARS, K162-26. The Société des Mines de la Sénégambie failed to extract gold with machinery on the Falemé in 1912 when its dredge broke down (see Commercial Bulletin, May 1912, Upper Gambia, SARS, DCF). Its successor, the Compagnie des Mines de Falemé-Gambie, impressed local labor brutally (copy GS to Administrator Upper Gambia, January 30, 1930, StL). See also APA report of November 1939, ARS, 17G160-28.

62. Note Balandier's penetrating comments on the reaction of Africans to "material inferiority," in The Sociology of Black Africa (New York, 1970), pp. 160-163, 282-284.
63. See GS to S/Sec, June 6, 1890, ARS, 2B67.
64. Senegalese craftsmen skilled in European trades, those of St. Louis in particular, were justly famed throughout French West Africa and the Congo. See Crosson-Duplessis, Kayes au Niger, pp. 67-68; questionnaire on manpower-1897 (5 cercles of Sudan), ARS, K398-132; questionnaire on manpower-1897 (St. Louis, Dakar), SARS, DCF.
65. E. Mage, Voyage d'exploration, p. 221.
66. There are many works which describe the castes briefly. See Majhemout Diop, Histoire des classes sociales... Sénégal (Paris, 1972), pp. 49-52. Martin Klein, Islam and Imperialism, p. 10.
67. EX-RR interviews. See also A. Aumont, proofs of pamphlet for National Colonial Congress, 1889, ANF, 148AP2, p.3.
68. EX-RR interviews. Of the 26 retired railwaymen interviewed, 11 claimed a notable ancestry (some even a royal ancestry), and 6 of these 11 had specialized in a technical métier. Métier can be used in a very general way to mean an specialized occupation, including watchmen or clerks. In this work, I mean métier to refer narrowly to work of a technical nature. The large number of notables in the African "working class" suggests that more work needs to be done on the composition and evolution of this class. It is often pointed out that industrial workers in Africa have stood out from the mass of peasantry as a privileged group. One starting point for a study would be J. Lombard's analysis of the erosion of the traditional ruling class' power in Autorités traditionnelles, pp. 68-88.
69. See footnote 23 above. In addition to a "supplément colonial," bonuses at the end of six years service and a housing allowance (when no housing was provided), DSL agents received from World War I, an "indemnité de déplacement de cherté de vie" as well as an "indemnité de déplacement." See salary scales for each DSL employee on the DSL list of January 1, 1890, FOM, Senegal XII, 59. Colonial government officials also received a supplement

colonial.

70. Sahib Diop of Dakar was a stationmaster from 1913 to 1917, Amadou Guèye briefly from April 1919 to May 1921, and Guibril Bâ of St. Louis from 1911 to 1932. See also list attached to DSL to MC, August 29, 1907, FOM, TP; DSL to MC, November 23, 1900, SARS, DCF. Almost all facteurs and facteurs-chefs on the DSL were European. Chardy suggested (Chardy to IGTP, July 28, 1934, RA) that these posts be held henceforth by Africans, as they were already on the TN. On African locomotive engineers, see e.g., Etienne report, March 21, 1887, FOM, Senegal XII,69, p. 88; Couteau report, September 15, 1892, FOM, Senegal XII,72.
71. See Petyt's 1887 report on the DSL, FOM, Senegal XII,69, pp. 88-90. Compare with Ibid., pp. 84-86. Petyt report, DSL expenses, 1888-1889, Ibid., p. 49; Petyt report, DSL expenses 1890, Ibid., p. 20; Petyt report 1891-1892, FOM, TP, pp. 47-48. Petyt, who had been employed on a railroad in the U.S.A., was clearly motivated by racial prejudice. Other government officials felt differently. See Inspector Fournié to S/Sec, January 25, 1894, FOM, Senegal XII, 68. Jacquerez report, September 15, 1901, FOM, TP.
72. DSL pamphlet, "Notes relatives à la construction et à l'exploitation du chemin de fer DSL (decembre 1888)," (Paris, 1888), p. 45. On pages 34-36, the pamphlet complained that its European employees cost 3 times as much as in Europe, and worked half as hard because of the climate.
73. Crosson-Duplessis, Kayes au Niger, pp. 71-72 describes the Tukolor attack on the KN line in 1890.
74. DSL pamphlet of 1888, p. 52.
75. EX-RR interview. Report of DSL board of directors to stockholders, June 15, 1901, FOM, TP.
76. Notes by Launay on the functioning of the TK and DSL railroads, April 10, 1920, FOM, TP. See also the diatribe against Senegalese workers in the note by police inspector, Vallet, n.d. [1920], ARS, 17G239-105.
77. The Legregram report, June 16, 1930, FOM, TP, pp. 25-26, noted that of the 62 stations, large and small, on the TN, only 12 were run by Europeans. Calmel, "Le

chemin de fer du Sénégal au Niger...", Revue du Génie, October 1896, p. 323, remarked that Africans had already served as chefs de train, and even as stationmasters at remote stations on the unfinished KN.

78. Response GG to Legregram report, August 5, 1930, FOM,TP.
79. European colonial officers were generally convinced that Africans would only respect and willingly obey Europeans clad in military uniforms. See Revin to Freycinet, July 19, 1879, ANF, F14/12438.
80. EX-RR interviews. Copy GG to GS, August 1927, ARS, 1P6-10, expressed surprise that the Lt. Governor would favor shortening work hours for Africans on the TN to the same hours as European TN agents.
81. EX-RR interview; admission to this cadre was extremely important, for it brought certain privileges, such as a right to railroad-supplied housing. DSL management resisted extending to African agents of the TN's Cadre Commun Supérieur the courtesies they normally extended to European TN agents (copies of exchange of letters Director TK to Director DSL, June 4, 1923, ARS, 6P165-36; Director DSL to Director TK, June 7, 1923, Ibid.; Director TK to Director DSL, July 31, 1923, Ibid.; joint letter of five TK agents to GG, November 30, 1923, Ibid.; GG to GS, December 26, 1923, Ibid.
82. EX-RR interviews. A circular of October 31, 1910 by GG, Ponty, ARS, 17G160-28 enjoined the lt. governors of the federation to reserve administrative positions in their respective colonies for African school graduates. GS to Lt. Governor of Dahomey, July 26, 1912, SARS, DCF, and GS to Lt. Governor of Ivory Coast, July 26, 1912, Ibid., urged that these governors accept African graduates of Senegal's Ecole Pinet-Laprade on the railroads of their colonies.
83. F. Carrère and P. Holle, De la Sénégambie française (Paris, 1855), pp. 12-13: "Avant le décret de 1848, abolitif de l'esclavage, ils consentaient volontiers à être maçons, menuisiers, charpentiers, calfats, métiers considérés comme honorables; mais depuis l'émancipation les marabouts ... se sont emparés des enfants, les détournent ... des métiers qui les mettaient en contact avec des Européens .... Un homme né au Sénégal regarde aujourd'hui comme vil le métier de laptot ... et les navires de l'Etat sont obligés de recruter leur personnel parmi les étrangers ou les gens nouvellement établis (bambaras, saracolets)." See also Ricard,

Le Sénégal, pp. 237-247; GS to MC, September 22, 1876, FOM, Senegal I, 61.

84. Young Senegalese were sent to France for a technical education as far back as 1837 (see G. Hardy, L'enseignement au Sénégal de 1817 à 1854 [Paris, 1920], p. 83). At least a few returned to serve with distinction in the colony's technical services at an early date. (See Boilat, Esquisses sénégalaises, pp. 258, 274-275; Ricard, Le Sénégal, pp. 17-18). Of the originaires of St. Louis, the most successful in a technical career was Frédéric Michas, who rose to the rank of Chief of Senegal's Public Works service in 1924 after a long period of service outside the colony (Personal dossier, SARS, A628).
85. See e.g., Conseil Général du Sénégal, 1906, pp. 135-144.
86. See DSL, "Notes relatives ... DSL," December 1888, FOM, TP, p. 52; Petyt report 1887, FOM, Senegal XII, 69, pp. 88-89; Etienne report, March 31, 1887, FOM, Senegal XII, 59, p. 36.
87. The number of skilled workers in St. Louis was too small for the needs of the 1880's (see GS to MMC, April 23, 1882, FOM, Senegal I, 66). DSL Company records (DSL-Paris) show that, at least up to 1895, only 5 St. Louisians were registered as permanent or semi-permanent (auxiliary) employees. Three of these were train engineers; only two were hired as clerks, and only for a short time. Only five St. Louisians were hired as facteurs from 1897 to 1900, only one of which became a stationmaster (Guibril Bâ). Six other St. Louisians commissioned by the DSL from 1902 to 1909 were only work crew foremen. In contrast, there were eight Goréens hired by the DSL for its auxiliary staff up to 1893, and three others for the permanent staff up 1897. An ex-railwayman claimed in an interview, however, that there had been a number of St. Louisians in the main DSL workshops.
88. A movement of prime significance for the political history of Senegal during this period of "proto-nationalism" among educated francophone Africans, it is recounted vividly by Lamine Guèye in his autobiographical Itinéraire africaine (Paris, 1966), pp. 8-10, 85-101.
89. EX-RR interviews. See also Launay to Director TN, July 24, 1924, RA, which noted the difficulty of getting African graduates of professional schools to come to the



railroad. He suggested that the railroad form its own school.

90. EX-RR interviews; personnel records, DSL (Paris). As early as 1891, L. Petyt spoke highly of African personnel employed on a long-term basis at the DSL repair shops of Dakar. (see Petyt report on DSL expenses 1890, FOM, Senegal XII,69, pp. 21-23). There were 65 skilled workers in the DSL Dakar workshops in 1897, with some 24 apprentices and laborers; in 1900 there were 47 workers, with 46 apprentices and laborers (Jacquerez report of September 15, 1901, FOM, TP).
91. EX-RR interviews.
92. Of a group of 156 Senegalese workers observed leaving Bathurst for the Belgian Congo in March 1897, 107 were Sarakole, mostly unskilled laborers from Bakel. See list in Administrator Gambia to GG, March 18, 1897, ARS, K397-132.
93. See C. Quinn, Mandingo Kingdoms, pp. 27, 42, 49.
94. A detailed 1938 analysis of the "general character" of Sarakoles sailing on French vessels and another on Wolof sailors can be found in ARS, 17G160-28. See also GS report for Direction des Colonies, January 22, 1880, FOM, Senegal I,63; GS to S/Sec, June 6, 1890, ARS, 2B67; acting GS to S/Sec, November 7, 1892, Ibid.
95. Francine N'Diaye, "La colonie du Sénégal au temps de Brière de l'Isle, 1876-1881," Bulletin de l'IFAN, série B, 1968, pp. 470-471, mentions the formation in 1879 of an "école des arts et métiers" in Senegal, and the training of tradesmen at the Catholic mission of St. Joseph at N'Gazobil. The school run by the Frères de Ploërmel also trained apprentices in some métiers at both St. Louis and Gorée from an early date (Françoise Flis-Zonabend, Lycéens de Dakar (Paris, 1968), pp. 167-169). A training school was also attached to the naval arsenal at S. Louis in 1886 (see GS to S/Sec, December 10, 1890, ARS, 2B67). Later on, an Ecole de Pupilles Mecaniciens de la Marine was created at Dakar (JOS, September 12, 1907, pp. 469-470). The Ecole Pinet Laprade was run by the Government General at Gorée and the Ecole Blanchot at St. Louis by the colony of Senegal. See Flis-Zonabend, Lycéens pp. 169-172; response of acting GG to Merly's report of July 7, 1926, ARS, 4G87-105; copy GG to MC, January 18, 1928, ARS, K56-19; inquest manpower, Senegal-1927, ARS, K92-26.

96. At the railroad workshops, the skills would include-- in addition to the familiar crafts of bricklayer, ironsmith and carpenter--the industrial skills of fitter, lathe worker, brass-founder, tinsmith, and electrician, as well as locomotive engineer. The writer is particularly indebted to the comments of ex-cheminot El Hadj Ibrahima Diène.
97. EX-RR interviews.
98. Guy Pfefferman, Industrial Labor in the Republic of Senegal (New York, 1968), pp. 28-29, 34-38, 218-219.
99. Ibid., pp. 28-29, 36-38, 250.
100. See acting GS to Chief Public Works service of Senegal, September 25, 1926, StL.
101. EX-RR interviews, See Bouche, Villages de liberté, pp. 156-158.
102. EX-RR interviews. A report of Director Interior to GS, June 19, 1886, SARS, DCF, noted that African workers and laborers insisted on being paid every 2 or 3 days.
103. Telegram DSL to GG, July 22, 1896, ARS, K397-132; telegram Superville to GG, July 28, 1896, Ibid.; Delegate Interior to Director Interior, August 2, 1896, Ibid.; Superville to GG, August 4, 1896, Ibid.; DSL to MC, July 25, 1896, FOM, Senegal XIV,27. Petyt noted the loss of some DSL workers already to the Congo in his report on DSL receipts 1890, FOM, Senegal XII,69, p.18.
104. EX-RR interviews. Some of those interviewed noted that many refused to be commissioned in the railroad, because they hadn't understood the advantage of a long-term pension.
105. Gordon Wright, France in Modern Times (London, 1962), pp. 362-363. For a contrary view see Peter Stearns, Revolutionary Syndicalism and French Labor (New Brunswick, 1971), pp. 13-14. A law of December 27, 1890 stipulated pensions for workers hired under contract. See Doukas, French Railroads, pp. 68-71, 198-204.
106. A draft report by Petyt for 1898, FOM, TP, lists 180 workers in 1894 receiving 1554 hours of treatment in the company hospital, 248 agents in 1895 for 2473 hours, 165 agents in 1896 for 1417 hours and 254 agents in 1897 for 1969 hours.

107. Fontaneilles report, July 17, 1898, FOM, TP, p. 81; draft of report by Petyt, 1898, FOM, TP. A completed regulation was only submitted by the DSL to the Ministry of Colonies in November 1901 (report DSL board of directors to stockholders, June 18, 1902, FOM, TP).
108. See DSL personnel regulation-1908, copy in FOM, TP.
109. See DSL "ordre de service," no. 211, December 31, 1919, ARS, K35, DSL ordre de service, n. 261, August 5, 1925, FOM, TP.
110. P.V., CC-Rufisque, April 30, 1912, SARS, DCF; draft report GG to MC, November 18, 1910, ARS, K399-132; GG to MC, November 30, 1910, ARS, K33; GS to GG, April 14, 1910, Ibid.; GG to GS, December 30, 1918, ARS, K398-132; acting GG to MC, June 4, 1923, ARS, K76-26. See also the dossier ARS, K34, on a proposal of 1919 for an 8 hour workday in West Africa, especially documents #10 and 11, which summarize the responses of government agencies and chambers of commerce.
111. Excerpt opinion CC-Rufisque, attached to GS to GG, January 8, 1912, ARS, K399-132.
112. DSL to MC, August 29, 1907, FOM, TP, makes it clear that the pension plan, applicable at that time to only 45 African employees, was being put into effect because of the express request of these African employees. A copy of the 1927 version of the pension plan for Africans is in FOM, TP.
113. For TN agent benefits, see the Legregram report on TN personnel, July 12, 1930, FOM, TP.
114. See circular of October 14, 1937, ARS, 21G53-17; acting GG to MC, September 8, 1936, ARS, K70-19. Labor unions were made legal again in France by a law of March 21, 1884. Not surprisingly, the merchants of that day in Senegal came out roundly against its promulgation in Senegal. See P.V., CC-St. Louis session of December 18, 1884.
115. For the railroad strike of 1938, see Iba der Thiam, "La grève des cheminots du Sénégal de Septembre 1938," 2 vols., Mémoire de Maîtrise (University of Dakar, 1972).
116. MC to GG, April 3, 1908, ARS, K106-26; copy GG to MC, June 24, 1908, Ibid.; deliberations of the Cour d'Appel de l'AOF, June 1, 1908, Ibid. An attempt had already

been made in 1906 to form a "Syndicat des Ouvriers Réunis" at Dakar (Procureur de la République to GS, June 19, 1906, SARS, DCF, and unsigned copy to MC, n.d., ARS, K399-132).

117. Arrêté of April 22, 1920 by Merlin, copy in ARS, K106-26; draft GG(Merlin) to MC, February 10, 1921, Ibid.; acting GG to GG(Carde), April 14, 1923, Ibid.; GG to acting GG, May 15, 1923, Ibid.; GS to GG, October 4, 1924, Ibid.; acting GG to GS, October 11, 1924, Ibid.; draft of acting GG to MC, February 1930, Ibid.; note on craft unions by Director APA, Ibid.
118. Telegram Friry to Director Public Works, May 10, 1909, SARS, DCF; Director Public Works to GS, May 10, 1909, Ibid. The strike was confined to DSL personnel running the trains on the new Thiès-Diourbel branch. In 1910 there was a dockers' strike at Dakar (agent of Phillippe, Delmas & Co. to GG, May 27, 1910, ARS, K399-132). In 1916 there was a strike of African butchers at Lyndiane (Brocard to GG, November 2, 1916, SARS, DCF) and in 1918 one of masons in Rufisque (ARS, 2G18-1). A dockers' strike at Rufisque is described in a note of January 4, 1919, ARS, K399-132.
119. Letter from cheminots to GG, April 8, 1919, ARS, K35; note by Mouneyres, April 12, 1919, Ibid.
120. The arrêté of April 12, 1919, ARS, K35, mobilized railroad personnel; see police report (Commissaire Central de Dakar) to GG, April 15, 1919, Ibid.; report of General Bonnier, April 30, 1919, Ibid.; report of GG to MC, May 1, 1919, Ibid.; note also the telegrams from commercial interests in Senegal (e.g., President CC-Rufisque to GG, April 14, 1919, Ibid.).
121. EX-RR interview, confirmed in part by police report, April 25, 1919, ARS, K35; see also "Les agents indigènes du DSL" to Chief of DSL Rolling Stock, December 30, 1919, Ibid.; telegram MC to GG, June 3, 1920, Ibid.; arbitration decision of June 9, 1920, Ibid.; GG to MC, June 12, 1920, ARS, 17G239-105; DSL to MC, September 30, 1921, FOM, TP. A glimpse at European worker attitudes on the TKN is provided in "Personnel TKN" to President, CC-Rufisque, June 4, 1924, SARS, DCF, as these agents deny responsibility for failures adding: "le personnel indigène, auxilliaire naturel du personnel européen, ne lui apporte aucun aide, tout au contraire! ...le chemin de fer marche mal c'est entendu, mais il marche cependant mieux qu'il peut marcher et cela grâce au personnel européen." There were fights between African

workers and Europeans at the TKN depot of Thies in August 1924 (Senegal political report 1924, ARS, 2G24-14).

122. An arrêté of January 10, 1920 approved a constitution for the Association Amicale et Professionnelle des Agents du chemin de fer du TK. An arrêté of July 15, 1924 permitted the amalgamation of this association with a similar association for the KN. A separate African association was created in 1929 (JO-AOF, January 1929, p. 79). A number of other associations were formed in Senegal before the war; but a letter to MC, January 31, 1907, ARS, K399-132, indicates that there were none before 1907.
123. Existing police reports cover various meetings of the associations or their members; e.g., a report of May 17, 1926 on a banquet of African DSL cheminots, ARS, 6P434-132; that of November 14, 1925, *Ibid.*; or that of December 19, 1926, *Ibid.* Those in ARS, 21G133-108 include reports on the European DSL association, as those dated September 3, 4 and 8, 1928 and January 18, 30 and 31, 1929, and one on the African DSL association dated January 21, 1929. A police report of September 12, 1931 (ARS, 21G41-17) covers a meeting of only 20 Africans of the DSL association, and another of October 4, 1931 (*Ibid.*) a meeting of only 15 members. See also report of police inspector Wilt to Director TN, December 3, 1927, ARS, 1P6-10; same December 4, 1927, *Ibid.*; confidential report, September 12, 1931, ARS, 1P8-10.
124. See Lamine Guèye, "Grève du DSL," L'AOF, January 29, 1925, copy in FOM, TP; d'Oxoby, "En grève," Journal de l'Ouest Africain, *Ibid.*; GG to MC, January 30, 1925, *Ibid.*; DSL to MC, February 11, 1925, FOM, TP; copy note for MC, February 12, 1925, *Ibid.*; Chief of Police, Thies to Administrator Thies, February 10, 1925, SARS, Confid; GG to MC, February 19, 1925, FOM, TP; President of Syndicat Défense Intérêts Sénégalais to Blaise Diagne, March 17, 1925, *Ibid.*; the dossier ARS, 0234 has several documents of early 1925 discussing drafting workers on the TK and DSL. Contrast worker action on the TN with that shown in acting Director TK to GS, October 28, 1920, ARS, K409-132.
125. GS to GG, March 2, 1925, ARS, K106-26; draft GG to MC, May 11, 1925, *Ibid.*

126. Government General, AOF, Sur les difficultés rencontrées au réseau Thiès-Niger depuis sa création..., n.d., /1927/ pp. 2-3, 7-8; see IGTP to Secretary General of the Government General, November 29, 1927, ARS, 1P6-10.
127. Director TN to GG, September 23, 1926, ARS, K53-19; Director TN to IGTP, February 27, 1928, Ibid.; Legrogram report on TN personnel, July 12, 1930, FOM, TP.
128. See police report of January 30, 1929, ARS, 21G133-108, report of April 19, 1929, Ibid.; report of May 8, 1929, Ibid. The police report of January 21, 1929, ARS, 21G133-108 saw little cohesion left in the DSL African association; but a report of February 1, 1929, Ibid., shows them negotiating actively for raises, and another report of September 14, 1931, ARS, 21G41-17, indicated more agitation for raises.
129. See GG to MC, December 1, 1933, FOM, TP, on reduction of DSL effectives; GG to MC, February 4, 1933, ARS, K66-19; note for GG by Direction APA, April 18, 1934, Ibid.
130. The police report of February 1, 1929, ARS, 21G133-108 noted that the African TN association was reluctant to cooperate with their DSL colleagues. "Par leur genre différent de recrutement," it explained, "ils se considèrent comme au-dessus de leurs collègues du DSL..."

APPENDIX II

Of the 26 ex-cheminots, one began work on the Dakar-Niger only in 1934, but deserves to be included. Of the 25 others, 10 began with the DSL, 5 with the KN, 4 with the TK, and 6 with the consolidated TN. Four began railroad work before 1911, 7 more before 1921, 3 more before 1926, and the rest afterward. Fourteen of these men received a formal French education, while the other 12 did not. Fifteen did all or most of their work in the Rolling Stock division or associated rail workshops, four were in the Movement division, four in the Track (and Buildings) division, and two in the central offices (one moved around too much to be classified). Ethnicity cannot be easily pinpointed in many cases because of mixed parentage. Roughly speaking, these men can be grouped as 8 Wolof, 5 Khassonke, 3 Lebu, 3 Sarakole, 2 Bambara, 1 Tukolor, 1 Serer, 1 Peul, and 2 not classified.

The interviews were generally conducted in the informant's home, usually privately in French, sometimes with friends present; but five men were interviewed in the street usually with friends sitting by, and one was interviewed in an office. Six were interviewed at Dakar, one at Rufisque, one at St. Louis, and the rest at Thiès. The interviews were not tape recorded (except in one case), but the following questionnaire was used as a general guide dur-

ing the interviews:

TRANSLATION OF QUESTIONNAIRE FROM THE FRENCH:

Details on the general functioning of railroads (as dates organization, directors' names, etc.) can be found in books or archives. But the personal observations of railroad workers are particularly useful for undocumented items.

Some questions are:

1. When did you begin to work for the railroad and what posts did you come to occupy? Did your father or grandfather work for the railroad?
2. Where had you come from, and what attracted you to work on the railroad? Where did your father and grandfather come from, and, if they worked for the railroad, what attracted them to work for it?
3. What sorts of men were drawn by railroad work? From which lands, which origins, which former occupations?
4. Where and how did they live when they were single? When they were married, where and how did their families live?
5. Were there voluntary associations or cooperatives for these workers? (sociétés d'entraide for eating, for habitation, for purchasing goods, for sickness, for holidays, for social affairs, for receiving new workers, for loans, for burials, etc.) How did they function?
6. What leisure days were there? What did one do on those



days or on religious festivals?

7. Were the mosque, the church, or the quarters of the city centers of communal life for the rail workers? How?
8. Do you recall any traditions, songs or well-known stories about important incidents or eminent railwaymen which illustrate aspects of the life of railwaymen?
9. Do you recall any stories of your father or grandfather about the development and functioning of the railroads, or on the development of trading posts and villages along the lines?
10. Do you think that there were any changes in the lives and perspectives of railwaymen as compared to other Senegalese, because of their work for the railroad?

## CHAPTER VI

### RAILROADS AND AFRICAN LAND

[In France] one meets at each step cities, villages, homes, chateaux, parks, with which one must reckon so as not to augment the enterprise's expenses unreasonably . . . in a new country like the Sudan, one only worries about the general contours of nature. [Even] the populations to be served are a secondary consideration. They don't summon the railroad. The railroads summon them.

-Ch. Freycinet, 1881<sup>1</sup>

The impact of railroad lines on property values, especially on urban land located near rail stations and yards or near right of way approaches into towns, is a familiar theme of 19th century urban social history in Western countries. Even in the early days of railroading it was soon generally recognized that this means of locomotion would raise the values of commercial properties well-sited to take advantage of the shipping and traveling facilities that an adjacent rail station would offer. Some land speculators would aim at cheap, early purchases of land located astride a projected railroad's right of way in rural areas, or better yet on the approaches into towns,

in order to sell later to the railroad at inflated prices. Alternatively a speculator might gain even more by investing in the anticipated commercial appreciation of properties located near a projected railroad line. This could be a risky gamble, however, since a railroad trace often also reduced the value of some properties, especially those residential areas masked or isolated by the contours of a railroad's tracks and yards.<sup>2</sup>

The impact of railroad construction in the 19th century on property values of land in the clusters of settled communities in Europe and the eastern United States, with their pre-existing patchworks of property holdings, rural and urban, and its impact on the social fabric of these areas involved the complex interplay of many inter-related elements.<sup>3</sup> In comparison, a pioneering railroad lanced into unsettled territories, as in the American West, clearly was a simpler case. Here, a railroad was one of a set of conditioning factors newly-imported into the territory by the railroad itself--factors which were, in fact, creating new land values where none or virtually none had existed before.

The case of railroads in Senegal stands out in contrast to the experiences in both the pioneering and settled situations. For while the lands in question had indeed been occupied by settled communities before the coming of the railroad, the promoters and organizers of the rail projects, thinking largely in terms of pioneering railroads, considered that they were indeed creating new property values where none had existed before. The nub of the problem really lay, however, in the fact that two radically different notions of land value, European and African, were involved.

African land tenure In contrast to European society, traditional Senegalese society, in a land-rich and labor-scarce region, placed a relatively higher value on human resources and relationships than on material resources. The similarities in Western and African attitudes toward land and labor should not blind us to the significance of the different emphasis accorded these factors within African and Western societies. These similarities sometimes misled earlier observers into considering African

institutions as primitive versions of the Western. In fact, despite some obvious congruities, the differing perceptions within African and Western perspectives of the relation between land and labor indicates fundamental, underlying differences in the balances within the two cultures.<sup>4</sup>

Within Western society, there seems to be an implicit assumption that society is purposeful in itself--that it exists to bring to fruition a given potential of development. Within this general assumption, land and labor are viewed as instrumental--as factors useful in accomplishing the tasks of development. Land is therefore valuable even in potential alone; and while land is exploitable only with appropriate applications of labor, labor itself is only given the status of another factor of production.

Traditional African societies in Senegal, with their long agricultural background, also valued productive land, and property rights had long been carefully defined throughout the region. But in a setting where land was abundant, with the predominance of a slash-

and-burn system of agriculture, which encouraged mobility, and a relative scarcity of labor, the powerful, respected, and rich were in general not those who could make extensive land claims per se, but those who could attract or compel military manpower and agricultural labor. The greater the manual support, the greater the fruits of production, and the greater the security. This was especially true during the unsettled era of the Atlantic slave trade.

Interpersonal relations and mutual obligations were, therefore, a more central concern than in Western society. Fertile land and water resources were also esteemed, but if depleted or too meager locally, they might be easily found in relative abundance elsewhere.<sup>5</sup> In fact, productive land, abundant water, and flocks were prized in large part for their usefulness in attracting new supporters to a group or leader, as well as in satisfying and retaining the more capable with rewards.

Perhaps the differences in Western and African attitudes toward land and labor were the result, in origin, only of differing agricultural techniques under different

climatic conditions. It is interesting to note, nevertheless, that servitude in Europe was characterized by tying the serf to the land, in contrast to African servitude where the tie to a master was of a personal nature and where the personal qualities of the slave could enable him to rise to high positions of power.

Senegalese land tenure was complex, and its rules varied with the ethnic group and region. It can be said that, in general, property rights were conferred by the act of clearing out forest land for cultivation.<sup>6</sup> For example, Wolof custom, drawing upon ancient Serer practice, recognized the overlapping rights of an original claimant, the "lamane", who had earned rights over wide tracts of land by being the first to clear them with fire, and those of an occupying tenant, the "borom n'gadio", who had cleared a family plot for cultivation on a portion of this land with tools later on. The lamane was entitled to collect a fee from the latter. But this fee originally had the nature of a symbolic gift rather than rent and arose from a religious relationship between the lamane and the land, rather than an exclusive property claim.

More importantly, the borom n'gadio could not in general be dispossessed and property being held on a familial or even a communal basis was, in general, not alienable, although its management might be confided to a family head.

After the 16th century, powerful monarchs usurped the rights of many a lamane, granting these land rights in turn as fiefs to members of their entourages, to warriors, or to religious leaders. In these cases, the fees exacted from the borom n'gadio might become onerous; but the very nature of these fees only emphasizes the importance of the personal bond in land tenure.

Set fees for land use were only levied at the inception of occupancy and for renewals at the death of either of the contracting parties. Regular annual taxes of various kinds were generally exacted on the basis of a set percentage of the crop harvested--a levy corresponding more directly to the amount of labor invested in cultivation rather than to the intrinsic value of the land itself.<sup>7</sup> There was never any question of an active market for land, nor of the peasant's basic right to



continue occupying the land.<sup>8</sup> After all, he, not the land was the source of wealth.

European land values on African turf Despite a prolonged European presence in ports or trading posts along the African coast and along some rivers, little headway was made at first in creating an extensive network of property holdings according to European standards. There is no reason to doubt that French officials and merchants imported European notions of property at an early date as a useful tool in organizing and administering internally their African trading stations.<sup>9</sup> But the significance of these measures, even at these trading points, was vitiated by the fact that, aside from the military advantages of a given position, there were generally many other alternative sites in the environs that could be just as suitable for trading, and indeed were often used for the purpose.<sup>10</sup> During the period of the Atlantic slave trade, the very nature of the trade prompted the competing European powers to scatter their trade operations widely in far-flung networks of small posts and anchorages along the coast, interspersed untidily

among those of other rival nations, rather than concentrating operations at a few points or occupying long, contiguous stretches of coastline.<sup>11</sup> Even after the demise of the slave trade, the rising trade in staple commodities did not necessarily transform the situation. Terrains within the French-run escales trading in gum along the Senegal river were indeed neatly subdivided into parcels bought by merchants. But these property holdings retained little real value when free trade allowed commerce to take place at many other points along the river's banks.<sup>12</sup>

It was the growing profitability of larger and larger, coal-burning iron ships during the course of the 19th century that, as it gradually changed the character of seaborne transport, also drastically altered the relative importance of various coastal sites.<sup>13</sup> Unlike the smaller wooden sailing vessels, these more efficient maritime carriers could be accommodated only at a limited number of points along the African coast. Everywhere, anchorages and ports became less and less adequate as ships became larger, requiring extensive

alterations and expansion even at the few natural harbors on the coast. Driven by a growing competition for commerce with Africa and for the maritime carrying trade, the various powers strove to improve docking, coaling, and provisioning capacities at their colonial ports.<sup>14</sup> Nevertheless, given the budgetary stringencies on colonial projects, governments could only undertake large-scale construction and dredging operations at a few ports. The heavy cost of construction at a port, such as Dakar with its excellent natural harbor, would prompt the colonial government to encourage a greater flow of traffic into Dakar simply in order to generate a better return on its earlier construction investment. This was, moreover, a cumulative process, since traffic could be attracted to Dakar by making even more improvements on its harbor and port. Thus the earlier investments were inviting even heavier investments in the port, and these made the diversion of traffic to Dakar even more essential. Inevitably, the government also would deliberately neglect the construction needs of competitive ports, such as St. Louis and Rufisque, in order to funnel even more shipping into Dakar.<sup>15</sup>

It was this increasing concentration of commercial

activity at a few points (including at first St. Louis and Rufisque) that was the primary determinant in creating or in magnifying enormously property values in and around favored ports--by endowing well-located parcels of land with an undeniable intrinsic value based on their potential for facilitating business transactions and increasing trade volume, while reducing the costs of operation. In Senegalese ports, land at a site would be valued according to its proximity to the harbor, business district, and government administration offices, and to the site's adequacy for commerce, storage, or habitation. Other nearby parcels might now also become objects for speculation, since they could also acquire value simply in anticipation of future increased shipping activity in the port.

As railroad lines were being built into the African hinterland, it was obvious that they were also reinforcing and extending the European system of land valuation on the African continent in two ways. The railroads were, on the one hand, attracting and concentrating even more of the hinterland's trade within certain ports, so that the overall value of real estate in a favored port would rise, even while the sitings of the railroad station and

rail approaches in or near the port also reshuffled local property values to some degree. At the same time, the railroad was also embedding a system of European property holdings deep within the interior, by creating a string of focal points for local concentrations of the export trade within the peripheries immediately around the stations along the rail trace. Before the railroad, African caravans could choose among a multitude of alternate routes leading to a number of different ports.<sup>16</sup> The railroad line, cheaper and faster than a caravan, would now funnel freight and passenger traffic along a fixed trajectory. But as noted earlier, the railroad, unlike a trail, highway, or river, was only open at a restricted number of points, its services available only at limited times, according to the directives of a railroad administration that formed part of the colonizing power. The concentration of shipping at the railroad stations would tend, therefore, to produce a gradation of land values in rural land based on their proximity to the rail station.<sup>17</sup> In this sense, the railroad was thus playing a primordial role in the creation of monetary land values in Africa, both by rendering areas in the interior accessible to ports engaged

in the export trade and by helping to concentrate this trade within narrow geographic channels.

In contrast, the bits of terrain set aside for the needs of the railroad--rectangles of 400 meters by 100 for DSL stations, 800 meters by 200 for TK stations, and from 30 meters width for the DSL right of way to a variable span of 30 to 100 meters for the TK--had limited, though not inconsequential direct impacts in themselves on the growth of urban areas or the development of private property systems. These railroad properties were only enclosed at a comparatively late date, and many unused portions of the properties were, in fact, occupied informally by African huts or plantings, even into the 1930's.<sup>18</sup> The two partial exceptions to this rule were Dakar and Thiès; but this was due largely to the installation of railroad headquarters in both towns, and to the unique conditions at these sites.<sup>19</sup> The growth of urban areas, their morphology, and the evolution of land tenure rights in and about these areas were governed to a much larger extent by other, more fundamental factors, peculiar to the nature of the colonial enterprise or intrinsic to the African scene, rather than to any direct, specific role of railroad opera-

tions or to the layouts of rail traces and terminals.

Law, land and labor Land, whether in remote rural districts or in the new urban areas coveted by the colonial regime, was regulated originally according to local African law and custom, in which rights over the same piece of land might be held, perhaps consecutively, by a community, by an extended family, or by an individual. After the conquest, the contact of these traditional land tenure systems with a system of European law based on individual property rights and assigning a cash value to terrain could only be corrosive for the former. This became evident wherever French law became preeminent, and especially when a need to pay taxes in cash arose. Sale of land, which might occur inadvertently out of ignorance of French law or because of a need for money, might now permanently alienate to Europeans as private property a community's formerly exclusive and theoretically non-alienable right or negate the legitimate traditional claims of others.

The French administration was interested, of course, in expropriating large tracts of land for its own needs, as well as seeing to it that French merchants and colonists

could also obtain land under easy terms for trade operations and for agricultural development. The administration could claim wide stretches of terrain on the basis of treaties obtained by consent or force, and in fact had little trouble in taking the land it needed for fortifications or for the railroad lines.<sup>20</sup> In other cases, however, Africans proved much more intractable about yielding parcels of terrain that they were cultivating or inhabiting. The obstinancy of Africans in these cases was bad enough in the eyes of those colonial officials who could imagine more vital or productive uses for the land. But insistent African claims to apparently deserted tracts of territory indeed often infuriated top colonial officials. It is likely that these officials were aware of the local practice of leaving fields in fallow for extended periods of time. However, they generally considered these practices backward and wasteful. As a consequence, the colonial government was generally well disposed to awarding large tracts of rural terrain to French citizens or companies, under condition that they be developed economically, and it did so often enough with little compensation for African occupiers or claimants of the terrain.<sup>21</sup>



Nevertheless, a system of rural concessions or plantations never became widespread in Senegal, as it did in other French colonies in Africa. The political hostility in the 19th century between members of the colony's General Council and the colonial government originally may have played an important role in this development.<sup>22</sup> Even more significant in the long run was the disappointing productivity of the rural concessions, in contrast to the profitability of an export trade based on peanut cultivation by peasant families, who would abandon a terrain if it was awarded to a concessionnaire.<sup>23</sup> The government had little interest, therefore, in the dispossession en masse of African peasants, who were the mainstay of production. Instead, the colonial administration tended, in practice, to moderate the adverse impact of concession grants by limiting their size and avoiding settled productive areas. But it continued, nevertheless, to award these concessions.<sup>24</sup>

The colonial administration also had to be wary of French merchants and colonists. All too often, a petitioner seeking a rural concession in the name of agricultural development was only out to obtain cheaply plots of well-sited land that might be used advantageously for commercial

purposes or sold at a profit later.<sup>25</sup> Nor was the administration pleased, on the other hand, to be forced to pay high prices for needed urban land to French citizens who had already bought the rights to the land earlier, at a pittance, from Africans needing cash.<sup>26</sup>

To minimize other conflicts arising from fundamental differences between French laws and African custom, especially in the case of slavery, the colonial administration had divided Senegal in 1890 into two areas: the directly administered territories, covering the urban coastal towns, the major trading posts, and, later on, a one kilometer ribbon of territory on either side of the DSL railroad, where French law would prevail; and the "Pays du Protectorat", covering the remaining territory, where local custom was to prevail under French supervision.<sup>27</sup> This division could not resolve, however, the question of land tenure, since the majority of terrains in direct rule areas were rural in fact and still held according to African custom, while the administration also wished to grant concessions in the Protectorate area. Neither could the problem be resolved easily by associating rights acquired under the customary law with those acquired under the Civil Code

because of the complexity of overlapping rights involved in familial and collective land tenure. Even worse, under the technicalities of French law, most African land rights, being of a nature akin to that of usufruct in European terms, would have been voided.<sup>28</sup> The very act of registering African land into a French system of property holdings, it should be added, presented a formidable problem to the administration, since in the absence of a land cadastre the physical effort of surveying and marking property boundaries for even a limited number of terrains was a burdensome material task.<sup>29</sup>

The abrupt imposition of French property laws within consolidated urban zones might also have had some grave consequences. The success of the colonial occupation did not depend so much on the acquisition of parcels of terrain as on attracting or compelling African labor to contribute to the export trade. Large numbers of Africans had to be drawn to reside within or near the urban areas for more or less extended periods of time, not only to perform the myriad skilled, semi-skilled, and menial tasks that ran the trade, but also for the associated tertiary activities that fed and sustained the populations of these towns.

Fashioned by Europeans, the towns quickly became, as has been remarked, largely populated by Africans.<sup>30</sup> Trade goods and the need to earn cash for the head tax--the same devices which drew Africans into cultivation for the export trade--also enticed many into the towns, at least for short periods. The towns of course had other allures. They offered bright lights and refuge from rural labor recruitment, from chiefly and parental authority, and for a time from the head tax itself.<sup>31</sup> But the towns chronically suffered from labor shortages, and it would not do to compound the shortage by making it difficult for African laborers to find housing or by repelling long-term residents from the vicinity by troubling unnecessarily their tenures on land.

The colonial administration's answer to these dilemmas was to proclaim a general right of eminent domain over land in Senegal (and later for all French West Africa) in the name of the French state. Enunciated as far back as 1862, this claim was based at first on treaties with African sovereigns granting land to the French.<sup>32</sup> After the conquest, even more sweeping claims were put forth on the grounds that the rights of the African sovereigns had

passed to the French state by right of conquest. Under this questionable theory, African sovereigns were considered to have been the sole proprietors not simply of abandoned and empty terrains, but also of all landed property in the realm, with the actual cultivators entitled only to precarious rights of occupation. In case of land expropriation, a parcel's African occupants were therefore to be entitled only to a meager compensation for the loss of use of the land and for displacement costs, in contrast to holders of titles legally registered under French law, who had recourse to a highly favorable expropriation procedure.<sup>33</sup> Naturally, this principle could also be used to assert, though with mixed effectiveness, that any direct sales of land by Africans to Europeans were invalid.

This legal principle of land tenure, which was to be a cornerstone of colonial social law, was dominant in Senegal particularly after 1907, until rejected by the courts in 1933.<sup>34</sup> One should not be too concerned with the formal legalisms of most government documents on this question, although many an important court case turned on the logic of a theoretical argument. Essentially, the administration was pragmatically staking out as wide a claim as

possible--retaining wide powers of expropriation and a veto over land registration--in order to be able to exercise a firm control over a changing colonial situation that could evolve along contradictory lines. The long term interest of the colonial power, of course, was to extend the sway of Civil Code provisions over its entire colonial domain, and to do it in such a way as to reward those who were helping the colonial administration consolidate and develop the territory economically. At the same time, care had to be taken not to create social and economic turmoil nor to impair the administration's freedom of action by a too hasty extension of French metropolitan property laws. This might not only alienate and repel needed African labor, but also allow greedy or unsympathetic elements, both European and African, to profit at the government's expense by exploiting the technical restrictions in these laws. The zone of private property holdings would be expanded steadily, but only at a rate and in ways conforming to the government's immediate policies and interests. Under the circumstances, it was convenient for officials to view this unregistered land as valuable mainly in potential-- as a patrimonial treasure that would generate governmental

revenue through lucrative land sales, as well as a resource held in trust for supposedly unsophisticated Africans.<sup>35</sup>

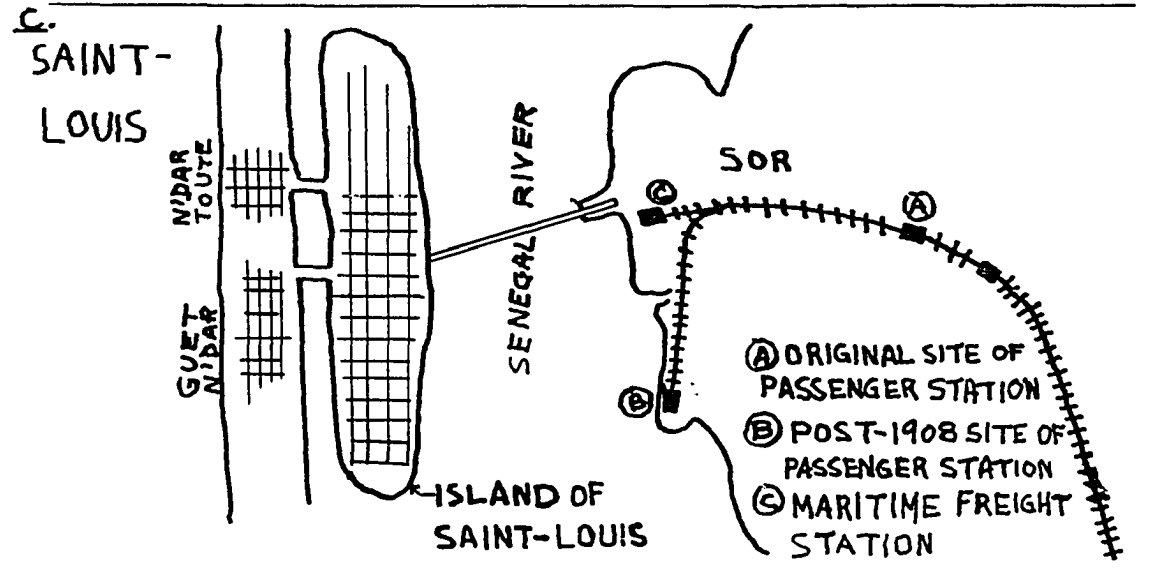
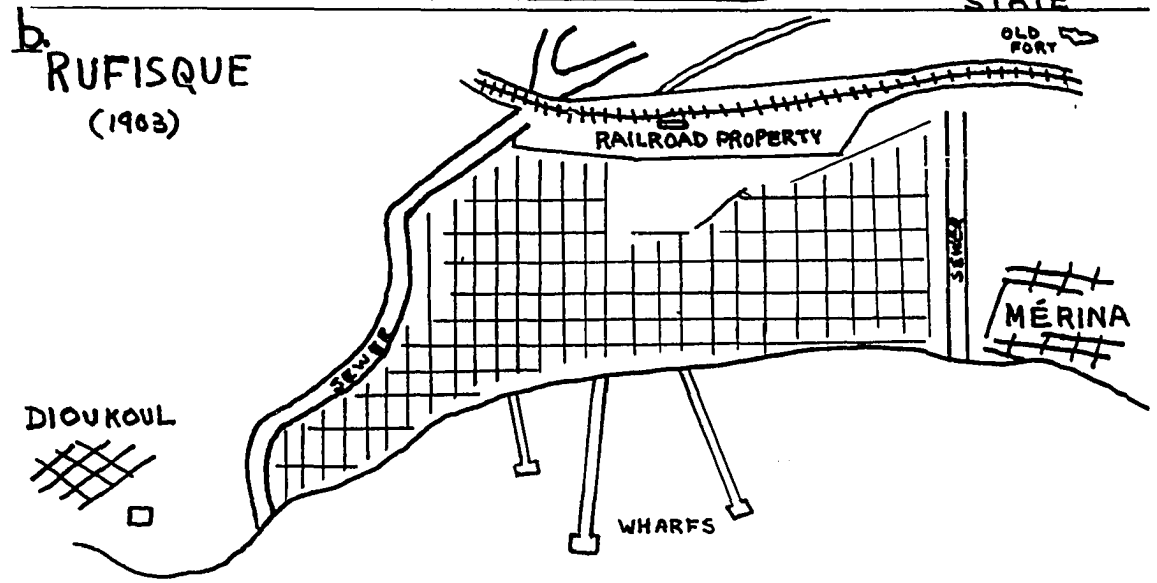
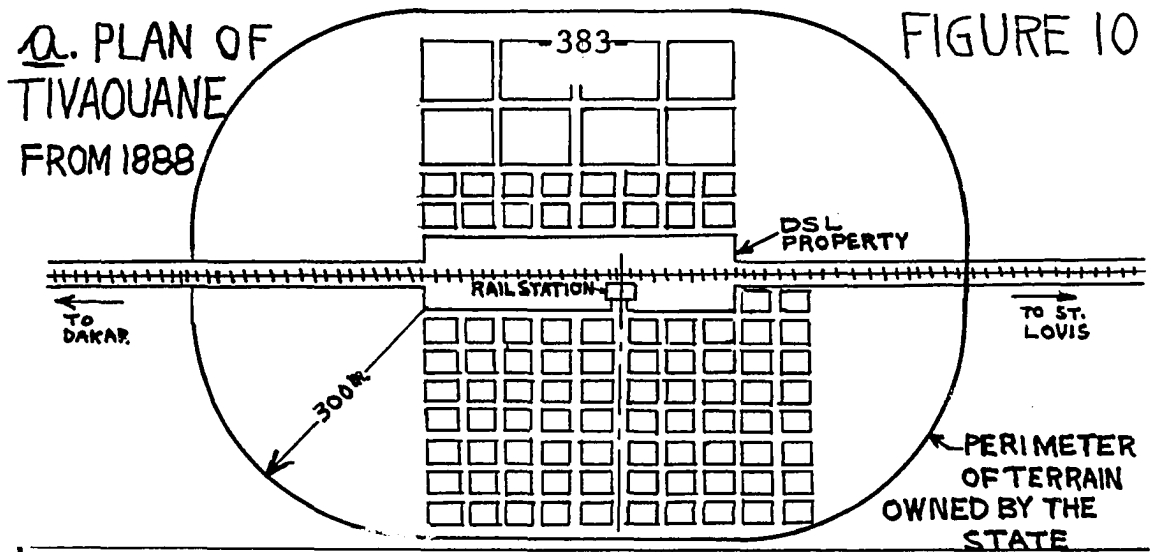
Escales, ports, and trade Urban land had been claimed by the 19th century colonial administration in the name of the French state, the colony, and its municipalities. But within a few days of the decree transforming the Government General into a powerful, consolidated political authority in October 1904, a new decree was also issued advancing an exclusive claim of eminent domain over practically all land in French West Africa in the name of the French state.<sup>36</sup> Confirmed after legal tests in the courts, it was this claim which was to be the legal basis of property rights for the lion's share of urban property.<sup>37</sup> Under French colonial regulations, urban property could be granted in a number of ways. In the early days, French citizens could buy land from the African occupants and formally register them with the colonial government, or they could buy directly from the colonial government itself. Seasonally inundated urban lands were granted freely by the government with the proviso that they be filled in above water level within a set period. Concessions for the temporary occupancy of plots of land were also granted on the basis of annual rents to

the government, and could be converted to a permanent title if the land was sufficiently developed during occupancy. The administration preferred to sell plots of land, however, in order to profit from the sales, and to simplify its own responsibilities. After 1887, surveyed urban land, in principle, had to be offered at least initially for sale at public auction.<sup>38</sup> Sale and registration of a plot of land would be made after a surveyor reconnoitered and marked out the terrain, and after a formal inquest into outstanding claims on it. Prior to auctions, the government would itself formally survey and formally register the land to be auctioned.

The colonial administration mapped out lots in each important trading center or each port at various times depending on the growth of the agglomeration. In general, and in contrast to the typical African village with its serpentine lanes winding about compounds of diverse, but generally rounded contours, the administration would try to lay out the lots, as had been prescribed by the metropolitan ministry, in rectilinear checkerboard fashion, generally in the form of square islets of four equal square lots separated from other islets by streets or wide boulevards.



River or seaboard escales were generally aligned about streets giving access to the shoreline and its quais. Inland trading centers would form along the junctions of roads, with a central market square often located at the crossroads. At a railroad junction, the checkerboard pattern mapped out for the trading center, also generally called an escale, would be aligned along one long side of the rectangle forming the rail station property, with the main street of the center leading directly into the station at a right angle (See Figure 10a). In these railroad escales, an open square, set aside as a market, often provided a focal center within the rectilinear layout, and a number of DSL escales were laid out on both sides of the station property, though commercial operations almost always concentrated on one side only.<sup>39</sup> In more important centers, a local administrator's residence would form an alternate focus, generally on the outskirts of the agglomeration. Unofficial or informally aligned settlements that had been in place before the formal administrative division of their terrains sometimes prompted deviations from the rectilinear patterns in order to preserve pre-existing alignments, especially along diagonally oriented trade routes. Sometimes, on the other hand, an over ambitious



administrative plan for a given escale would map out a much greater area for allotment than was used by the agglomeration, and in fact much of the mapped land would be under cultivation as though the pattern of the allotment did not exist.<sup>40</sup>

The railroad station would exert a powerful attraction tending to centralize trade within the adjacent escale. But this was offset to a large extent by the commercial advantages of waylaying road traffic while it was still enroute to the escale. Competing *maitres des langues* would often be found on the roads to the escale, attempting to guide produce-hauling cultivators or whole caravans toward particular patrons within the escale itself.<sup>41</sup> Smaller traders, unable to afford the expense of a private plot or of permanent installations within the escale, would also open their operations on the access roads beyond its perimeter--a ploy that would often lead the larger merchants to set up competing subsidiary operations near them on the roads. It was precisely just such a competition of traders and merchants attempting to outflank each other on the road leading out of Dakar, that resulted, after a series of leapfrog jumps along the road, in the formation of Rufisque in the 1860's.<sup>42</sup> It was this kind of process which also

created many satellite trading centers on the roads and riverways near larger escales. Merchants based in the escales would naturally resent having to invest in subsidiary operations while smaller competitors were escaping the higher costs of escale installation, particularly after 1904 when tax-collecting municipal governments were set up in a number of escales.<sup>43</sup> Indeed from 1912, the larger merchants were demanding that commerce be banned for a radius of 5 kilometers or more about each escale and that ambulant traders be barred from operating within them.<sup>44</sup> Although sympathetic, the administration balked nevertheless at fettering free trade outright.<sup>45</sup> Instead, it would rely, into the 1920's, on extending the system of formally-surveyed escales into the roads and waterways of the interior in pursuit of an expanding commercial geographic distribution.<sup>46</sup>

The main district within a rail escale could become so congested that there was insufficient space for storing the peanuts awaiting shipment by rail. Often stocks were heaped up at auxiliary sites at the outskirts of the escale, or beyond its perimeter. Peanut freight would be trundled from these storage heaps to the railroad station on

wheeled carts rolled along by hand over light, metal tramways ("voies Decauville") running through the streets.

At first, the metal tracks for these lines were installed at the initiative of individual commercial firms for their own needs.<sup>47</sup> But later on, the commercial tram systems in the various escales were consolidated into municipal systems, either by a private entrepreneur or by the municipal government itself.<sup>48</sup>

As for the ports, railroad lines could have contradictory effects on their growth, depending on the port's commercial situation and the efficiency of port facilities. In so far as the structural layouts of the ports were concerned these depended much more on the peculiar features of the port sites and on the orientation of docking and storage facilities than on the position of the railroad terminals themselves. Nevertheless, the terminal location clearly did have some effect (see Figures 10b through 10e for various ports). The rail terminal's location was of greatest importance at Rufisque, where the railroad, in redoubling the port's natural advantage of proximity to centers of agricultural production, more than compensated, along with the site's abundant water and storage space,

for the grave inadequacies of Rufisque's unsheltered anchorage and meager docking facilities. The railroad station was not placed within the limits of the commercial town, but at some distance to the north, about a half-kilometer from the wharfs. The gridiron pattern of the commercial town's streets was, therefore, naturally aligned along the connecting passages that married the railroad station to the seafront docks. The streets running in from the seafront and the branching lateral streets were crisscrossed with a dense network of metal tram lines running up to the railroad station--a binding webwork of metal arteries carrying a rich flow of produce from rail to ship, while showering the municipal coffers with revenue from its tolls.<sup>49</sup>

The limited impact of the rail stations at St. Louis arose obviously from their remoteness, in a sparsely-settled, marshy, continental suburb far from the main commercial hub of the island port. A private entrepreneur provided an irregular carriage service from the island to the stations; but it was plainly inadequate.<sup>50</sup> Unfortunately, by the time a new passenger terminal was built in a convenient location at the foot of the pont Faidherbe,

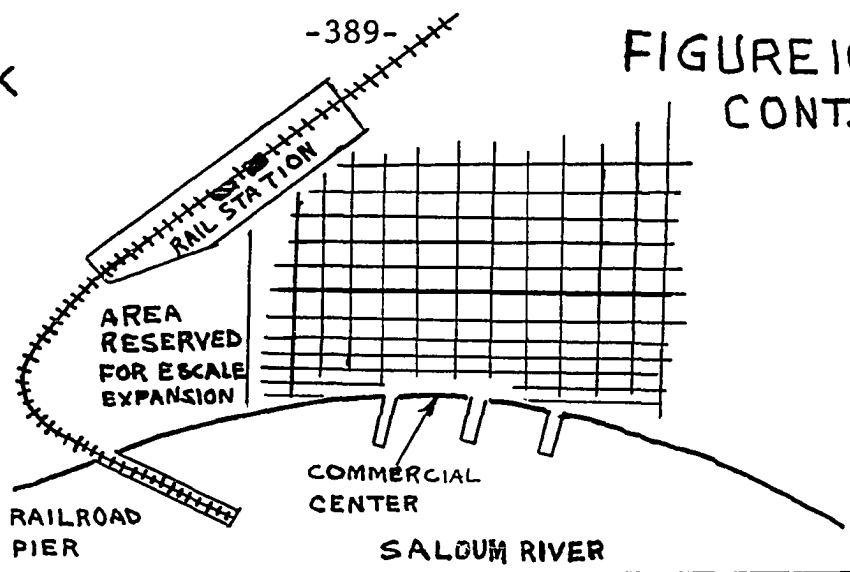
the town's commercial situation had radically worsened.<sup>51</sup> Even as the river trade, long and short haul, was shrinking in volume, a capricious river mouth entry was blocking the larger ocean shipping from the port. Under these conditions, the relocated rail facilities, far from acting as an armature for new commercial activity and urban growth, as they might have in an earlier period, operated instead as just one more siphon on a rapidly decaying port.

Similarly cramped by a partially-strangled river access to the sea, the port of Kaolack was buoyed, in contrast, by a rapidly improving commercial situation. Already well-placed to receive the produce of a rich agricultural region only beginning to expand its production, Kaolack received an added filip by being selected as a major port outlet for the new TK railroad line. The sensible fashion in which the TK freight terminal was wedded directly to the port contrasted favorably with the dismal conditions at St. Louis, or even those at Rufisque. The roadbed here was traced around the western edge of the already existent commercial escale down to a newly constructed rail pier on the western edge of the port's riverfront.<sup>52</sup> This happy arrangement, wisely drawn to leave space for

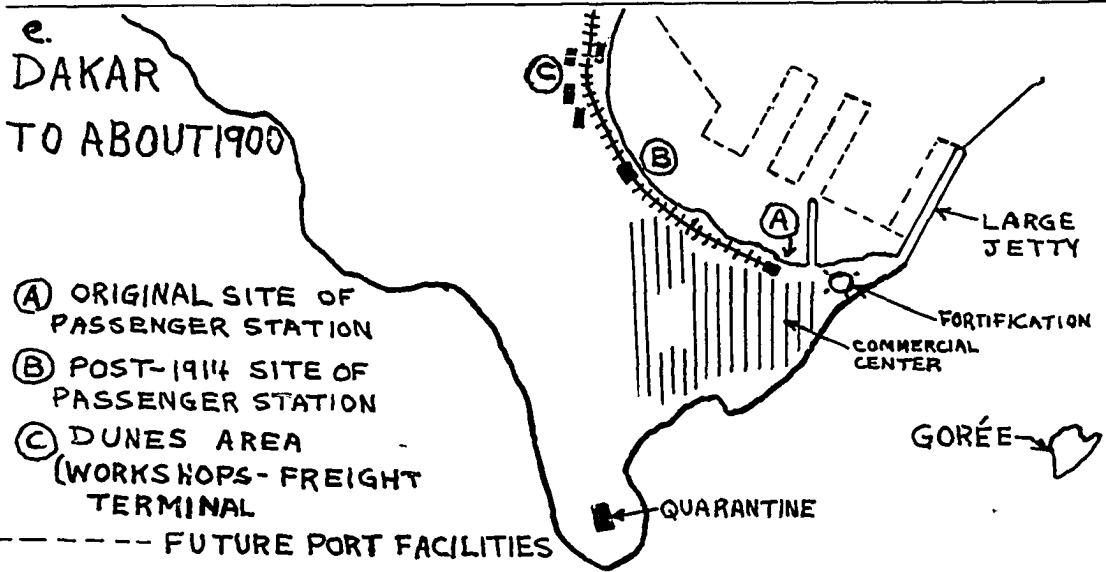
d. KAOLACK

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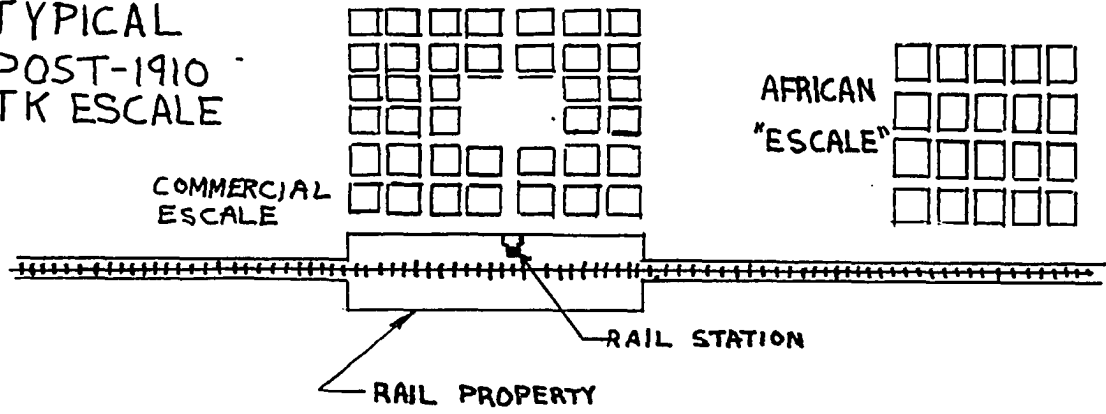
FIGURE 10  
CONT.



e. DAKAR  
TO ABOUT 1900



f. TYPICAL  
POST-1910  
TK ESCALE





new commercial installations near the station, nicely facilitated an easy transfer of freight (often carted by tramways) between rail and port or commercial establishment and added significantly to the site's inherent advantages of plentiful natural quais, water, and storage space. The major drawback to the orientation of this trace was that as Kaolack expanded in prosperity, the rail line came to form a barrier to communication between newly-forming (African) residential suburbs and the commercial quarter of the town.<sup>53</sup>

Dakar was one case where the rail terminal actually hampered the initial growth of the port. As recounted earlier, the ill-conceived 1883 design for the rail line's approach into Dakar restricted commercial activity by masking stretches of shore line, while the passenger terminal, deeply embedded in the port area, further congested a cramped commercial quarter.<sup>54</sup> Dakar's fine natural harbor led to its early use as an important port of call for coal-ing and provisioning shipping on the major Atlantic routes; but commercial traffic with the interior languished.<sup>55</sup> A glance at early street maps of Dakar clearly reveals one reason in the occupation of many of the better sites by a

steamship company and by edifices housing administrative services or military and naval units.<sup>56</sup> The railroad compensated to some degree for the town's eccentric position with respect to the interior; but commerce was still hampered by a lack of storage yards for peanuts in Dakar, and by the narrowness of shoreline available to commerce.<sup>57</sup>

The commercial success of Dakar came, of course, with the major construction efforts from 1908 to 1932 to create a suitable port adjacent to the military port. The widening, deepening, and improved sheltering of the harbor itself was coupled to the creation of vast new quais by shoreline fill and the opening of wide new areas for stocking produce and coal.

The new quais and piers were served directly by a network of rails linked to the DSL system. But removal of the railroad terminal from the commercial center--a long-standing grievance of local commerce--was also an integral part of the port overhaul program.<sup>58</sup> DSL freight operations were transferred back into the dunes region on the north edge of the town, while DSL administrative offices and housing were expanded in that zone. The new siting of the passenger terminal was less easy to settle, delayed

as it was by a tug of war between merchants who wanted the station just at the edge of the commercial center, and naval authorities, who wished to push it out even farther for an easier access to the new naval arsenal. Interestingly, it was the navy's insistence on giving its naval commander's new headquarters an unobstructed view of the harbor that was decisive, as a new, grander passenger rail terminal tucked in behind the arsenal was opened finally in 1914, on an emplacement 1000 meters from the old site.<sup>59</sup>

African land rights The growing importance of the escales and ports played a paramount role in shaping the colonial administration's attitude toward African claims of traditional land tenure. The government's record in recognizing these traditional claims had never been wholly consistent in the 19th century, with colonial officials taking care at times to purchase rights to land at times, and deliberately undermining or disregarding strong claims at other times.<sup>60</sup> Even as the DSL was being completed, officials were purchasing the rights to land on the future sites of the escales of Thiès and M'Pal, in French territory, from their African possessors before proceeding to survey

plots for auction at these sites.<sup>61</sup> In Cayor, the French state held title to wide perimeters around each of the DSL rail stations by treaty. But as long as a damel ruled, the ministry in Paris only allowed the government of Senegal to rent plots within these perimeters to French merchants and traders on a temporary, annual basis. It was only after the elimination of the damels in 1886, that the ministry finally permitted the colonial administration to form permanent escales and sell plots at these sites.<sup>62</sup> Even as late as 1896, the colonial government felt obliged, before expanding the perimeter of the growing escales into the Protectorate, to obtain a prior formal cession of the land in question in treaties with the paramount chiefs of Cayor and N'Diambour.<sup>63</sup> In that era, even the colonial government held that French citizens had to obtain chiefly permission before occupying terrain in the interior, though in practice the chiefs would obey administration orders.<sup>64</sup>

These distinctions and scruples were swept away by the ministerial decrees on land in 1900 and 1904, and by the dominance from 1907 of the administration's doctrine of being the sole proprietor of all unregistered lands in

Senegal.<sup>65</sup> Henceforth, as other railroads were built-- the Thiès-Kayes, the Louga-Linguère--colonial officials had few qualms about seizing land unregistered under French law for rail installations or for the new rail escales. Whole villages might even be removed from their old sites under this doctrine, with the occupants reimbursed only for the costs of displacement and for any crops ruined in the process.<sup>66</sup>

African property rights based on traditional claims had received some statutory recognition in article 2 of the decree of July 20, 1900 and were even guaranteed specifically in article 58 of the ministerial decree of July 24, 1906. These short passages seemed to promise that land held under traditional custom could no longer be sold or conceded to third parties by the government, without at least alerting the traditional claimants. The 1906 act also seemed to provide a means (though in practice a limited means) by which these claimants could obtain full title to the land under French law on the basis of their traditional rights.<sup>67</sup>

Nevertheless, the guarantees that might be read into these decrees for traditional rights were seriously undercut

in most urban areas by the administration's court victories in 1907 upholding the contention that the French state as successor to the *damel* held title under traditional law to all lands in Cayor or formerly in Cayor. The administration was bent, moreover, on narrowing the scope of the 1906 decree as much as possible, so as to retain for itself a decisive power of discretion in matters of land expropriation and registration.<sup>68</sup> Article 58 of the decree of 1906 was not intended, in any case, to maintain the social relations embodied in customary land law--for that matter, the colonial government only became familiar with the particulars of local African customary law later on.<sup>69</sup> Instead, officials had hoped vaguely that the decree of 1906 would indeed gradually reduce peasant mobility by leading eventually to the formation of a private property system of small peasant holdings based on the Civil Code.

Thus, the colonial administration specifically barred African collectivities from acquiring legal title to land in their own right.<sup>70</sup> Theoretically, the property might be registered in the name of the chiefs. But since the administration was also dead set against the formation of extensive *latifundia*, the chiefs were generally permitted to acquire only small parcels.<sup>71</sup> Nevertheless, given the

inconveniences of land registration and the general adherence to cultivation based on the traditional methods scorned by French officials, it was hardly surprising that there was in fact little formation of private property holdings in rural areas.<sup>72</sup>

It was, of course, the situation in urban areas that made the colonial government so sensitive to African land claims. On the one hand there were the public works programs undertaken by the Government General in the larger ports, such as Dakar--projects particularly dear to the Government General's overall policies. On the other hand, there was also the remarkable upsurge in the volume of peanut trade after 1900. As a result, new escales were being formed in the interior as trade moved deeper inland, while the older escales also expanded notably. Of the DSL escales, lots had been surveyed and auctioned earlier only at M'Pal (1883), at Thiès (1885) and at Tivaouane (1888). Merchants trading near the other stations along the line had been content in the meantime to rent lots in the government owned perimeters on a temporary basis. Formal auctions of lots first took place at Louga only in 1894, and at five other escales in the center of the line (Pire, Makhé,

Kelle, Kebemer, and Goumbo Gueoul) only in 1896; auctions were held in the other DSL escales only after 1899. The growth of the DSL escales, first marked by an ample enlargement of the government owned perimeters in 1896, was again exhibited in 1902 as the existing escale perimeters were doubled. Urban land auctions also began occurring more frequently at about this time. Only a short time later, lots were being sold at the new escales forming on the TK even as that line was under construction. Already before World War I, new trading centers were being formed and surveyed on the roads of the interior, and this development resumed on a much larger scale in the 1920's.<sup>73</sup> Most significantly, the growth of these urban areas was provoking an increasing awareness among Africans of the advantages of property titles, or at least of the disadvantages of their absence.

In 1883 and 1884, the damels had casually granted a St. Louisian merchant huge concessions of good terrain around the French-controlled perimeters at the new rail stations in Cayor--for a pittance.<sup>74</sup> By 1896, the chiefs of Cayor had hesitated, at least, before conceding to the French state wide zones of land (some already producing rent) on the outskirts of rail escales--and had received



in exchange the political command of a canton of Baol.<sup>75</sup> Still, at the same time, the bour N'Diambour was unhesitatingly ceding similar terrains around Louga, without any compensation.<sup>76</sup>

It was only belatedly in the first decade of the 20th century that chiefs were advancing claims to parcels of terrain within the main escales. Not surprisingly, it was the chiefs educated in French schools, or having frequent contact with Frenchmen, who made these claims earliest.<sup>77</sup> African traders of St. Louis had, of course, been among the first to purchase lots in the new rail escales, although some of these African purchasers may have been "fronting" for European firms. It is also clear that some St. Louisian creoles, at least, were actively speculating in escale property at an early date.<sup>78</sup> Perhaps one of the most interesting cases in regard to African land claims was that of Rawane Boye--a notable, former member of Senegal's General Council, and sometime trader. Boye had been already paid in 1887 for lands taken by the colony for a growing trade center at Leybar on the DSL line. In 1894, he undertook to sue the DSL for land occupied by its tracks on a great portion of its line between Leybar and St. Louis,

and for damages supposedly resulting from its installation in the 1880's. Boye was armed with solid traditional rights, confirmed by an arrêté of none other than Governor Faidherbe. Though the claim was clearly speculative in design, it tested some fundamental points in colonial jurisprudence, establishing for the first time, in the landmark's decision of the Court of Bordeaux in 1903 that rejected Boye's claim, that the state held rights of eminent domain over all land in Cayor.<sup>79</sup>

But speculation had little appeal for most Africans, few of whom possessed the means to indulge in it. There are indeed many recorded cases of Africans selling their land rights for cash, especially in urban areas, and there were at least some early instances of Africans who began to charge other Africans for use of land.<sup>80</sup> There were instances, later on, of African speculators taking land from others.<sup>81</sup> Nevertheless, in general there was not that much interest among Africans in procuring land in full title, even within the escales and ports, where it usually had been possible to occupy land with little regard for the official divisions of terrain into lots.<sup>82</sup> The procedures of land registration were difficult, in any case, and could

be distasteful if it involved the abrogation of someone else's traditional rights. For instance, despite a long history of steady usurpation of their land by the colonial regime, most Lebu in Dakar, although defending themselves rigorously against new encroachments, consistently abstained from securing their land as private property registered under French law until the mid-1920's.<sup>83</sup> It was a growing appreciation for the dangers of a precarious claim to land occupied in the urban areas, ports and escales, or in their immediate vicinities, that prodded many Africans into seeking more secure formal arrangements--for the administration was becoming more intolerant of both customary and informal occupation of urban land, which seemed to threaten not only its commercial and municipal plans, but European health itself.

Sanitation and segregation There had always been some tendency for separation of European and African housing in both the ports and escales in the late 19th century because of differing life styles. The formation of an African quarter at Guet N'Dar in St. Louis comes to mind as one example.<sup>84</sup> The very growth of the urban areas obliged the

authorities to relieve the effects of congestion with zoning ordinances prescribing health and safety measures, building codes, and street alignments, and to limit rowdy and clamorous activities. Local ordinances of this type were obviously drawn from metropolitan models, but also included bans on activities that seem to have annoyed Europeans such as nocturnal singing, drumming, and millet pounding by Africans.<sup>85</sup> A concern for fire safety was also evident in the reservation of empty zones around forts and explosive stores and along the railroad line, as well as in the separation of urban housing by wide rectilinear streets.<sup>86</sup> The questions of fire hazards, especially from the clusters of straw huts that sometimes caught fire near more permanent European structures, had occasioned sporadic expulsions of Africans from the centers of towns.<sup>87</sup> There were even some abortive efforts at laying out model villages near urban areas for occupation by African residents of the congested towns.<sup>88</sup> Yet in the 19th century, there had never been any serious effort to segregate Europeans and Africans in these areas on the basis of race; and European settled areas were, in fact, generally medleys of habitations of various types, styles and occupants.

The situation took a more serious turn after 1900 as the colonial government's program of port expansion ran into the unsavory sanitary conditions of ports with well-earned reputations as pestholes. Dakar's plight in 1900 tragically demonstrated the problem: there, a severe outbreak of yellow fever totally halted construction work underway on its harbor. Europeans had to be hastily evacuated, while the colonial government was obliged to shoulder the losses of the construction contractor.<sup>90</sup>

At first, the Government General set out to find a solution for these sanitation problems with ambitious plans for sewage and drainage ditches, refuse disposal, and street grading construction at St. Louis and Rufisque, as well as at Dakar.<sup>91</sup> Execution of these plans would have led inevitably to some additional separation of African and European housing, as at Rufisque, where the clearance of the commercial quarter and the construction of major drainage ditches was carried out with mass expulsions of Africans from the central parts of the town.<sup>92</sup> After 1900, however, even before this program could be fully implemented, new discoveries in tropical pathology led to an even stronger emphasis on segregation.

Nineteenth century germ theory, it must be remembered, considered that disease germs could pass easily from one material object to another. Deadly germs were assumed to be lurking within "unhealthy" soils in Africa, within the mists arising from streams, or borne through the air in wind gusts.<sup>93</sup> It was, for instance, a fear of disinter-ring germs supposedly infesting the earth of an abandoned cemetery at the foot of pont Faidherbe, that had prevented the DSL for so long from transferring its badly-located passenger station at St. Louis to the only site where it could effectively serve the town's commercial center.<sup>94</sup>

Yellow fever, the deadliest killer of Europeans, and malaria, it was now found, were only communicable from the bloodstreams of previous victims by mosquito bite. These findings, accepted in the area with reluctance even as late as 1910, naturally revamped public works construction projects and urban sanitation ordinances toward an emphasis on eliminating mosquito breeding grounds by draining and filling depressions where water pools could form and on enforcing stricter building codes.<sup>95</sup> The new knowledge happily saved many potential victims. Unfortunately, it also directed fresh attention to Africans as breeders

and carriers of these diseases, particularly since Africans, because they were less gravely afflicted by the disease, could also be unwitting intermediaries in transmitting these diseases to Europeans through mosquito bites. In the absence of a medical prophylaxis for yellow fever, it was obvious that a measure of safety would be gained for Europeans by segregating their living quarters from Africans.<sup>96</sup>

At an outbreak of yellow fever in 1911-1912, Africans were expelled by force from the escale of Thiès and installed in newly created villages on the periphery, and similar expulsions took place at Dakar.<sup>97</sup> Even before this, the administration had already taken steps to create segregated African villages in the north of Kaolack and in the south of Foundiougne in 1910. These villages were set up to house Africans dislodged from the commercial centers of these towns; and these towns were being cleared not only to make way for takeovers of occupied land in the centers, but also evidently with sanitary segregation in mind.<sup>98</sup> Chronologically, the maturation of the notion of segregated quarters in 1910 can be confirmed approximately by the coincidental construction of the TK railroad.

The first four escales surveyed for the new line--Khombole, Bambey, Diourbel, and Gossas--were laid out with solitary commercial centers next to the new rail stations, much as in the old DSL escales, with the plan for Gossas approved in November 1909. A map for the projected layout of Guinguineo, the fifth escale, dated April 8, 1911, announced plans, however, for a segregated African village to be set up in the vicinity of the escale.<sup>99</sup> Henceforth, at each new TK escale, two checker-board apportionments were made. A commercial escale slated for European residence, on lots auctioned by the government, was placed conveniently opposite the rail station. Africans could reside in this quarter, but only in housing meeting stringent construction regulations. A second quarter, located not far from the commercial escale and mapped out in a similar pattern, was reserved for African residence (see Figure 10f). These quarters set aside near previously unoccupied escales were not needed to accommodate any displaced Africans as in the older escales. They were plainly intended only to facilitate the immigration of a labor force and to stabilize its presence by facilitating worker access to sites for inexpensive lodging.



The new centers would differ fundamentally in two respects from the African villages heretofore nestling next to urban commercial areas in Senegal. They were, though this was rarely admitted publicly, to be deliberately separated from designated "European" areas in order to decrease the medical danger to Europeans from infection-bearing mosquitos (a separation zone of 800 meters was considered safe). At the same time, they were intended, in line with a much earlier concept endorsed in 1905 for Dakar by Governor General Roume, to provide urban living space for Africans on land reserved and mapped out by the administration. The predetermined rectilinear alignments would presumably not only create more hygienic conditions in these new-style African agglomerations and lead to an easier surveillance of them, but would also hopefully guide Africans toward a greater acceptance of European forms of urban living.<sup>100</sup>

Occupancy of a lot by a family head was free but precarious, and a permit of occupancy was revocable without compensation in case the quarter was to be displaced. Purchase of a full title to a lot was possible, but the initial purchase terms were too high in any case for most Africans even into the 1930's.<sup>101</sup>

Plans were soon made to extend the system to older urban centers. In 1912, a segregated African quarter was set up within the perimeter of Ziguinchor. The establishment of separate commercial and African quarters was discussed for Louga in 1912 and for Tivaouane as early as March 1914, though these were only implemented after World War I.<sup>102</sup>

The most dramatic move took place in Dakar, where earlier expulsions of Africans from central areas to make room for municipal reconstruction had exempted the Lebu, the original inhabitants of the town and claimants to a great proportion of its terrain.<sup>103</sup> Plans made earlier for a European sanitary quarter at Gorée in case of epidemic had been abandoned meanwhile as impractical.<sup>104</sup> An outbreak of bubonic plague in 1914 gave colonial officials an opportunity to oust the Lebu from the vicinity of the port and to divide the city into segregated quarters.<sup>105</sup> Sub-standard housing was torn down and burned and its occupants expelled to the Médina, a newly-created village reserved for Africans on the outskirts of the city, while strict construction regulations were instituted in the city. As many as 5,000 of the 20,000 African residents were removed

to Médina before the operation was halted for political reasons under wartime conditions.<sup>106</sup> Colonial officials continued to urge renewed displacements of Africans to the Médina throughout the war, but failed to obtain ministerial approval.<sup>107</sup> Eviction henceforth had to proceed in Dakar not on the basis of official segregation, but more slowly and subtly on the basis of stringent urban building codes; and Africans could avoid expulsion by arranging for construction in line with the codes.<sup>108</sup>

African urban living In the absence of any serious, contemporary studies of African urban life in Senegal before the 1930's, it is difficult to be precise to any great extent about the conditions of African urban life during the period considered.<sup>109</sup> Whatever attention was given to African urban and suburban dwellers was most likely to be directed toward the ancient occupants of the vicinity, such as the Lebu in Dakar, rather than to more recent immigrants and transients, who nonetheless formed an important element, if not the majority of both the labor force and population within the urban areas. Occasionally a rare, illuminating notation can be found on immigrant living conditions, as Canard's remarks in 1882 on an appalling shortage of sleep-

ing quarters for escaped slaves flocking into St. Louis at that time.<sup>110</sup> But generally, little was known of these, more volatile portions of the urban populace, whose comings and goings marred badly indeed the accuracy of colonial censuses.<sup>111</sup>

Dresch observed in 1950, that the white man in Africa could expect to be lodged by his employer, while the African was still expected to fend for himself.<sup>112</sup> Retired African railwaymen recall that in their day young men migrating in- to an urban or semi-urban area usually encountered little trouble in finding lodging and food. Even if there were no relatives, fellow countrymen, or recommended friends to be found locally, a newcomer could generally rely on tra- ditional African hospitality for temporary accommodations. It was also easy as a rule, affirm the ex-railwaymen, to rent room and board from local, settled families on a reg- ular monthly basis.<sup>113</sup> Canard's brief notation of 1882 reveals, interestingly enough, that such monthly rentals to migrants were a common practice in St. Louis at that time.<sup>114</sup> Reputedly, immigrant Tukolor or Sarakole men of the same region would tend to room together in large groups to save and share money. Other groups, notably the Wolof, were known, on the other hand, to prefer renting single-

occupancy lodging, whether in rooms or huts.<sup>115</sup>

The specific conditions of African occupancy in urban and suburban areas before the 1930's were usually established on an informal basis within and without commercial areas, often escaping official attention unless the area was to be cleared for new construction or sanitary segregation. An official alignment would often be disregarded in reality, as at Guinguineo, where a large African quarter took form just to the east of the commercial escale in spite of official plans designating a segregated African village on the other (south) side of the rail station.<sup>116</sup>

The shortcomings and dangers of informal occupancy first became apparent to Africans in the ports, as the administration moved from 1900 to implement massive construction programs. This was evident in Rufisque about 1902 as many Africans began to buy plots of land within the commune. It was also evident at St. Louis as large numbers of Africans also began to apply for property titles from about 1909, when it became evident that the colonial government might wrest control over municipal land from the commune of St. Louis.<sup>117</sup>

In the 1920's, informal occupancy, although still

widespread, was nevertheless becoming clearly less satisfactory and less tenable. One sign was the colonial administration's increased concern about housing for African workers in the mushrooming port of Dakar, with the creation of an Office of Economic Habitations in 1926 to deal with the problem.<sup>118</sup> Even more significant in this period was the creation of a large number of segregated African quarters both at older trade centers--as in Tivaouane in 1919, Louga in 1925, M'Bour in 1923--or at the host of newer trading centers being created in the interior.<sup>119</sup>

Segregated African quarters, of course, were the means by which the administration could reconcile its aspirations for both sanitation and an urban labor supply. But curiously, the system was being extended in the hinterland precisely when official efforts for racial separation were flagging in Dakar. There, in the mid-1920's, the administration was eradicating an 800 meter wide isolation zone erected between the Médina and the town in 1915 and 1918, while steps were being taken simultaneously to create a long-promised Lebu center in the Tound area of Dakar.<sup>120</sup>

A good deal of the impetus for creation of segregated quarters in the escales, however, was coming from the

Africans themselves.<sup>121</sup> This clearly came about not from a passion for segregation, but from a better appreciation by Africans of the hazards of informal occupation. The segregated quarters, however precarious in theory, were infinitely safer than occupation without official sanction. Full ownership of the occupied lot might even be obtained, since the terms of purchase, though onerous for Africans, enabled some who could not afford to buy and build within the escale, and who were unable to make a claim for land based on traditional rights, to enjoy the guarantees of ownership.<sup>122</sup>

The hazards of displacement from informally occupied lots were becoming all the more painful, since many Africans were also turning increasingly at the end of the war toward more solidly constructed housing, which could not be as easily transported or discarded as the old straw huts.<sup>123</sup> The tragic possibilities of dispossession were graphically displayed at Thiès in the early postwar period as an unfortunate court decision validated a questionable claim to 2 square kilometers of terrain in Thiès, over the administration's opposition. The unfortunate African occupants of this thickly populated area were now forced,

whatever the duration of their residence had been, to choose between paying the new owners or moving out without compensation.<sup>124</sup>

The interest of Africans in the formation of segregated quarters did not mean reconciliation with the objectives of the colonial power. European merchants for example, cast a baleful eye on the formation of African quarters, which constituted a potential commercial danger to its nearby trading centers. At first, commercial activity within the quarters had been strictly forbidden, and the ban on non-African residence or ownership within them also acted as an additional surety against clandestine European and Lebanese operations.<sup>125</sup> Yet in practice, the ban on petty trade proved ineffective, and tended in many cases to benefit Lebanese commerce more than European. An arrêté of 1924 had finally to recognize the fact by legalizing petty trade in these quarters, to the dismay of some merchants who suspected, with good reason, that this trade could stray into forbidden activities.<sup>126</sup>

The administration was also displeased by the development of these quarters into lively agglomerations with a life of their own, rather than mere sleeping quarters for



laborers and local cultivators. Marabouts, "griots", public writers, traders, sharpsters--elements of Senegalese society regarded as parasitic by French officials--were also attracted to these centers, which tended to free themselves from chiefly authority.<sup>127</sup> "The inhabitant of the [African] escale," lamented an official in 1934,

doesn't worry about the precariousness of his title . . . The habitation permit, although un-negotiable, is still the object of profitable speculation . . . little by little the inhabitants of the native escale escape all tax payments. Knowing how to avoid the law, lazy . . . detached from the authority of the canton chief, they escape prosecution . . . It can be said that the native escale exists in full independence, just within the bounds of regulations.<sup>128</sup>

Conclusion If a structural portrayal of the impact of the colonial situation on African society ever becomes possible, it would probably have to be mapped out largely in terms of opposing forces of attraction and repulsion acting on Africans in the aftermath of the conquest. The railroads were only one factor among others introduced or amplified by the colonial conquest. In facilitating the entry and circulation of the other factors, the railroad's primary role lay in molding the geographic stage (and to some degree the tempo) in which the interaction of these forces would be played out. In concentrating economic

activity in urban centers, the railroads were concentrating many of the contradictions and conflicts generated by the colonial situation, as well as its benefits, within narrow spatial confines.

At the same time, this compression was creating the material conditions which allowed the spread of a system of property values in the Western sense. African land was being transformed into a commodity to be gradually assimilated into a Westernized sector, just as was the African's laboring contribution. But the African's concepts of land, its value, and its relation to other facets of society were also being transformed subtly as well. The opportunities and predicaments posed by a spreading legal system of private property evoked, of course, a wide range of reactions among Africans, from a worldly-wise Rawane Boye, versed in the possibilities of speculation through court action, down to incomprehending peasants chased from their ancestral homes by new, alien landowners, backed by the forces of law. The critical ingredients in determining an individual's reactions were the degree of material (mainly financial) opportunity, the amount of material investment already sunk in the property, and the

degree of mastery of French legal procedures (indeed, familiarity with French culture)--each of which evolved progressively during the course of the colonial occupation. The African's stake in land could be a factor encouraging his acculturation, if he were not alienated meanwhile by dispossession. Not surprisingly, the distinctive feature of the emerging new attitudes toward land in this situation would be the decisive mediating role of the colonial apparatus between the African and his land.<sup>129</sup>

Notes

1. Freycinet at Senate debate, February 17, 1881, JORF-Débats Parl.- Sénat, p. 111, copy in ANF, F14/12439.
2. John R. Kellett, The Impact of Railways on Victorian Cities (London, 1969), pp. 337-346.
3. See Kellett, pp. 1-20. for an excellent summary.
4. Cross-cultural comparisons are much more illuminating if meaningfully-linked pairs of facets native to each society are compared, rather than dwelling upon the structure or evolution of any one facet taken in isolation in each society. Not only is more revealed about each facet in both societies, but the dynamic relation between the paired facets in either society can expose much about the natures of the societies and, therefore, of the problems that can arise from cross-cultural contact. Land and labor are obviously such a pair of facets. Paul Bohannan also pinpoints another pair of such facets in editing Law and Warfare (Garden City, 1967), since the relation between "authority" and "conflict" are also of fundamental importance. Much of the basic argument in this text was presented in P. Pheffer, Problems of Land and Labor in Colonial Senegal: French Colonial Administrative Action Before 1930. Presented at the Fifteenth Annual Meeting of the African Studies Association, Philadelphia, November 8-11, 1972.
5. See Paul Bohannan, Africa and Africans (Garden City, 1964), pp. 174-182; Elizabeth Colson, "The Impact of the Colonial Period on the Definition of Land Rights," in Victor Turner, ed., Colonialism in Africa, Vol. III (London, 1971), pp. 193-215. An obvious partial exception is the "oualo" terrain of the Senegal river valley, whose fertility is renewed by the river's inundation. But even here, given the general cultural and economic setting, the relation of land to labor was not much different than nearby drier regions.
6. There are several fine works on this subject, including L. Geismar, Recueil des coutumes civiles des races du

Sénégal (St. Louis, 1933); Paul Pelissier, Les paysans du Sénégal (St. Yrieux, 1966), especially pp. 123-133; Etienne Le Roy and Mamadou Niang, Systèmes fonciers africains. Le régime juridique chez les Wolof ruraux du Sénégal. Associee du CNRS, no. 201 (Paris, 1971).

7. Pathé Diagne, Pouvoir politique traditionnel en Afrique Occidentale (Paris, 1967), pp. 84, 91, 103-105, 171-173, 210-213.
8. It would be interesting to analyze the economic and social relations of the region in terms of "land rights" used as coinage in a "market" of marriage alliances and political favors. A circulation of "goods" results, but on a strongly personalized basis. See Fredrik Barth, "Economic Spheres in Darfur," in Themes in Economic Anthropology, ed. by Raymond Firth (London, 1970), pp. 149-174, on the demarcation of economic spheres within total patterns of circulation of value.
9. Two separate issues were involved, both tied to the size of the settlement. One was the rectilinear layout for urban hygiene and fire prevention. This existed at St. Louis at least as early as 1705 (see Abdoulaye Ly, La Compagnie du Sénégal / Paris, 1958\_7 , map opposite p. 272). The other was private property ownership, which would acquire importance once a government had taken charge of a colonial post, whose terrains would be divided among various private firms and government services.
10. Once an agglomeration was formed, the specialized services it offered also acted as a magnet; but the attraction was generally too weak at most sites to create a need for a system of private property values.
11. E.g., see J. D. Fage, A History of West Africa (Cambridge, 1969), pp. 68-77. For stretches of the African coast, the slave trade was concentrated at particular entrepôts (Hopkins, Economic History, p. 106); but this occurred mainly where Africans were able to exercise greater control over the trade.

12. Aumont, pp. 3ff, describes the clandestine trade of the "marigotiers" who evaded regulations restricting river trade to certain escales.
13. See Hopkins, Economic History, pp. 149-151, 195. Larger ships became more profitable partly because, in the late 19th century, products hauled from West Africa were of low value for large bulk. Lighter cargo shipping in the Saloum up to Kaolack, however, was a partial exception to the general trend.
14. E.g., see the report of May 1887 by the Chief of Senegal's Public Works service, Sallenave, FOM, Senegal XII,71, with its comments on Las Palmas.
15. See Pasquier, "Villes du Sénégal," op. cit.
16. Maximizing safety and minimizing tolls were the chief considerations in choosing a caravan route. The French conquest eventually eliminated both dangers and tolls, so that a variety of routes became available.
17. The gradation of land values in the immediate vicinity of the rail stations is easily confirmed from records of lot auctions at trading centers near these stations. At this point, without further research, a gradation in rural land values can only be conjectured on the basis of the costs of animal transport with distance. There was an upsurge of speculative interest among St. Louisians over old land concessions in Oualo as the railroad was being built; but little came of it. See note for GS by V. Ballot, August 13, 1884, FOM, Senegal XV,1.
18. Enclosures were installed after World War I around Rufisque's station because of a surge of thefts. Earlier attempts at enclosure in the 1890's failed. Examples of informal occupation of railroad property are in GS to Director DN, October 28, 1939, RA; Chief of 2nd track district to Chief of Track Service, November 10, 1939, RA; Telegram, Administrator Thiès to GS, March 23, 1929, SARS, DCF. Most DSL terrain had never been formally registered during the period in which the company ran the line. Much of the terrain taken for the TK was also unregistered in 1929 (Bosc to IGTP, October 19,

1929, RA).

19. The expansion of Thiès was particularly difficult in the 20th century because so much of the terrain ring-ing the original center had been appropriated earlier by a military base, a Catholic mission, and private owners. See G. Savonnet, La ville de Thiès (St. Louis, Senegal, 1955), pp. 30ff, and especially Administrator Thiès to GS, December 12, 1902, SARS, DCF.
20. Treaties with local sovereigns in the 1880's and 1890's usually included a standard clause allowing the French state to take land for building forts, roads, or rail-roads.
21. There was much interest in developing castor oil or rubber latex as a cash crop. See e.g., the arrêté of November 27, 1890, copy in SARS, DCF; Administrator Thiès to GS, March 19, 1914, Ibid.; Administrator Thiès to GS, March 6, 1910, SARS, DCF; Delegate Senegal (Dakar) to GS, August 17, 1908, SARS, DCF.
22. The colony's General Council was hostile to the admin-istration's grant of a concession in the Casamance from 1889 to a private firm. See brochure of the Compagnie Commerciale et Agricole de la Casamance (1889), copy in FOM, Senegal XV,34. On the other hand, the administration opposed an attempt by some St. Lou-isiens to stake out a large rural concession near Thiès. See, e.g., Director Native Affairs to Faure, December 24, 1898, FOM, Senegal XV,34.
23. As in lands conceded to Devès and Chaumet in 1899 in Cayor (Administrator Tivaouane to GS, January 27, 1908, SARS, DCF).
24. This point is made succinctly in Suret-Canale, L'ère coloniale, p. 239. The governor could grant (decree of October 23, 1904) concessions of up to 200 hec-tares, and the Governor General up to 2000 ha., without ministerial approval. Some examples of moderation that show sympathy for African occupants are Administrator Thiès to GS, January 25, 1909, SARS, DCF; Administra-tor Tambacounda to GS, September 3, 1923, SARS, DCF.

25. GG to GS, June 3, 1905, SARS, DCF. See also P.V., Conseil Privé, March 1, 1902, SARS, DCF, on a concession demanded by Demoly; Administrator Louga to GS, July 17, 1913, SARS, DCF.
26. As in Dakar or Rufisque in the 1860's, where traders avoided rent payments to the government by purchasing land from local inhabitants. See P.V., Conseil d'Administration, March 21, 1862, FOM, Senegal XV, 28. There were many examples later. The Laude affair in which an apparently bogus purchase was upheld in the courts, stands as perhaps the most drastic example of the difficulties into which the administration could fall. See, e.g., Richard to MC, May 27, 1919, FOM, AP524(9); GS to GG, August 18, 1921, Ibid.
27. The formation of the two distinct areas was a complicated development from 1890 to 1902, inextricably enmeshed with local politics in St. Louis. The juridical distinctions between land regimes in the two areas disappeared in the ministerial decree of October 23, 1904, well before the political fusion of the two areas in 1920. See JOS, November 12, 1904, no. 202, pp. 608-610.
28. Under terms of articles 2236 and 2237 of the Civil Code. This point is made by Gilbert Epinay in his very useful Les droits domaniaux de l'état et la propriété foncière autochtone au Sénégal, thèse du docteur, University of Paris (Paris, 1949), p. 283.
29. Many documents allude to the difficulty in getting surveyors to lay out alignments at various sites. The comments of Governor Cor on a report of August 25, 1925, SARS, DCF, testify to the importance of this obstacle in developing a coherent land policy.
30. Pasquier, "Villes," p. 388; Jean Dresch, "Villes d'Afrique Occidentale," Cahiers d'Outre-Mer, July-September 1950, p. 201.
31. See the remarks by Abdoulaye Bara Diop, Société toucouleur et migration (Dakar, 1965), pp. 85-91.



32. See Jacques Charpy, La fondation de Dakar (Paris, 1958), pp. 265-295.
33. Compensation, in accord with a decree of February 16, 1889, was set by a court of local notables, who were also property owners. Acting GS Antonnetti complained against the system in a letter to GG, March 23, 1915, SARS, Confid. See also GG to MC, May 13, 1915, FOM, AP522.
34. An excellent summation of the doctrine is given by one of its architects--in GG (Merlin) to GS, February 27, 1923, SARS, DCF. See also G. Epinay's dissertation (1949), op. cit. for a very good account of the evolution of the doctrine. The precedents usually cited in government documents were those of the arrêts of February 8, 1907 and March 1, 1907 of the Court of Appeals of French West Africa. An arrêt of the Court of Bordeaux on January 24, 1903 had already established the principle in rejecting the suit of an African notable against the DSL. Earlier the concept had been rejected by the Conseil d'Etat in 1892, and it was finally knocked down by an arrêt of March 10, 1933 on a case in Dahomey before the Court of Appeals (AOF).
35. Circular of GG to Lt. Governors, June 5, 1906, SARS, DCF; GG circular, March 5, 1913, Ibid.
36. The decree of October 18, 1904 reconstituting the Government General on a politically and financially secure basis was followed by a decree of October 23, 1904 on domanial questions. The general claim resulted from the way in which the phrase "terres vacantes et sans maîtres" was interpreted by the administration. See GG circular, March 5, 1913, SARS, DCF.
37. In an arrêt of the Court of Appeals of French West Africa, July 16, 1915. The claim, although supposedly based on ancient rights of the French state, effectively stripped the colony of Senegal, and therefore the colony's General Council, of any voice in the disposal of land in the colony. At the same time, the communes no longer could sell terrains within the perimeters of their borders as they had previously. See G. Epinay, op. cit., pp. 275-278. See also session of the

Municipal Council of Rufisque, November 26, 1912, SARS, DCF; GG to MC, January 31, 1913, FOM, AP522; GG to MC, August 7, 1909, Ibid.; acting GS to Mayor of Rufisque, October 6, 1923, SARS, DCF.

38. Key legal measures were the arrêtés of January 5, 1887 (Moniteur du Sénégal, January 13, 1887, pp. 1-2), the decree of October 23, 1904 (JOS, November 12, 1904, pp. 608-610) and local arrêtés of August 30, 1906, (JOS, October 4, 1906, pp. 572-573), October 9, 1909 (JOS, October 17, 1909, p. 597) and February 19, 1910 (JOS, March 3, 1910, p. 164). The arrêté of May 13, 1927, pp. 423-424) was intended to correct abuses of occupation permits.
39. Thiès, in its later stages of growth, was a partial exception, because the Catholic mission property blocked expansion to the north. But the older part of the escale clearly continued to be predominant. Savonet, pp. 107-133.
40. Diagonal streets were laid out at Louga to avoid making traders move their operations (P.V., Commission charged with layout of Louga, March 16 & 17, 1893, SARS, DCF; copy of plan of Louga, drawn September 14, 1893, Ibid.) and at Kelle (map of Kelle drawn up July 20, 1895, and approved April 2, 1896). A map of Rao, July 31, 1923, SARS, DCF, shows that the pattern approved for Rao in 1903 (Private Council, March 25, 1903) was largely ignored.
41. As in merchants of M'Pal to Director of Native Affairs, February 9, 1888, SARS, DCF. See above Chapter III.
42. Charpy, Fondation, pp. 328-329 (Pinet-Laprade to GS, May 9, 1862). See also copy GS to Attorney General, November 17, 1912, SARS, DCF.
43. Arrêtés of December 31, 1904, erected limited municipal governments ("communes-mixtes") at Thiès, Tivaouane, and Louga. (JOS, January 7, 1905, no. 210, pp. 1-2). Other escales were erected into communes-mixtes later (as Kaolack, Khombole, Bambey, Gossas, etc.). Building codes in these centers, particularly from 1911, also increased business costs.

44. GS to Administrator Baol, February 24, 1911, SARS, DCF; GS to Administrator Sine-Saloum, September 9, 1912, SARS, DCF; acting president, CC-Sine-Saloum to GS, October 12, 1912, Ibid.; GS to Administrator Baol, n.d. /~September 1918\_7, SARS, Confid; Telegram GS to Administrator Thiès, June 11, 1919, SARS, DCF.
45. Chief of Agriculture Service to GS, April 2, 1911, SARS, DCF; copy GS to presidents of CC's of Senegal, n.d. /~February 1912\_7, SARS, DCF; see also copy GG to GS, October 24, 1912, SARS, DCF; Administrator Baol to GS, March 14, 1912, Ibid.; on ambulant traders in escales and in African markets.
46. The policy of converting the small trade centers into subdivided escales also aimed both at cutting down Lebanese and African competition by forcing these traders to buy in auction the lots they already occupied and at reducing the state's losses in rents due to informal occupation. See copy GS to Administrator Kaolack, November 26, 1920, SARS, DCF; Administrator Baol to GS, October 27, 1924, SARS, DCF; Administrator Sine-Saloum to GS, June 22, 1926, SARS, DCF.
47. There were many arrêtés permitting the installation of tram lines for commercial purposes (as well as for temporary use on public works). One of the earliest is an arrêté of December 6, 1879 permitting Maurel & Prom to install a line on Gorée (Bull. admin du Sénégal-1879, no. 772).
48. Rufisque had a municipally-run system in the 1890's. The Société Sénégalaise des Voies Economiques set out in 1909 to construct and run narrow-gauge tram lines in the new TK escales and in some of the older DSL escales. By 1920, Louga had taken over its system from the company. See Municipal Council of Louga, P.V. of February 3, 1917, SARS, DCF.
49. E.g., in 1908, the municipality of Rufisque estimated that 180,000 francs of receipts would be collected in tolls on the tramway in 1909 out of 268,400 francs total in budgetary receipts (P.V., Municipal Council, May 15, 1908, SARS, DCF).

50. Petyt report, 1891-1892, FOM, TP, p. 113.
51. One heavy blow to St. Louis was the plunge in gum prices after 1900. The competition of the TKN from 1924 subsequently diverted river traffic from the French Sudan to Dakar and Kaolack. Construction of the new station only began in 1907 (report of DSL board of directors to stockholders, June 16, 1909, FOM, TP).
52. Plan of Kaolack, March 8, 1915, SARS, DCF.
53. Map of Kaolack by Chief of Topographic Section, September 9, 1926, SARS, DCF; map of Kaolack, 1937, ARS, 3G<sup>1</sup>/6-17.
54. See Chapter II above.
55. See Richard Peterec, Dakar and West African Development, (New York, 1967), pp. 37-43.
56. Plan cadastral Dakar, July 12, 1877, SARS, DCF; Plan cadastral Dakar, 1885, SARS, DCF; map of terrains of Messageries Maritimes in Dakar, March 21, 1892, SARS, DCF; map used for Hersent project, n.d. [1901], FOM, TP. Competition for space was all the more intense after 1900. See navy situation in Dakar by the naval commandant, January 23, 1902, ANF, DD<sup>2</sup>/2452.
57. Projected works for the commercial port of Dakar, April 20, 1899, FOM, TP; deliberations of General Council (Senegal), session of 1898 (excerpt in FOM, TP, dated November 23, 1898).
58. Petyt report for 1891-1892, FOM, TP, p. 100. Mixed conference for the study of the displacement of the Dakar station, January 17, 1906, ANF, DD<sup>2</sup>/2452.
59. Map of Dakar, 1904, ARS, P263; note for central service of hydraulic works, August 11, 1905, ANF, DD<sup>2</sup>/2452; reports of services at meeting of January 17, 1906, Ibid. Paillet to Naval Minister, April 12, 1907, Ibid.; P.V., Commission, May 17, 1911, Ibid.; L'AOF, March 9, 1912, no. 187, p. 1; "La nouvelle gare de Dakar," L'AOF, June 13, 1914, no. 281, p.1.

60. One example would be the directives in Director of Interior to Administrator Cayor, September 22, 1896, SARS, DCF; see also ARS, 2G13-14(11).
61. Conseil privé of Senegal, excerpt of deliberation, November 20, 1883, SARS, DCF; Delegate Interior (Dakar) to Director Interior, January 17, 1885, SARS, DCF. But African claims for land taken for the rail line in Dakar were disregarded (Conseil Général-1886, P.V., June 8, 1886, p. 109).
62. Acting GS to MMC, September 9, 1884, FOM, 2B58; S/Sec to GS, October 29, 1884, copy in FOM, Senegal XV,1; acting GS to MMC, December 22, 1884, Ibid.; same, June 23, 1887, Ibid.; draft MMC to GS, August 5, 1887, Ibid.; acting GS to MMC, September 4, 1887, Ibid.
63. Copy Director Native Affairs to Administrator St. Louis-Cayor, March 15, 1896, SARS, DCF.
64. Convention of December 12, 1892 with the chiefs of the cercle of St. Louis, copy in FOM, Senegal XV,34; GG to MC, June 3, 1897, Ibid.
65. See GG to GS, December 6, 1904, SARS, DCF.
66. Appropriation of land was covered in article 10 of the decree of October 23, 1904; see also acting GS to Administrator Louga, October 11, 1926, SARS, DCF; note by acting Director of Economic Affairs to IGTP, November 18, 1929, ARS, 6P46-36.
67. Instructions of October 23, 1906 by Merlin, JOS, November 8, 1906, no. 306, pp. 663-666.
68. See especially GG to GS, May 8, 1907, SARS, DCF; same, October 13, 1920, SARS, DCF. A note on terrains at Tivaouane, August 6, 1912, SARS, DCF, pointed out that immigrants to the area (virtually all residents of the escale) were not entitled to benefits under traditional rights. Occupation also had to be definite and effective for a long prior period of time. A limitation on traditional rights continued even with the new decree

of October 8, 1925. See copy GS to Administrator Baol, December 20, 1926, SARS, DCF.

69. Delafosse published his study of Upper Senegal-Niger in 1912. Administration files reveal detailed studies of land tenure laws for the different cercles of Senegal only as early as 1916 in response to the questionnaire of a commission set up in October 23, 1915. E.g., for Thiès (June 18, 1916), Sine-Saloum (March 8, 1917), Cayor (March 9, 1917), etc. A complete published study was first issued by Geismar only in 1933 (op. cit.)
70. Instructions of October 23, 1906 by Merlin; copy GS to Administrator Baol, November 11, 1919, SARS, DCF, indicates that this applied to the extent of denying worshippers the right to buy land in common for a mosque.
71. Acting GG to MC, June 9, 1901, FOM, TP; GG circular of March 5, 1913 on agrarian policy, copy in SARS, DCF. The administration followed the same principle in denying, or at least in trying to deny, rural concessions in full property to Mouride collectivities (GS to Administrator Baol, December 30, 1913, SARS, Confid; GS to Blaise Diagne, September 2, 1918, SARS, DCF; Administrator Baol to GS, August 1, 1922, Ibid.)
72. Circular GG to Lt. Governors, December 17, 1921, SARS, DCF; note on "régime foncier," July 30, 1932, Ibid.
73. Arrêté by GG, June 7, 1902 expanded the perimeters of the territorial reserves around most DSL stations to squares of 2000 meters by 2000 meters. The extension of many DSL escales in 1896 expanded most of their perimeters from oblong shapes of a 300m radius around the rail station to squares of 1000m x 1000m. New escales were rapidly surveyed along the TK even as that line was being built (see GS circular to Administrators, March 23, 1909, SARS, DCF).
74. See the maps showing the grants to Lodoïs Neubourg in August 1883 and the larger concessions to Gaston Neubourg in August 1884 at Tivaouane, Pire, N'Dande, and Kebemer in FOM, AP3024. See also GG to MC, May 26, 1905, Ibid.; Mme Neubourg, March 8, 1906, Ibid.; GS to MMC, June 23, 1884, FOM, 2B 54.

75. Treaty of March 23, 1896, SARS, DCF; Director Native Affairs to Administrator St. Louis-Cayor, March 15, 1896, SARS, DCF; Administrator St. Louis-Cayor to Director Native Affairs, April 3, 1896, Ibid., noted that Demba War made 5,000 francs per year on these rents at Tivaouane.
76. Administrator St. Louis-Cayor to Director Native Affairs, April 3, 1896, SARS, DCF. Later the "bour," jealous of Demba War's receipt of a province for his land, put in a claim for three terrains in the escale of Louga (GG to MC, January 10, 1899, Senegal XII,111).
77. Meissa M'Baye, son of Demba War, only got around to asking for a lot in Tivaouane in 1912 (GS to Administrator Cayor, March 8, 1912, SARS, DCF) and for a rural concession at his father's old headquarters at Sakh in 1910 (Administrator Tivaouane to GS, May 10, 1910, SARS, DCF). Examples of chiefs interested in property ownership at an early date are Bouna N'Diaye and Fara Biram Lô, both well acquainted with French practices. Often a chief would try to obtain a parcel next to the French administrator's residence (e.g., the bour Sine at Fatick and the chiefs Samba Khary Cissé and Socé Sow at Louga.
78. Notably the d'Erneville--Justin, Germain, Georges.
79. The case remained in the courts at least until 1910. Rawane Boye had asked for over a half million francs in 1894. Interestingly enough, the claim originated remotely with Boye's ancestor, the "Jean Barre" who first allowed French settlement on the island of St. Louis. The key decision was made in the arrêt of June 24, 1903 of the Court of Bordeaux, copy of excerpt in FOM, TP, on the narrow and doubtful grounds that the canton of Toubé had formed part of Cayor. See also acting GG to MC, June 9, 1901, FOM, TP; GG to MC, January 19, 1906, Ibid.
80. Particularly for lands bought in Dakar and Rufisque going back as early as the 1860's. A questionnaire on land tenure in Thiès, n.d. [circa 1902], SARS, DCF, noted that the original Serer occupants normally let

strangers cultivate land on a temporary basis for a cow or the equivalent, but also remarked that some communities were now renting their surplus land at 5 francs per year for a one-man field. It also mentioned one case of a Bambara who had bought a hectare for 100 francs, and then sold it to a Frenchman for 4000 francs. See also Administrator Thiès to GS, March 6, 1910, SARS, DCF, on rental of land near M'Bao.

81. E.g., note on terrain of Diokouly N'Diayène (Rufisque), March 20, 1924, SARS, DCF. This is not to deny that there were disputes over possession of rural land in traditional societies; but these arose and were settled in a different manner than those now regulated by French law.
82. A note of acting GS, August 20, 1930, ARS, L63-132, stated that in Senegal, excluding Dakar, as of December 31, 1928 the government held 5,650 hectares of registered land in its own name, that Frenchmen held 6,163 ha. more; but that Africans had a total of only 1,150 ha. Vadier to Director Agence Economique, March 29, 1930, Ibid., listed some 4,276 ha. in the hands of 1,807 proprietors in Dakar without distinguishing between African and European proprietors.
83. Armand-Pierre Angrand, Les Lébous de la presqu'île du Cap Vert (Dakar, 1946), pp. 102-132; Delegate Senegal (Dakar) to GS, September 19, 1907, SARS, DCF. Many were content with a certificate signed by a government official attesting to the accuracy of their traditional claim. This, however, did little good if the administration decided later on to take the land (draft GS circular, January 13, 1925, SARS, DCF). The Tound area was set aside in 1905 as a quarter held communally by the Lebu community, but registered for that purpose in the name of the state. See Delegate Senegal (Dakar) to GS, September 1, 1913, SARS, DCF.
84. Camille Camara, Saint-Louis du Sénégal (Dakar, 1968), pp. 231-239.
85. E.g., local arrêté of Administrator-Mayor of Louga, December 8, 1905, SARS, DCF; same, December 1, 1912, Ibid.



86. As noted in Moniteur du Sénégal, January 12, 1888, no. 1673, p. 11. Areas were also cleared around forts for military reasons.
87. As in St. Louis in the 1850's (Camara, St. Louis, pp. 56-57 and again in 1889 (Moniteur du Sénégal, January 31, 1889, no. 1728, pp. 50-51). Or in Dakar (Moniteur du Sénégal, April 11, 1889, no. 1738, pp. 138-139). See also Roger Pasquier, "Les villes du Sénégal au XIX<sup>e</sup> siècle, Revue française d'histoire d'Outre-Mer, 1960, p. 419.
88. As at Goukhombaye at St. Louis under Faidherbe and in the 1880's (Camara, St. Louis, p. 56; arrêté of March 31, 1884 creating the village, SARS, DCF).
89. As in d'Anfreville de la Salle, Notre vieux Sénégal, (Paris, 1909), pp. 23-24, 73, 181-182; Partial report on urban hygiene (Senegal) by Marchoux, n.d. [1901], FOM, TP.
90. Note of Director of Construction of the Arsenal, November 29, 1905, ANF, DD<sup>2</sup>/2431.
91. Report, Director Public Works, Ficatier, December 16, 1902, FOM, TP.
92. The report of a sanitary mission to Senegal (Partial report on urban hygiene, by Marchoux, n.d. [1901], FOM, TP) recommended expulsion of all straw huts and wood shacks from the major centers, because of a belief that these structures, if infected, could not be sanitized. A local arrêté of June 8, 1903 by the assistant mayor of Rufisque, SARS, DCF, ordered the ejection of all straw huts beyond the new drainage canals erected around the commercial quarter.
93. A theory still advocated by Dr. A Kermorgant in "Epidémie de fièvre jaune du Sénégal, 16 avril 1900 au février 1901," Annales d'Hygiène et de Médecine Coloniales, no. 3, July-Aug. Sept., 1901, copy published by Ministry of Colonies in FOM, AP3236. The Government General seemed on the way to

accepting the mosquito theory in 1904 (See copy of of Comite Supérieur d'Hygiène..., session of June 21, 1904, in Ibid., pp. 46-47), but the theory was still not fully proven in 1905 (See Frederic Haskin, The Panama Canal / Garden City, 1914 /, pp. 105-112). See also Claude Pulvenis, "The épidémie de fièvre jaune à St. Louis du Sénégal (1881)", Bulletin de l'IFAN, XXX, series B, 1968, pp. 1352-1373.

94. Draft Petyt report, n.d. / 1898 /, FOM, TP; DSL to MC, November 23, 1900, FOM, TP. The papers of a consulting engineer working on Rufisque's sewage system were burned for fear of contamination after he died of yellow fever (P.V. Municipal Council, May 22, 1905, SARS, DCF).
95. The Government General had to override objections of local authorities in Grand-Bassam against using old cemetery terrains in P.V., Comité Supérieur d'Hygiène..., March 5, 1910, FOM, AP3239; GG to MC, January 9, 1911, Ibid.
96. The stegomya mosquito is a nocturnal creature, preferring obscure corners during the day, and coming out in large numbers at night. Reference is rarely made to this motive. See P.V. Comité Supérieur d'Hygiène et Salubrité Publiques, Session June 17 to 21, 1904, FOM, AP3236, esp. p. 22; Note on "Terrains de l'ound," by P. Denard, July 26, 1921, ARS, 4P660-132.
97. On the Thiès expulsions, see report of 4th trimester 1911, ARS, 2G11-7; report of second trimester 1912, ARS, 2G12-9; copy acting GG to GS, April 20, 1912, ARS, H54. A health emergency was declared at Thiès in an arrêté of January 20, 1912. On expulsions in Dakar, see telegram GG to MC, September 28, 1911, FOM, AP3239; political report, 3rd trimester, 1911, ARS, 2G11-7.
98. Administrator Sine-Saloum to GS, June 27, 1910, SARS, DCF; same, September 5, 1910, SARS, DCF; same, April 7, 1913, Ibid.; Two arrêtés of October 29, 1910, in JOS, November 10, 1910, no. 515, pp. 832-833.

A plan for the new African village was drawn up in November 1910 (map of November 24, 1910, SARS, DCF). Similar plans for Fatick were approved in 1911 (report to GS, August 21, 1911, Ibid.; Administrator Sine Saloum to GS, March 21, 1911, Ibid.).

99. The plan for Gossas was approved on November 25, 1909 (draft GS to Administrator Sine Saloum, SARS, DCF). The map for Guinguineo was drawn up April 11, 1911; but a revised version was drawn up October 20, 1911 (SARS, DCF). A plan showing an extension of Bambey, without mention of segregated areas, was drawn up on April 12, 1910 and approved on June 15, 1910. Perhaps the arrival in 1910 of a new administrator charged with command of the cercle of Sine Saloum played some role in the development.
100. See the excellent exposé in the note on "Terrains de Tound" by P. Denard; July 26, 1921, ARS, 4P660-132. Roume aimed at the erection of African villages on land owned by the state, with lots available free for residents, but with street alignments determined rigorously by the state.
101. Report of Inspector of Administrative Affairs to GS, August 30, 1934, SARS, DCF. A note of the 1er Bureau (Senegal), n.d. [after 1924], SARS, DCF, noted only a dozen properties owned in the African quarter of Kaolack (erected 1910). Some marabouts were active in acquiring both urban and rural terrains after the turn of the century. Speculation may have been an aim; but it is more likely that the purchases were motivated by defensive attitudes--of marabouts acquiring prestige by creating zones of land not subject to administrative confiscation.
102. P.V., Municipal Commission of Louga, February 2, 1912, SARS, DCF. Bize to GS, March 10, 1914, SARS, DCF. P.V. of Municipal Commission of Tivaouane, May 28, 1914, SARS, DCF. Plans were afoot in 1912 to add a segregated village at

Diourbel (Chief Topographic Service to GS, February 9, 1912, SARS, DCF). GS to GG, April 18, 1912, ARS, P246, indicates that a segregated system was being considered for St. Louis at that time. See also Administrator Dagana to GS, March 30, 1912, SARS, DCF.

103. Report by Boulland de l'Escale, 1909, doc. no. 85, ARS, 1G267, p. 27; D'Anfreville, Notre vieux Sénégal, p. 73.
104. Grall report to MC, February 10, 1913, ARS, H54.
105. This story is told by Raymond Betts, "The establishment of the Médina in Dakar, Senegal, 1914, "Africa, XLI (1971), pp. 143-152. A plan to install an African village at the site of the future Médina had been underfoot as early as 1909. (Boulland de l'Escale report-1909, ARS, 1G267). An outbreak of bubonic plague in St. Louis also led to turmoil in 1918 because of quarantining; but the consequences were less drastic. (GS to GG, March 25, 1918, SARS, Confid).
106. The expulsions were clearly motivated in part because of an antagonism toward Africans, by some high officials. See acting GS to GG, July 11, 1914, SARS, Confid. Care was taken, however, to admit laborers into the city for work in the port area (P.V., Local committee of Hygiene, May 18, 1914, ARS, H55.).
107. GG to MC, September 16, 1916, FOM, AP3238; Kair report, November 6, 1916 (Picanon mission), Ibid.; acting GG to MC, July 18, 1916, Ibid.; report of GG to MC, February 15, 1919, FOM, AP3237. Large scale resettlement in the Médina would have required a projected trolley line to carry workers to the port, some 3 to 4 kms. away.
108. See acting GS speech to General Council, session of October 1915, pp. 16-19.
109. As in the inquiry of 1938 on the habitation and

alimentation of Africans in French West Africa  
(Report on food, June 27, 1938, SARS, DCF).

110. Canard to MMC, April 23, 1882, FOM, Senegal I, 62; same, May 23, 1882, ARS, 2B54.
111. A letter of Senegal's Record Office to Director Interior, March 1, 1888, SARS, DCF concluded that although many of the huts and shacks in urban areas were being rented (by verbal agreement), so little was known of the floating population, that it was impossible to collect the legal tax on rents.
112. Dresch, p. 206. "Le Blanc est logé dans sa ville, par son employeur, entreprise ou état; le Noir se débrouille." There was a growing tendency for employers to house their European employees after 1900; but even as late as 1921, the housing crisis was so severe in Dakar that many couldn't find lodging, even in the port's hotels. (Note presented to GG, by the Commission of January 17, 1921, ARS, L40-39), Europeans commonly rented lodging in St. Louis; but this was apparently more difficult from about 1928 (GS to GG, September 19, 1928, SARS, Confid.).
113. Ex-RR interviews. One informant, starting to work for the TK at a good wage in 1917 of 4 francs per day (6½ day week), paid a landlady for a room in Thiès (Diakhao quarter) some 12.50 francs per month rent and 15 francs per month board.
114. Canard to MMC, April 23, 1882, FOM, Senegal I, 62: "A St. Louis la plupart des maisons sont des asiles qui abritent un nombre incroyable d'individues; les cours, les rez-dechausées, les dessous des escaliers memes sont habités, les chambres sont occupées chacune par une vingtaine d'individus. Ces maisons appartiennent des familles indigènes; généralement c'est une signare qui loue; elle occupe là un petit logement tout le monde l'appelle 'Tauta' elle pourvoit à la nourriture de tous moyennant une quinzaine de francs par mois et par tête."

115. Ex-RR interviews. Confirmed in the Affaires Politiques report on Wolof seamen, July 1938, ARS, 17G-160-28.
116. Report Deseille, Decembre 23, 1932, SARS, DCF; Chief Topographic Section to GS, January 27, 1933, Ibid.; note of February 9, 1933 by Chief Public Works Service, Ibid.; arrêté of October 3, 1933, Ibid. The same was true for other TK escales, save Kaolack. See note for GS, n.d. [ July 1926 ], SARS, DCF.
117. On Rufisque, see e.g., P.V., Municipal council of Rufisque December 9, 1902, SARS, DCF; same, May 6, 1903, Ibid. This was occurring when a new sewage system was being built in Rufisque and when many Africans were being expelled from the town center. On St. Louis, see Mayor of St. Louis to GS, December 18, 1909, SARS, DCF; Receveur Domaines to GS, January 12, 1910, Ibid.; GS to GG, February 15, 1910, Ibid. acting Chief Topographic service to Chief Public Works, October 24, 1912, Ibid.; P.V., St. Louis Municipal Council, February 16, 1912, Ibid. Mayor of St. Louis to GS, July 16, 1913, Ibid.; acting GS to Mayor of St. Louis, June 20, 1914, Ibid.
118. Created by a decree of June 14, 1926, the Office of Economic Habitation had to be reorganized in an arrêté of August 4, 1934 in order to be effective.
119. See Administrator Baol to GS, March 30, 1924, SARS, DCF. A list of April 10, 1928, SARS, DCF, suggested extending segregation to Pire, Mekhé, Kelle, N'Dande, Kebemer, and Goumbo Gueoul.
120. P.V., Sanitary Council, Circonscription Dakar, October 9, 1925, excerpt in FOM, AP3238; MC to GG, April 20, 1926, Ibid. Serious official interest in a Lebu village in the Tound is evident as early as in copy Delegate Senegal (Dakar) to Mayor of Dakar, April 23, 1921, SARS, DCF.
121. Telegram Administrator Sine Saloum to GS, May 13,

1919, SARS, DCF; Administrator Baol to GS, January 15, 1924, SARS, DCF; same, August 17, 1923, Ibid.; petition of Thiès residents to Administrator Thiès, November 12, 1926, 1926, SARS, DCF; notables Thiès to GS, March 20, 1925, SARS, DCF; Administrator Louga to GS, June 26, 1927, SARS, DCF; notables M'Bour to President, Colonial Council, March 19, 1929, SARS, DCF; notables of Keur El Hadjie Malic at Gossas to Administrator commune-mixte of Gossas, February 17, 1933, SARS, DCF; inhabitants of Guinguineo to Administrator Sine Saloum, September 16, 1931, SARS, DCF.

122. From about 1923 there was a marked increase in the number of application by Africans for certificats administratifs--a first step to obtaining property rights; perhaps this was an indication of new attitudes among returning African veterans.
123. Report of Chief Customs Service Senegal-1923, SARS, DCF.
124. Administrator Thiès to GS, December 1, 1921, SARS, DCF; same, December 22, 1923, SARS, DCF. This was the Laude affair. Laude, a feared colonial officer, apparently forced or forged an irregular sale of land at Thiès while using a servant as a front. The claim was upheld in court in May 1918 on the narrow issue that the administration could not claim eminent domain because Thiès had never been part of Cayor. The local residents tried to stop the takeover with their own legal suit, which was rejected. See GG to MC, May 29, 1920, FOM, AP524(9).
125. GS to Administrator Sine-Saloum, December 26, 1912, SARS, DCF; Arrêté of October 30, 1912, JOS, November 7, 1912, no. 619, p. 860; Arrêté of August 16, 1913, JOS, August 21, 1913, no. 660, p. 848; Significantly the first segregated quarter in Foundiougne was deliberately laid out at a time when the escale's merchants were away and could not protest (Director Public Works to GS, July 23, 1910, SARS, DCF). See also acting GS to GG, July 18, 1915, SARS, Confid.

126. Lebanese traders previously had simply set up boutiques for petty trade on open terrain just outside the African quarters. Administrator Baol to GS, January 23, 1924, SARS, DCF; same, October 27, 1924, SARS, DCF; Administrator Thiès to GS, February 9, 1926, SARS, DCF.
127. Inspector of Administrative Affairs to GS, August 30, 1934, SARS, DCF.
128. Ibid.
129. Jacques Lombard comes close to saying this in his excellent work: Autorités traditionnelles et pouvoirs européens en Afrique Noire (Paris, 1967), pp. 93-94. However, Lombard, whose interest was in the chiefs, seems to exaggerate to some extent their interest in terrains and their traditional role in this respect.



## CHAPTER VII

### RETREAT INTO A NARROWER PATTERN

Each economic region corresponds to . . . an axis, branched on the exterior by a port. . . . Each region resembles a sort of lung, with its parallel arterial and venous systems, receiving its oxygen from agricultural production. But the system's heart is located externally, far overseas.<sup>1</sup>

After an unsettling period of post-World War price and monetary instability, economic activity in Senegal seemed finally to be easing into a period of new prosperity from about 1924.<sup>2</sup> By 1928, however, the Senegalese economy began to weaken with a worldwide downturn in commodity prices, and a year later it entered upon a new, major period of prolonged, severe deflation and contraction as a general international economic crisis sharply intensified the local crisis. As in all such major crises, powerful economic tides cruelly tested existing economic structures, reshaping the economic landscape of Senegal drastically as the weaker and less fortunate firms and individuals were toppled by the receding economic waters into

a quagmire of defaulted credit. It was a financial cataclysm in which less hardy economic alternatives and institutions were ruthlessly eliminated.<sup>3</sup>

Commerce in Senegal had always been based on a generous, even imprudent, extension of credit, which trickled down in a pyramidal chain from the large merchants (generally of Bordeaux) through small traders and even down to the cultivator, who might borrow his seed on credit--while the large merchant himself raised cash by borrowing from metropolitan banks. Now, as the price of peanuts fell sharply on European markets, intermediate merchants and traders were bankrupted by their debts as their own debtors defaulted. The two largest investment banks specializing in French West Africa were soon in difficulties, and major French commercial houses sharply reduced their operations in the interior.<sup>4</sup> Various optimistic schemes for increased private investment in Senegal--such as the projects for new, light, narrow-gauge railways in Senegal--simply evaporated. And the economic crisis continued to deepen. After experiencing successive disappointing trading seasons, many discouraged farmers turned back to the more reliable subsistence crops while cutting down sharply on peanut cultivation for export. If the peanut trade were not to

collapse completely, taking with it the entire weakened economic structure of the colony, the colonial government had to take action to give cultivators higher prices for their peanuts.

A variety of organizational and fiscal measures were proposed and executed at different times by the government. Some were designed to secure a better market for peanuts in the metropole by raising tariff barriers against foreign competitors and by upgrading the overall quality of peanut exports through field inspections. Other measures aimed at slashing intermediate handling and marketing costs by eliminating superfluous middlemen (such as the ubiquitous small African trader) from the chain of exchange and credit, and by reducing freight hauling rates. This was the era in which the SIP's ("Sociétés indigènes de prévoyance") began to be transformed from "cooperative" seed reserves for cultivators into marketing agents for them.<sup>5</sup> It was also the moment that transportation networks in Senegal were going to be reshaped into a new and rigid mold.

Purchase of the DSL It was evident that railroad freight rates ought to be reduced as part of the effort to main-

tain peanut exports at reasonable prices and volumes. But it was also plain that this could come about equitably only if the unwieldy division of the rail net between two different railroad managements--the DSL and TN--were ended, and if rail service were consolidated and streamlined.

Coordination of common operations on the two separate lines of the Senegalese rail network had been an issue ever since the DSL had been ousted from participation in the fledgling Thiès-Kayes line in 1910.<sup>6</sup> Operations of the TN line had been especially penalized by its termination at Thiès on the DSL line some 40 and 70 kms away from the major ports of Rufisque and Dakar. The TN's alternative outlet to the sea at Kaolack relieved it, to be sure, from a complete dependence on the DSL; but both the colonial government and a large fraction of local merchants were always unhappy with the consequent diversion of traffic from Dakar and Rufisque, entailing as it did substantial extra capital investment in port and commercial facilities at Kaolack.<sup>7</sup>

Government purchase of the entire DSL line under the terms of the 1880 convention was one solution; but the metropolitan government shrank from the costly price tag for such an action, which would moreover only have ben-

efited some colonial interests at the metropole's expense.<sup>8</sup> The Government General would have been willing to purchase the key Thiès-Dakar section of the DSL alone; but the company had no intention of parting with the most valuable section of its line. Construction by the government of its own Thiès-Dakar spur parallel to the DSL was also impossible politically and legally, since it would have struck a major blow at the company's viability by drawing off a good part of its traffic.<sup>9</sup> It might be expected that a simple consolidation of rates and fares on the two lines would serve as a practical alternative, enabling rail users to use either line as an extension of the other. Some merchants, for instance, wished that cheap long-distance degressive rates for peanut freight on the TN simply apply for the remaining 70 kms of DSL line to Dakar. Rail passengers wished for better timing of connecting passenger runs and more through service across the lines. In reality, however, there were serious obstacles to simple solutions for cross-line traffic problems, not the least of which was the division of common traffic receipts.<sup>10</sup>

It must be remembered that operations along the two lines were of a fundamentally different nature. The

Thies-Niger, saddled with extensive operations over 1100 kms of track, much of it through barren, unpopulated areas, effectively cast the burden for its long-haul operations onto users of the more prosperous portions of the line by means of a degressive freight rate structure, while the railroad line's receipts barely covered its operating expenses. Passing through the populous littoral, the DSL carried a denser traffic over a shorter line, while its receipts, produced from rates and fares directly proportional to the distance hauled, were generally almost double the line's operating expenses after 1900. Whereas, the TN, in its role as a major instrument of governmental economic and strategic policy, might be operated at financially unprofitable levels, the DSL was expected, in contrast, to produce a substantial profit for the private corporation that owned it, as well as to repay the metropolitan treasury for the huge sums advanced to the company earlier.<sup>11</sup> If, for instance, one tried to attract more of Diourbel's peanuts to Dakar by applying the TN's degressive rates for the additional 70 kms of DSL line, the DSL would stand to lose from the resulting expense arising out of a heavier consequent traffic and a drop in receipts on an already assured through traffic from

Bambey and Khombole. These losses would therefore have to be made up to the company, either by giving the DSL a disproportionate share of receipts from the common TN-DSL run (at the expense of a financially feeble TN) or by raising fares and rates for other parts of the DSL line (anathema to local merchants).<sup>12</sup>

The dislocations of the World War and its aftermath only complicated an already murky picture. The DSL's costs of operation shot up sharply from 1917, as the prices of fuel and replacement parts skyrocketed and as personnel salaries jumped by large percentages in several steps beginning with the labor unrest of 1919.<sup>13</sup> Orders in the United States for new rolling stock in 1919, for instance, doubled in cost almost overnight simply because of the franc's immediate post-war decline.<sup>14</sup> The economy bonus, which had formed an important part of the company's profits during the pre-war period, shrank to nil as rapidly rising real expenses dwarfed the nominal expense figures calculated from the formulas of the convention of 1900.<sup>15</sup> At the same time, the company's reserve funds became totally inadequate not only because of inflation, but because the company had invested these funds in securities that had dropped in value in the meantime.<sup>16</sup>

To top it off, customer claims for losses due to missing, stolen, and damaged freight grew to alarming proportions-- almost 1,300,00 francs in 1920, 570,000 francs in 1922-- and the French government refused to cover any of these losses.<sup>17</sup>

In order to survive as a viable operation, the DSL obviously needed new revenues from higher freight rates and passenger fares, as well as from a reworked version of the old convention formulas, which might award the company new economy bonuses under inflationary conditions. These changes were reasonable enough given the inflationary situation. Unfortunately, bound as it was by the terms of the original 1880 convention to maintain its rates and fares at stipulated levels, the DSL had to obtain parliamentary approval for any changes. For their part, contemporary government officials were reluctant to let the basic working agreements be altered for what were viewed as temporary perturbations in the economy. Finally by 1920, the National Assembly allowed the DSL to raise its rates and fares, but only on a basis worked out jointly between the company and the Ministries of Finance and Colonies for application over a fixed, limited period, with the expectation that the economic situation would settle down mean-



while.<sup>18</sup>

The upshot, given the continuing economic instability, was a succession of protracted negotiations leading to temporary agreements in 1920, 1921, 1925, and 1929 on the financial formulas for DSL operations, while rates and fares were also allowed to rise by joint agreement at several junctures. The additional revenues raised from the higher rates and fares were fed into a special fund, whose assets were distributed according to a complicated set of formulas to the profit of the company, the French treasury, and new, larger reserve funds for the railroad. It is not surprising, given the unforeseen manner in which the economy evolved, that the clumsy, inflexible formulas did not work very well, leading to all sorts of acrimonious quarrels as the terms were repeatedly renegotiated between the principals.<sup>19</sup>

It might be thought that the DSL's delicate financial and legal position would have made the company comply readily with the Government General's policies on rates and fares. Sentiment in the ministry, as in the Government General, it must be noted, was still strongly in favor of reducing DSL profits in the interest of the colony's commerce as a whole. The war emergency may have

induced the Ministry of Colonies, indeed, to drop its earlier efforts to suspend application of the overgenerous convention of 1900, for it allowed this convention's continued application from 1915, with the benefits to the DSL only moderately trimmed.<sup>20</sup> Nevertheless, the ministry never actually retracted its earlier denunciation of the convention of 1900, and the DSL's pleas for financial relief were received coldly at first.<sup>21</sup>

Surprisingly though, the colony's leverage over the DSL was less effective than might have been expected. The indifference, real or pretended, of the Ministry of Colonies to the DSL's financial plight was, in reality, sharply limited by the countervailing interest of the French treasury--the watchdogs at the Ministry of Finance in particular--in seeing to it that the DSL generate large enough receipts in order to pay off some of its huge debt to the state, or at least enough to service the large annual interest on the debt.<sup>22</sup> A canny DSL management was even able several times in the course of the 1920's to turn the colony's argument for a common DSL-TN rate and fare structure around into a means of obtaining rate and fare increases in tandem with increases on the financially beleaguered TN, even when the DSL really did

not need the increase.<sup>23</sup> Senegalese merchants were quick enough to object that raising DSL rates to equal the highest level on the TN's degressive scales was hardly justified at times when the DSL was turning a good profit. But the DSL generally received its requested hikes.<sup>24</sup>

The controversy over uniform DSL-TN rates (at the time technically DSL-TK rates) came to a head in 1921-1922, when the colonial government, which had permitted large rate increases for both the TK and DSL earlier in 1921, proposed that both the DSL and the soon-to-be fused TKN now lower freight rates significantly, especially for long-haul traffic, in order to stimulate commerce in the interior. The efforts of the Government General, energetically supported by the Ministry of Colonies, to force compliance from an uncooperative DSL company were frustrated, however, by the adverse ruling of a consultative interministerial committee.<sup>25</sup> Lower rates on the DSL might have spurred business activity for Senegalese merchants as the Government General claimed, but a majority on the committee objected that this acknowledged benefit to the colony's commerce (it would also increase the federation's tax revenues indirectly) would take place at the expense of the metropole's treasury, which

stood to lose thereby a share of the DSL's potential profits due in repayment of earlier subsidies to the company. Maintenance of high DSL rates, on the other hand, might change the company's account with the state from a long-standing accumulating liability into something of an asset.

The Government General continued to argue for lower DSL rates into 1924.<sup>26</sup> But by then, the DSL's obstinacy was resoundingly vindicated as a flood of traffic overwhelmed an underequipped, undermanned, and barely viable TKN. The management of this government-owned railroad was severely upbraided for poor service by the very merchants it had acted to please with lower rates. TKN rates subsequently had to be hiked back up in order to meet the operating costs of needed new material and personnel. In contrast, operating conditions on the DSL line and the financial health of the company, with its stable high rate structure, improved remarkably during the same period. The metropolitan government was certainly pleased as the DSL management repayed a very good portion of the company's old debt in the period of relative economic prosperity from 1924 to 1930.<sup>27</sup>

Perhaps this denouement accounts in large part for the noticeably improved relations during the following

period between the DSL and the Ministry of Colonies, and even the Government General (despite continued wrangling over some rate issues). It was in 1927 that the DSL was awarded a 25 year lease by the colony of Senegal for operation of the Louga-Linguère spur line under very attractive financial conditions.<sup>28</sup> During this period also, the complicated regime of short-term financial arrangements were finally scrapped, as the DSL obtained from the French legislature in 1931 a new convention much like that of 1900, with most of the original formulary constants simply multiplied by a factor accounting for the post-war inflation of the franc.<sup>29</sup>

This relatively amiable atmosphere did not persist, however, as the economic crisis of the Great Depression hit with full force in Senegal. As receipts fell, the DSL reacted initially by raising its rates; but in the face of a rapidly dwindling traffic, the DSL's total operating receipts still plunged. Peanut freight fell from 178,736 tons in 1929 to 125,408 tons in 1931, and then to 47,870 tons in 1932. In the same period, overall DSL freight traffic dropped by 68% to 99,755 tons in 1932, while the number of DSL passengers shrank from 545,771 in 1929 down to 99,443 in 1932.<sup>30</sup> The financial

arrangements of the recently concluded convention, devised as they were for more prosperous conditions, failed to yield any economy bonuses for the company, whose management was soon asking for a new convention.<sup>31</sup> The company's curtailments of operating expenses could not come close to matching the drastic decline in receipts, so that the carefully accumulated reserve funds were soon exhausted in covering the large deficits.<sup>32</sup>

Raising more revenue through increased rates was self-defeating and later out of the question given the fragile state of the economy. Lowering rates was also unpalatable since it would only increase the deficit. Oddly enough, operation of the unsuccessful Louga-Linguère line was a bright spot in the DSL's finances, because of an operating contract that obliged the unfortunate colony of Senegal to pay the company a large minimum bonus, whatever the volume of traffic carried on the line.<sup>33</sup>

Basically the DSL was kept afloat financially by the metropolitan government's guarantee of its stock dividends under the terms of the convention, which effectively compelled government coverage of DSL budget deficits as before 1900. Metropolitan officials were appalled, however, at the size of the mounting company deficits--well

over 9 million francs for fiscal year 1932 alone.<sup>34</sup> DSL management seems to have been inclined toward sitting out the economic storm, buoyed as they were by the guarantee, in the hopes of an early recovery in Senegal's economy. But government officials were interested in a less expensive remedy. The question was, what was to be done.

Purchase of the DSL by the government offered one clear-cut solution. The terms of purchase of the DSL by the metropole had been set down in the original 1880 convention, and there was a solid precedent for this kind of action in the government's purchase in 1909 of the metropolitan Western railroad.<sup>35</sup> Yet, the government was visibly reluctant to assume the burden of purchase, which according to the terms of the convention would have saddled the French treasury with the obligation to pay the DSL company an annuity of 1,300,000 francs for the next 51 years.<sup>36</sup> It was the Government General instead which stepped forward to propose direct purchase of the line by the colonial government itself--an act that relieved the metropolitan budget of any future expenditures for the DSL.

The Government General had been absorbed since the onset of the crisis with reinvigorating the sagging Senegalese economy by a coordinated policy of lower freight rates

on both the DSL and TN railroads. Negotiations aimed at unifying and harmonizing rates and fares on the DSL and TN were indeed undertaken in 1930 between the DSL, the Government General and the ministries in Paris. But the old three-sided controversies among the principals soon flared up, despite some progress on rate unification, as the company acted to limit potential receipt losses, first by raising rates in 1930; then by balancing the rate decreases obtained by government negotiators with rate hikes in other sections of the DSL's rate schedules.<sup>37</sup>

The colonial federation's purchase of the DSL seemed to offer a way out of these problems, since it would simplify the political and financial arrangements for running the line. It was not that the Government General and the Ministry of Colonies were particularly bent on eliminating private enterprise from the operation of the Senegalese railroads. Colonial officials were, on the contrary, also seriously considering at the same time a project for turning over the management of operations on all the rail lines in French West Africa--government-controlled as well as the DSL--to a consortium of metropolitan railroad companies and banks.<sup>38</sup> The point was that an outright purchase of the DSL would finally enable the Government



General to impose its own economic policies on a consolidated network of Senegalese rail lines without the unwelcome opposition of a private company pursuing its own narrow interests over a portion of the network. The combined administration of a purchased DSL and TN would also allow substantial savings on joint operation expenses, which would be passed on to commercial users of the rail lines in the form of reductions on a consolidated DSL-TN rate and fare structure.

Negotiations between the DSL and the Government General for a direct retrocession of the rail line to the colonial federation proceeded apace in mid-1932, ending with the conclusion of a convention in September 1932.<sup>39</sup> Final approval of the agreement and its implementation were held up, however, because of the dilatory tactics of DSL stockholders and the delays inherent in parliamentary approval until April of the following year. Meanwhile, the DSL company continued to run the line, technically as the agent of the Government General, from January 1, 1933, the nominal date of transfer of the line, until the actual transfer on May 1st. Under the terms of the final agreement, the DSL company yielded the DSL and Louga-Linguère rail lines, their equipment, their budgetary

assets and liabilities--less some real estate properties not used directly for rail operations--and received in exchange an assured schedule, up through 1983, of substantial annuity payments by the Government General.<sup>40</sup>

A new era dawned with the fusion of Senegalese railroads under the colonial government's control in May 1933, and the rejection of the private metropolitan consortium's bid for operation of the unified network in 1934. Officials of the TN administration, charged with management of the new Dakar-Niger railroad, ruthlessly purged the staff and work force of the old DSL, diminishing their ranks in order to reduce rail expenses. The center of gravity of economic activity in colonial Senegal, heretofore radiating from two roughly perpendicular railroad spines, was slowly but perceptibly shifted southward and eastward, following in large measure the newly-consolidated main Dakar-Niger artery, which passed through Thiès and Diourbel on the way to Tambacounda, while the Thiès-St. Louis portion of the old DSL was reduced to a mere branch of the main trunk.<sup>41</sup> In the meantime, however, the colonial government had been obliged to take other important steps to assure economic development in this direction.

Automobile versus rail If the railroad had been a useful,

but imperfect instrument for solving transportation problems in West Africa, the advent of the automobile, with its solid advantages of flexibility and low fixed capital investment, seems in retrospect to have offered a particularly favorable opportunity for further growth in Senegal, not only of the export sector of the economy, but also of domestic interchanges of goods.<sup>42</sup>

Demonstrating again a vivacious predisposition for solving the problems handicapping their operations in tropical Africa with the latest technical devices, French colonial officers had tried to introduce the automobile into the region as early as 1899 in an abortive experiment in transportation service for the Sudan.<sup>43</sup> Virtually no automobiles were operating in Senegal as late as 1914.<sup>44</sup> But in 1916, French colonial officials already were strongly interested in linking North and West Africa by automobile, and were acting to cover the railroad gap on the unfinished TK line with a connecting regular automobile service for mail and a limited passenger and freight traffic.<sup>45</sup> By 1921 some adventurous souls even succeeded in reaching St. Louis from Dakar in 6 hours by driving their autos along the sandy beaches connecting the two ports.<sup>46</sup>

More serious was the abiding, growing concern of the colonial administration, from the early 1920's at least, to improve and extend the colony's rudimentary network of dirt trails so that they might carry auto traffic.<sup>47</sup> The length of the network utilisable by auto was estimated optimistically by 1926 to stretch over 10,000 kms within Senegal; but in reality, except for the short, paved stretch from Dakar to Rufisque, the roads and trails were of uneven quality, often without usable bridges and barely passable even in the dry season.<sup>48</sup>

Nevertheless, as cheaper, American-built autos and trucks became generally more available from the mid-1920's, there was a remarkable upsurge in the number of such vehicles imported into Senegal. An estimated 945 vehicles were imported in 1925, 1598 in 1926, 602 in 1927, and then 844 in 1928. Despite increasing government restrictions and taxation, an estimated 3,087 additional vehicles, and some 46,700,000 liters of gasoline were imported into Senegal in the period 1929 to 1932.<sup>49</sup> And most of these vehicles were utilized commercially as common carriers, not pleasure vehicles.

It was obvious that these vehicles would be used to serve areas hitherto disadvantaged by their remoteness

from the railroad. It was expected at first, therefore, that the motor vehicle would play a useful complementary role to the locomotive, feeding traffic to the railroad station as a more efficient version of the pack animal carriers that had been hauling produce along roads and trails running perpendicular to the rail line for some time. It soon became evident, however, that trucks hauling produce could simply bypass a railroad station, and indeed the nearby escale, to head directly for a port. By mid-1928, a number of French commercial houses with operations based on the railroad escales were already noting, with some alarm, that competitors driving trucks were buying up peanuts directly from farmers at the sites of production, bypassing entirely the escales, which were consequently suffering from a sharp decline in business activity.<sup>50</sup> Many of the truck owners were, moreover, small African or Lebanese entrepreneurs, who were being spared the expense of heavy investment in a fixed escale installation, with Frenchmen, only recently driven back to the escales by the yellow fever epidemic of 1927, put at a clear disadvantage.<sup>51</sup>

This motor vehicle traffic was growing rapidly. No precise figures are available to gauge the volume of this

traffic; but one survey of vehicles circulating daily on the Dakar-Rufisque road alone yielded an average daily count of 114 freight haulers and 75 passenger carriers in March 1928, which grew to 237 freight haulers and 288 passenger carriers daily by March 1929.<sup>52</sup>

The evident danger to French-based commerce and to the system of escales soon produced a reversal in the colonial administration's attitude toward the motor car. Serious consideration was once more given to limiting the number of points at which the trade in peanuts could take place, ostensibly to assure the quality of the exported product by facilitating government inspection.<sup>53</sup> In response to the concerns of the large French commercial houses, stiff new tariff duties were imposed on imported motor vehicles and gasoline.<sup>54</sup> The railroad already under construction from Louga to Linguère, the line projected from Diourbel to Touba, and the various projects for narrow-gauge rail lines branching from the main railroads were almost certainly designed, in part, to replace an already extensive truck traffic in the interior.<sup>55</sup> But road traffic continued to grow.

The consequent diversion of freight traffic from the railroads to trucks was disturbing. The tonnage of slow

freight carried by the DSL fell from a high of 423,909 tons in 1926 down to 314,039 tons by 1929, while total freight tonnage on the TN went from 297,705 tons to 262,523 in the same period (though admittedly total peanut exports from Senegal fell from 494,000 tons to 407,000 tons at the same time).<sup>56</sup> Even more serious as a threat to the viability of the railroads, however, was the growing diversion of its passenger traffic to common carrier motor vehicles. Passengers carried annually by the DSL fell from a high of 1,042,217 in 1925 down to 545,771 in 1929, even before the onset of the economic crisis, which brought passenger service down to a low of 99,443 by 1932. The TN also experienced a similar drop in passenger traffic, which went from 1,090,088 in 1925 to 591,093 in 1929 (though the TN's subsequent low was 346,629 passengers in 1931).<sup>57</sup> Measured in terms of the product of passengers times the distance travelled, the DSL had gone from 51 million kms-travelled in 1925 to 27 million in 1929, while the TN had gone from 98 million kilometers-travelled to 52 million during the same period. An estimate of auto traffic on three roads--Louga-Diourbel, St. Louis-Louga, and Dakar-Rufisque--concluded that the railroads were losing 10½ million kilometers-travelled in traffic to the

highways annually for those three runs alone.<sup>58</sup> The losses in third and fourth class passengers were particularly serious, since this service had previously been one of the most profitable elements of traffic on the DSL and TN railroads. It had indeed been an essential element, whose margin of profits had permitted the rail lines to set lower freight rates for selected products, such as the low-priced, bulky peanuts, and even comparatively low fares for other passenger classes, thereby stimulating business activity along the rail line.<sup>59</sup>

The DSL made several, largely unsuccessful attempts to lure passengers back to the railroad, mainly with reduced-fare, light express trains.<sup>60</sup> However, it was simply much more convenient for passengers to take to the highways rather than the railroad. The trains were more comfortable and less subject to breakdowns than autos. But voyagers travelling to a center located a dozen kilometers or more from a railroad station could make the journey with less effort and in less time in a motor vehicle. The voyager would generally be spared a long march to and from the railroad stations (as in Dakar where the passenger station was far from the African Médina). The auto ride itself would often be shorter, especially for trips requiring



train connections. A trip from Louga to Diourbel took 4 to 6 hours by auto, compared to 8 hours by train; while it took only 6 hours to get from Kaolack to Dakar by several routes, as compared to 11 hours by train during weekdays.<sup>61</sup>

Moreover, unlike a railroad, where vehicles could roll on the tracks only according to tight schedules at the direction of a central railroad management, the roads were available at all times to any user equipped with a vehicle. Autos with seven passengers, or trucks carrying twenty, would start off as soon as a full complement of passengers were on board. Departures would occur often on the popular, crowded runs in contrast to the railroads with their limited, fixed schedules, with most trains subject to long unscheduled delays while freight was loaded and unloaded at stations enroute.<sup>62</sup>

It might have been expected that a common carrier road service would not have been profitable in a territory where poor roads and a hot climate wore out the vehicles twice as fast as in France. In fact, even with stiff import taxes on autos and gasoline, skillful local entrepreneurs could gain a reasonable return from an automobile passenger service at fares, which for rel-

atively short runs and for the more populous centers were roughly equivalent to those on the railroad.<sup>63</sup> The continuing ability of trucks to compete with trains for hauling freight was also evident.<sup>64</sup>

One early measure that the colonial administration did take against the increasing road traffic was simply to allow roads running parallel with the railroad lines to fall into disrepair.<sup>65</sup> This was particularly easy to do at a time when a strong local political effort was being made to relieve rural Africans of the prestation obligation to labor a set number of days annually on local bridge and road repairs.<sup>66</sup> The railroad administrations were indeed hopeful that the competition by parallel roads might be greatly reduced by this means, even as roads perpendicular to the rail lines were maintained as feeders for railroad traffic. But this policy of selective road neglect was patently unrealistic when so many major centers lay along the rail lines. It had little immediate impact on road traffic in any case, especially along the heavily travelled Dakar-Rufisque highway, which had to be maintained for political reasons.<sup>67</sup>

The onset of the economic crisis gravely magnified the problem posed by the automobile as early as 1928.

Merchants were calling on the railroads to reduce their freight rates, even as the railroad was forced to compete with the more flexible motor vehicle for a share of an ever-shrinking passenger and freight traffic. The French merchants, forced as they were to retrench by closing down branch operations in the smaller escales in the interior, were upset that free-lance truckers could bypass their remaining fixed operations in the larger escales by purchasing the peanut crops directly on site from the growers.

In metropolitan France, the confrontation between rail and route during the depression led the government to ease competition by imposing a coordinated division of traffic between the two vehicular modes.<sup>68</sup> In Senegal, the colonial administration acted simply to eliminate the motor vehicle from the competition with a succession of severely discriminatory measures. This began with a local *arrêté* in Senegal in January 1931, which made the roads running parallel to the railroad lines off limits to motor vehicles above a certain weight class (1000 kg in the dry season, 600 kg for the hibernage).<sup>69</sup> Vehicle registrations and driver permits were then made renewable in a time-consuming procedure on a quarterly instead of

an annual basis, while the fees were raised to punitive levels.<sup>70</sup> The tax on gasoline was raised.<sup>71</sup> Several communes and communes-mixtes in Senegal also decided a little later that exorbitant daily parking fees for common carrier vehicles would be useful fiscal money-raisers.<sup>72</sup>

Appeals by French auto dealers against the discriminatory measures, particularly against that of January 1931, led to some apparent relief in the form of a new local arrete in December 1931; but the freer circulation allowed under this measure was set to end in June 1933. Moreover, it would apply only to vehicles registered at a particular government agency before May 1931, and this right was not transferable to any new owner of the vehicle.<sup>73</sup>

As if this were not enough, an arrêté of June 1932 suddenly restricted peanut commerce in the interior to a fixed number of selected escales (143 in 1932, selected supposedly to limit the journey from the fields to a 25 km maximum).<sup>74</sup> Finally, an arrêté of 1934 flatly banned the use of trucks for hauling peanuts to the trading centers, limiting the carrying trade to slow, costly pack animals--camels, mules, oxen.<sup>75</sup>

Of course, the colonial government could muster some plausible reasons for each of these measures. Heavy

truck traffic, it was alleged, wore out the roads rapidly, burdening the colony with extra expenditures for repairs. A growing vehicular traffic was obviously in need of careful government regulation. The practice of Lebanese truckers in buying up crops might lead to a drastically shortened buying season (and monopoly of the trade by the Lebanese).<sup>76</sup> Even the resort to animal carriers was justified by the argument that it would provide a necessary stimulus to the local development of animal husbandry, ultimately benefiting African farmers as a growing supply of draught animals became available for plowing.<sup>77</sup>

In the final analysis, nevertheless, these arguments--save perhaps the underlying, real fear of Lebanese competition--should not be taken too seriously. Heavy road traffic required more road maintenance--and the colonial administration could win local African support for a campaign against the auto by raising the specter of increased rural road prestations. But license fees and import tariffs on gasoline and vehicles were producing enough revenues to finance road repairs with professional road crews.<sup>78</sup> In reality, the colonial administration was deliberately hampering the use of commercial vehicles simply in order to protect the railroads from a dangerous

competitor.

In rebuttal to the qualified sympathy given by another government official to the complaints of French automobile dealers facing ruin in Senegal, a high official of the Ministry of Colonies insisted that automobile traffic ought indeed to be penalized in the interest of the colonial railroads, whose:

administration could survive only as long as [its] monopoly was maintained, excluding all competition which might permit the passengers and high-valued merchandise to escape it. That is the price to pay for low [rail] rates on low-valued freight.<sup>79</sup>

Rate structures on the railroads were designed to support the export of low-value freight from the interior by discriminating against more lucrative elements of traffic. To remove these elements from the railroad's traffic was to wreck the railroad's entire financial structure, and to change its operation and purpose. But the railroad was indeed being well protected. Even by 1931, the importation of vehicles was already down to 221 for the year.<sup>80</sup> The earlier brisk business in automobile imports was reduced to nil in short order. A growing transportation network of great flexibility and promise had been arrested, and then ruthlessly eliminated from the scene.<sup>81</sup>

Aftermath Government actions taken in the wake of the economic crisis cast the economic substructure of Senegal into the narrow mold it was to assume for the next several decades. Various measures of protection and subsidies were used to rescue the peanut trade for the small farmers and for the large Bordeaux commercial houses, albeit with the intermediate small African trader--considered inconvenient and superfluous--finally squeezed out of the trade. The railroads had also been rescued from their financial plight, and then used in turn by the government as instruments in saving the trade.

The net of railroads in Senegal was a legacy of great value. It was a major factor in endowing post-independent Senegal with one of the most dense, well-served, convenient transportation networks of tropical Africa (no mean advantage in the gasoline and water droughts of the 1970's); but a network which even today can effectively serve only a portion of the national territory.<sup>82</sup> In place of a multicentric geographic diversity, which had briefly begun to flourish spontaneously along a widespread grid of roads--promising a wider spatial dispersal of trade and an attendant growth in domestic commerce--Senegalese economic development

was confined by the colonial government's policy within a thin, narrower pattern, whose lifeblood radiated from the long arteries of the railroad. Even the formerly principal rail highway from Thiès to St. Louis was largely bypassed in favor of a seemingly monomaniacal commitment to the port of Dakar and the strategic Dakar-Niger trace.<sup>83</sup> The opening of the Sudan, the economic isolation of the Gambia, and the centralization of administrative and economic activities at the eccentrically-placed port of Dakar--the same objectives which the colonial government and the ministry in Paris had been pursuing in 1880--were still being applied, with a vengeance, in 1933.<sup>84</sup>

It would be easy, from the available evidence, to conclude uncharitably that the colonial government had been acting simply to rescue the narrow material interests of French expatriates in Senegal-- those of the larger commercial firms and the bureaucrats employed in administering a publicly-owned railroad--from the economic crisis. To do so, however, would be to miss an opportunity to expose the nature of the system which the French had succeeded in implanting in Senegal. By acting as it did against the automobile in the 1930's, the government was, after all, also injuring the material interests of



certain French firms, including the powerful Banque de l'Afrique Occidentale to the tune of 3 million francs of investment.<sup>85</sup>

The deepening economic crisis made the colonial government face hard choices of what was to be sustained and what eliminated. Under the existing conditions of competition and without consolidation, it was questionable whether the railroads could bear up without mass infusions of government aid from the metropole. Large scale financial aid from the metropole was unlikely under the circumstances, and stringent cutbacks in rail services or hikes in freight rates were intolerable, since they would only have made commercial recovery difficult, if not impossible, for some areas in the interior (as in the Sudan). The motor vehicle would have been a viable alternative to the railroad in areas near the coast; but it was unclear what geographic pattern would emerge from a reliance on this means of locomotion (aside from a possible collapse of Sudanese commerce).

Since the 1880's the French colonial system had been based increasingly along the railroads. A good deal of commerce also flowed along the rivers and through some of the smaller seaports. But the railroads had come to

stand as one of the major hallmarks of the French presence and, to the official colonial mind, as one of France's proudest contributions to the "opening" of the African interior. It was not likely that top government officials would willingly allow the legacy of over 50 years of effort to go under ignominiously by tolerating an uncertain experiment in highway transportation. It seemed more natural instead to reserve the profitable traffic to "that which fructified, that which acted in the general interest, and to penalize at the same time that which would render sterile the enormous capital invested by the colony to assure transportation."<sup>86</sup>

The automobile was striking not only at the vitals of a railroad in which the colonial government had a large stake invested, but also at an entire interlocking complex of commerce, property, and administration based on the railroad. The auto was a threat to the web of escales nourished by the railroad, since it allowed commercial operations established within them to be bypassed. Moreover, evasion by auto was not just simply a matter of geography, because highway traffic--free as it was from the railroad's need to follow a set route according to the rigid timetables of a central authority--was also

therefore less susceptible to surveillance and control. Government documents of the period manifest indeed an underlying fear of the auto as a sort of harbinger of a more "anarchic" social order, indicating that the issue was not simply a question of commercial and real estate investment.<sup>87</sup> It was also a question of control--centralized control over what French officials had always perceived to be the unrooted African, whose body and mind, like quicksilver, seemed ever to be eluding them. With the elimination of the auto, African producers would be largely obliged once more to come to and deal directly with European dominated institutions and facilities.

Some losses would have to be accepted, as in the decay of some of the older escales of the defunct DSL, in the virtual abandonment of the Louga-Linguère venture, and in the continued, temporary expansion of Kaolack with its share of exports at Dakar's expense. But the focus along which economic recovery would be oriented--the geographic and administrative core which would channel the energies of the region--would be the newly-fused axis of the Dakar-Niger railroad. The steel trace of the railroad had been introduced into West Africa by the French in order to liberate human society in that region from the

physical restraints of an overgenerous space and hard climate. However, the play of economic systems and budgets, as well as the weight of history, converted the rails into a constrictive straitjacket of control, which even as it nourished growth also firmly encased it within certain bounds.

Notes

1. Suret-Canale, L'ère coloniale, p. 251.
2. Despite continued monetary instability into 1926, the French metropolitan economy was becoming prosperous again by 1924--a prosperity lasting as late as 1930. See Martin Wolfe, The French Franc between the Wars, 1919-1939 (New York, 1951), pp. 33ff.
3. See Yves Mersadier, "La crise de l'arachide sénégalaises au début des années trente," Bulletin de l'IFAN, B, 28, 1966, pp. 826-877; X. Guiraud, L'arachide sénégalaise (Paris, 1937), pp. 165ff.
4. The Banque Française de l'Afrique and the Banque Commerciale Africaine. In 1932, the statutes of the Banque de l'Afrique Occidentale were altered to permit it to undertake credit operations. See Mersadier, "La crise," pp. 843-846; Guiraud, L'arachide, pp. 170-172; Suret-Canale, L'ère coloniale, pp. 214-221. See also report of Customs Service -1932, ARS, 2G32-6; Economic report-Senegal-1932, ARS, 2G32-40; Economic report-Senegal-1933, ARS, 2G33-4; Economic report-Senegal-1934, ARS, 2G34-33; Political report-1934, ARS, 2G34-5.
5. For the SIP's in particular, see Guiraud, L'arachide, pp. 133-144; Suret-Canale, L'ère coloniale, pp. 299-310.
6. See above, Chapter IV, p. 242.
7. See Chief of Public Works Service to GS, January 15, 1924, SARS, DCF; President, CC-Dakar to GS, November 27, 1923, Ibid.; Launay note of April 28, 1924, ARS, 6P172-36; Note of Director of Economic Affairs, April 22, 1924, Ibid.; the division of peanut exports can be difficult to discern, because ships calling at Kaolack generally loaded only to 2/3rds capacity to avoid navigation problems on the Saloum river--the rest of the cargo would be taken on at Dakar or Rufisque.

8. Since 1900, the colonies had become directly responsible in principle for covering their budgetary expenses. The DSL, as a colonial enterprise subsidized directly by the state, had therefore become an historical anomaly, as well as a bone of contention between the colonial and metropolitan governments. See above, Chapter IV, p. 222.
9. Launay note, February 15, 1924, ARS, 6P172-36.
10. Setting rates for long-haul traffic and dividing receipts between two lines sharing traffic caused problems for railroads in other lands. See the excellent account by Stephen Salsbury, The State, the Investor and the Railroad (Cambridge, Mass., 1967), pp. 206-222, on the problems of the B & W and Western railroads in Massachusetts.
11. The ratio of real expenses to receipts ("coefficient d'exploitation") generally hovered for the DSL around a comfortable 0.6. The TN generally got by with a ratio of 0.9 to 1.0; and then sometimes only by not counting some governmental subvention funds. For specifics see a minute of December 27, 1919 on the new DSL convention, FOM, TP, which listed annual DSL expenses and receipts from 1910 to 1916 corresponding to ratios of 0.5 to 0.69; P.V., CTPC, November 3, 1925, FOM, TP, shows the ratio back at 0.63 in 1924; the Legregram report of June 24, 1930, FOM, TP, p. 13, shows the ratio hovering between 0.5 to 0.73 from 1925 to 1929.
12. See Legregram report, June 24, 1930 on unification of rates, FOM, TP; Inspector Sol to MC, July 25, 1930, Ibid.; Launay note, April 28, 1924, ARS, 6P 172-36; P.V., Conseil Consultatif du Chemin de Fer du TN, November 30, 1925, Ibid.; Report of Chief Surveillance Engineer, December 31, 1929, FOM, TP; GG to MC, January 25, 1930, Ibid.
13. See DSL to MC, October 4, 1917, FOM, TP; Ormesson to MC, October 10, 1917, Ibid.; DSL to MC, September 10, 1919, Ibid. A letter, DSL to MC, November 10, 1919, FOM, TP, noted that real DSL expenses had increased

from 2,586,000 francs in 1914 and 2,300,00 in 1916, to 4,258,000 francs in 1918, while traffic had languished. See also DSL to MC, December 4, 1919, FOM, TP.

14. The letter, DSL to MC, November 10, 1919, no. 2029 M/7, FOM, TP, estimated that the revaluation of the dollar had cost them 800,000 francs. See also DSL to MC, December 18, 1919, Ibid.
15. Copy MC to DSL, June 21, 1919, FOM, TP; Mouneyres note, November 25, 1919, Ibid. See P.V., DSL Verification Commission, March 23, 1914, FOM, TP, on the legality of the 1900 convention.
16. Audit report on DSL reserve fund, December 26, 1919, FOM, TP.
17. Bouclier report for the Commission de Vérification des Comptes, March 24, 1924, FOM, TP. Much of the increase came from the inflationary increase of peanut prices; but contemporary documents indicate that thieves had also become much bolder and more successful.
18. On the basis of a law of January 7, 1920, authorizing temporary conventions for three colonial railroads (the DSL, an Indochinese railroad, and the Franco-Ethiopian) upon agreement between the Ministers of Finance and Colonies and after a favorable review by the Comite des Travaux Publics des Colonies. This regime was extended by a law of October 17, 1924 until December 31, 1929 and was again extended by a law promulgated on February 17, 1930 for an additional year.
19. The DSL note on law #4371, December 1930, FOM, TP, summarizes these temporary arrangements. Some DSL special rates and accessory charges were allowed to rise on February 1, 1918 (DSL to MC, November 10, 1919, # 782 CM/5, FOM, TP). Broad increases in rates and fares were only allowed, however, on January 1, 1920 (decree of February 22, 1920, copy in FOM, TP), on March 1, 1921 (Boutteville memo, September 17, 1921,

FOM, TP), on November 15, 1926 (DSL to Gubiand, January 21, 1929, FOM, TP), and on April 1, 1930 (Legregram report, June 24, 1930, FOM, TP). As for other financial arrangements, the "temporary" convention promulgated on February 3, 1920 (effective January 1, 1920) was modified by riders attached February 17, 1921, October 15, 1924, and December 17, 1925. Useful documents are the report by de la Serre, January 25, 1920, FOM, TP; Report to the Comite des Travaux Publics des Colonies (henceforth CTPC) by Drogue, February 11, 1921, FOM, TP; Rousseau report to CTPC, October 29, 1925, FOM, TP; note for MC by Gubiand, December 20, 1929, Ibid. In 1920, the state also allowed the DSL to defer payments due to the state (MC to Minister of Finance, December 5, 1919, FOM, TP; draft MC to DSL, December 11, 1919, Ibid.).

20. In letters exchanged between the ministry and the company on June 7 and July 30, 1915. This followed legislative action to ease the strain of the war on metropolitan railroads. For metropolitan conditions, see Kimon Doukas, The French Railroads and the State (New York, 1945), pp. 96-97.
21. DSL to MC, January 3, 1918, FOM, TP; copy MC to DSL administrator, June 21, 1919, Ibid.; two letters DSL to MC, dated November 10, 1919, FOM, TP; Mouneyres note on DSL rates, November 25, 1919, FOM, TP; de la Serre to Boutteville, January 2, 1920, Ibid.; same, January 5, 1920, Ibid.
22. Copy MC to Minister of Finance, January 7, 1921, FOM, TP; Drogue report to CTPC, February 11, 1921, FOM, TP.
23. The argument was first used in 1919. See Mouneyres note on DSL rates, November 25, 1919, FOM, TP. See also Boutteville report to MC, February 22, 1921, Ibid.; Herreman report, October 19, 1926, FOM, TP; GG to MC, June 30, 1928, Ibid.
24. Diagne to MC, January 22, 1921, FOM, TP; President, CC-DAKAR to GG, October 19, 1926, FOM, TP; P.V., CTPC, October 26, 1926, FOM, TP; GG to MC, January 6, 1927, FOM, TP; President, CC-Dakar to GG, May 16, 1928,



Ibid.; P.V., CPTC, May 23, 1929, Ibid.; copy MC TO GG, August 13, 1929, Ibid.; P.V., CPTC, February 20, 1930, Ibid.

25. See DSL to MC, December 13, 1921, FOM, TP, which rejected the ministry's proposal on the grounds that over 2 million francs in receipts would be lost; DSL to MC, April 14, 1922, Ibid. claimed that the lost receipts would make little difference in the price of peanuts; acting MC to President of CPTC, February 14, 1922, Ibid.; Constantin report for CPTC, July 18, 1922, Ibid.; Boutteville report to MC, October 16, 1922, Ibid.
26. See Lacheze to Administrators of DSL, September 11, 1923, FOM, TP; Ballabey report, May 1924, ARS, 6P172-36. After a strong attack on the DSL's rate policy in the note by the Director of Economic Affairs, April 22, 1924, Ibid., Launay felt obliged to alter his views on the use of Kaolack from his previously favorable note of February 15, 1924, Ibid., to a more rigid stance in a new note of April 28, 1924, Ibid. See also the report of Director TKN, September 24, 1924, SARS, DCF, and the Rousseau report to CTPC, October 29, 1925, FOM, TP.
27. A copy of the bill for the modification of the legal and financial regime of the DSL (# 4371, December 1930) in FOM, TP, noted that some 51 million francs had been repaid by the company by December 31, 1930 out of 52 million in advances for guarantees of operating expenses and dividends plus interest on these advances. This did not include, however, another 34 million advanced to the DSL in addition for equipping the line with more materiel. The same figures are given in the Pruvost report, June 1, 1935, FOM, TP. Note the overriding interest of the ministry in the profitability of the DSL, as in the report to MC by Gubiand and Henry, January 16, 1926, FOM, TP.
28. The report by Gubiand and Henry to MC, January 16, 1926, FOM, TP, was mainly concerned with any possible risk run by the French treasury due to the DSL's involvement in the Louga-Linguere rather than any

risks that the colony of Senegal might run.

29. A convention of December 30, 1930 passed by the National Assembly in January 1931. See Roland-Gosselin to Gubiand, March 28, 1930, DSL(Paris). Note for MC, March 16, 1931, FOM, TP; Rousseau report to CTPC, July 1930, FOM, TP; P.V., CPTC, July 3, 1930, Ibid.; Minister of Finance to MC, November 24, 1930, Ibid.
30. See Pruvost report, June 1, 1935, FOM, TP; copy of Rolland-Gosselin to MC, March 10, 1932, DSL(Paris). The volume in TN slow freight fell from 267,691 tons in 1930 down to 135,937 in 1932. The number of passengers on the TN and the intensity of passenger traffic also fell, but not as much (from 591,073 passengers in 1929 down to a low of 346,629 in 1931). See the Pruvost report, June 25, 1935, FOM, TP, pp. 67ff; Legregram report, June 16, 1930, FOM, TP.
31. DSL to MC, April 13, 1931, FOM, TP; copy of DSL to MC, June 25, 1931, FOM, TP.
32. DSL to MC, April 13, 1931, FOM, TP; copy of DSL to MC, June 25, 1931, FOM, TP. Even by the end of 1930, the DSL was in financial difficulty. See DSL to Bréart de Boisanger, December 23, 1930, FOM, TP.
33. The bonus was part of a more general formula, which unfortunately was postulated on expectations of a much larger volume of traffic. On Louga-Linguère profitability see Pruvost report, June 1, 1935, FOM, TP; Launay notes of June 18 and 25, 1935, Ibid.; Note by Minot, June 26, 1935, Ibid.
34. Analysis of DSL accounts for 1932 by Saily, FOM, AP546. Bagot report on DSL retrocession, September 27, 1935, FOM, TP.
35. See Doukas, pp. 55-64. The government also shrank in the 1930's, however, from purchasing any metropolitan lines. Nationalization had to await the Popular Front government. See Ibid., pp. 234ff.

36. GG to MC, September 8, 1932, FOM, TP, reviews the history of the purchase decision. The colonial government was asked to study the matter in a ministerial dispatch of October 10, 1931. Purchase of the DSL was considered immediately after the war, but rejected because of legal uncertainties (Boutteville memo on DSL, September 17, 1921, FOM, TP). In 1929 the ministry considered that government purchase of the DSL had no chance of occurring because of the successful operation of the line (draft of MC to GG, February 27, 1929, FOM, TP).
37. Copy of GG TO GS, May 19, 1930, FOM, TP; report by Sol to MC, July 25, 1930, FOM, TP; Minot to Director DSL, August 8, 1930, FOM, TP; DSL to MC, September 26, 1930, Ibid.; copy of DSL to MC, January 9, 1931, SARS, DCF; draft MC to Minister of Finance, February 5, 1932, Ibid.; GG to MC, March 17, 1932, Ibid.; copy MC to GG, May 5, 1932, Ibid.; GG to MC, May 21, 1932, Ibid.; GG to MC, May 21, 1932, Ibid.; copy MC to GG, August 4, 1932, Ibid.; copy GG to GS, September 27, 1932, SARS, DCF.
38. See GG circular to Presidents of Chambers of Commerce in Senegal, July 25, 1932, SARS, DCF; also printed in Bull. Mensuel de Dakar, July-August, 1932, pp. 279-280. GG to MC, December 27, 1933, FOM, AP546; Note by Gaston Joseph, January 29, 1934, Ibid.; Note by Maître Devallon, February 6, 1934, Ibid.; proposed convention with consortium, n.d. (1932), Ibid.
39. Local merchants were calling for this action; e.g., P.V., CC-Dakar, February 9, 1932, DSL(Paris). The Government General and the DSL concluded a convention of retrocession on September 8, 1932; but there were delays in getting the DSL's stockholders to ratify the convention, which was finally approved by decree only on March 31, 1933. See GG to MC, September 8, 1932, FOM, TP; acting GG to MC, April 21, 1933, Ibid.; MC to Minister of the Budget, May 10, 1933, Ibid.; Dugas report for CTPC, June 20, 1933, Ibid.
40. The DSL had asked for an annuity of 2 million francs for the 51 years remaining in the convention grant.

The final agreement pared this down to 1,550,000 francs for the first 10 years, 1,375,000 for the next 14 years, 1,165,000 for the next 26 years, and 873,750 for the last year (1983). See DSL to GG, June 23, 1932, DSL(Paris); Pruvost report, June 1, 1935, FOM, TP.

41. See GG to MC, September 30, 1932, FOM, TP; the principal objective was to funnel Sudanese products to Kaolack, Rufisque, and Dakar and to reduce the price to Kaolack of products shipped from the Thiès-Koussanar portion of the line. See the December 1932-September 1933 rate schedules on fast and slow freight, ARS, 6P 36-36.
42. The reader may find useful the Brookings Institute study: George W. Wilson, et al., The Impact of Highway Investment on Development (Washington, 1966), especially pp. 1-16, 174-218.
43. Interview with General Berdoulat, document #41, ARS, 0244, and document #78, -ARS, Q49.
44. GG to IGTP, April 16, 1914, ARS, 0244; President, CC-St. Louis to GS, July 4, 1914, SARS, DCF.
45. For the Cotiari-Ambidedi automobile service see folder 9, ARS, 2G16-4; political report, 4th trimester 1916, 2G16-5. Studies of Ford autos for this purpose are in the dossier: ARS, 046. Transsaharan auto crossings were discussed in Governor General of Algeria to GG, April 10, 1916, ARS, 0244, and GG to IGTP, May 22, 1916, Ibid. Although a crossing of 5 Citroen cars was made from Tuggurt only in 1923.
46. Economic report, February 1921, ARS, 20G21-1.
47. The construction of roads was pushed strongly in the colony of Senegal's "Notice succincte sur le programme des grands travaux au Sénégal, 1926-1927-1928," October 9, 1925, SARS, DCF. The interest of the colonial administration in development of a wide network of good roads for use by automobiles is evident in a telegram: GS to GG, June 6, 1912, ARS,

- 0244; Political report, 4th trimester 1916, ARS, 2G16-5; report on Diourbel, third trimester 1920, ARS, 2G20-28; report on Louga, fourth trimester 1920, ARS, 2G20-30; Political report, 4th trimester 1920, ARS, 2G20-5; Political report, 1923, ARS, 2G23-11; Political report, 1924, ARS, 2G24-14; Economic report, January 1926, ARS, 2G26-3; Administrator Thiès to GS, December 23, 1926, StL; GS to President, CC-Rufisque, February 10, 1928, StL.
48. The estimate was given in the report for 1927, ARS, 2G27-18(2); a report that shows the variability of reporting on local roads is that of 1926, in ARS, 2G26-10; the Verdun report on roads in French West Africa, August 15, 1933, FOM, TP, is a useful technically-oriented exposition; the "Rapport complémentaire--circulation sur la route au Sénégal," /1931/, FOM, AP545(5) is also useful, as is Suret-Canale, L'ère coloniale, pp. 265-266.
49. Estimates for 1925 to 1927 imports are in "Lettre ouverte au Ministre des Colonies," L'Ouest Africain Française, June 1, 1929, p. 2; the number of vehicles imported in 1927 and 1928 were mentioned in GG to MC, September 14, 1929, FOM, AP545(5). The estimated imports for 1929-1932, yielding a total of over 12 million francs raised in customs receipts, were given in P.V., CC-Dakar, August 19, 1933, copy in FOM, AP545(5). According to the Customs Service report of 1931, ARS, 2G31-3, 1,258 vehicles had been imported in 1930, but only 211 for 1931. Conseil Colonial, Le Sénégal en 1925 (Paris, 1925), p. 34, lists a total of 1,253 autos, mostly American; imported from 1919 through 1924. The low figure of 324 autos for 1925 (though probably incomplete) indicates that only autos were tabulated, and not trucks.
50. P.V., CC-Rufisque, December 1, 1928, SARS, DCF; anonymous, "La Limitation des points de vérification," L'Ouest Africain Française, April 13, 1929. This was a turnabout for French merchants, who previously had called for better roads, as in P.V., CC-Rufisque, April 21, 1927, SARS, DCF, and President, CC-Rufisque

to GG, January 13, 1928, StL.

51. Gubiand commented in a meeting of the CPTC (P.V., CPTC, May 23, 1929, FOM, TP, that auto transport for passengers was largely in the hands of "entreprises indigènes." The auto dealer Potton noted in a letter to the Director General of the Banque de l'Afrique Occidentale (BAO), December 12, 1931, FOM, AP545(5), that many of the purchasers of trucks were Africans or Lebanese, who had begun transportation enterprises. See also Guiraud, L'arachide, pp. 118-121.
52. GG to MC, January 25, 1930, FOM, TP.
53. The P.V., CC-Rufisque, December 1, 1928, mentioned that the Syndicat de Défense des Intérêts Sénégalaises had called in September for a limitation of trade points to the escales located on railroads and waterways only. See also P.V., Syndicat de Défense des Intérêts Sénégalaises January 18, 1929, SARS, DCF.
54. d'Oxoby, "Lettre ouverts au Ministre des Colonies," L'Ouest Africain Française, June 1, 1929, p. 2; Georges Barthelemy, "Les coloniaux de Bordeaux contre l'automobile," Gazette Coloniale, June 6, 1929; copy of Fédération Nationale de l'Automobile ... to MC, June 7, 1929, FOM, AP545(5); copy MC to GG, May 2, 1929, Ibid.; GG to MC, September 14, 1929, Ibid.
55. A note predicting the traffic for the Louga-Linguère railroad, dated October 29, 1925, FOM, TP, noted the existence already of a heavy truck traffic from Djolof to Louga. The growth of M'Backé as a center of auto traffic, especially for the Sagata-M'Backé run, was noted in Administrator Baol to GS, April 16, 1928, SARS, DCF. The project for the Sine railroad by Surleau, June 28, 1930, FOM, TP, noted that trucks hauled 10,000 tons of peanuts from M'Backé to Diourbel at 150 francs per ton.
56. Pruvost report, June 1, 1935, FOM, TP, p. 5; Legregram report, June 16, 1930, FOM, TP, p. 36; table of peanut exports in Guiraud, L'arachide, p. 37.

57. Pruvost report, June 1, 1935, FOM, TP, p. 5; Pruvost report, June 25, 1935, Ibid., p. 6; Legregram report, June 16, 1930, FOM, TP, p. 33.
58. Report of DSL Surveillance Engineer, August 20, 1930, FOM, TP. The auto may, however, have generated some of this new traffic as well (see Wilson et al., Highway Investment, pp. 177-179).
59. The Pruvost report, June 25, 1935, FOM, TP, p. 70, calculated the profitability of various classes of passengers on the TN for the period 1930 to 1933 and for the DN in 1934. During this depressed period, only fourth class passenger service remained profitable. First and second class service were, as always, highly unprofitable during this period.
60. DSL to MC, October 25, 1928, FOM, TP; MC to GG, November 30, 1928, Ibid.; P.V., CPTC, May 23, 1929, FOM, TP; DSL to MC, February 14, 1930, FOM, TP, gave a report on the small number of passengers taking the special trains; GG to MC, February 25, 1930, Ibid.; GG to MC, September 11, 1930, Ibid.; draft MC to GG, October 17, 1930, Ibid.; draft MC to DSL, February 11, 1931, FOM, TP; DSL to MC, February 17, 1931, Ibid.
61. Railroads in Senegal faced the same automobile competition for passenger traffic in the 1960's and 1970's. The best description of this traffic in the 1920's is in the detailed report of the Chief Surveillance Engineer, August 20, 1930, FOM, TP. The TN did try to change its timetable to carry more of the Dakar-Kaolack traffic (GS to Director TN, October 30, 1930, SARS, DCF); but autos continued to dominate this run (acting Director TN, September 26, 1931, Ibid.) Most documents on this question simply attribute the shift to an "infatuation" (engouement) of the African for the automobile. (See Surveillance Engineer report, December 28, 1928, FOM, TP). The colonial administration was upset that proposed increases in DSL fares would only make auto competition worse (Surveillance Engineer report, December 31, 1929, FOM, TP; GG to MC, January 25, 1930, Ibid.)

62. Surveillance Engineer report, August 20, 1930, FOM, TP.
63. Ibid.
64. Surveillance Engineer report, December 31, 1929, FOM, TP; GS to Director TN, March 4, 1931, SARS, DCF, considered a reduction in the TN's special rate for peanuts on the Guinguineo-Kaolack run in order to compete with autos; despite high truck rates and the competition of the new Louga-Linguère railroad, trucks were still preferred for freight hauling from Djolof, according to Administrator Djolof to GS, November 12, 1931, SARS, DCF. Despite discriminatory administration measures, automobile freight haulers were still competitive up to 1933 (acting GG to MC, October 27, 1933, FOM, TP).
65. See the GG's recommendation on deliberately neglecting the maintenance of roads running parallel to a proposed narrow-gauge rail line into Baol, in GG to GS, January 21, 1928, ARS, 6P46-36. See also Geoffrey Gorer, Africa Dances (New York, 1962), p. 69.
66. Political report, 1928, ARS, 2G28-8; note for IGTP, May 31, 1933, ARS, K143-46.
67. For instance, Fatick, a major center, was connected by roads to both Thiès and Kaolack. Plainly Thiès-Kaolack traffic could run along these roads. At a later era, the printed report by the Régie des Chemins de Fer du Sénégal, Conséquences de la rupture de la Fédération du Mali sur l'exploitation du chemin de fer, October 19, 1960, copy in RA, still recommended the restriction of auto traffic along roads paralleling the railroad. The contrary view was expressed clearly in the Pruvost report, June 25, 1935, FOM, TP, pp. 90-94. See also P.V., CC-Dakar, August 9, 1933.
68. Doukas, French railroads, pp. 214-219, 223-229.
69. The arrêté of January 12, 1931 can be found in JOS, April 8, 1931, pp. 248-249. See also Georges Barthelemy, "La circulation des camions au Sénégal," Gazette Coloniale, March 17, 1932.



70. GS to GG, December 5, 1931, FOM, AP545(5); acting president of CC-Dakar to Administrator Dakar, January 5, 1932, Ibid.; Gaston Joseph to President of Fédération Nationale de l'Auto ..., July 13, 1932, Ibid.
71. GG to MC, April 28, 1932, FOM, AP545(5).
72. GG to MC, February 24, 1933, FOM, AP545(5); MC to Union des Véhicules Industriels, March 30, 1933, Ibid.
73. Copy of Potton to Director General of the Banque d'Afrique Occidentale (Henceforth BAO), December 12, 1931, FOM, AP545(5); copy of BAO (Dakar) to BAO(Paris), December 17, 1931, Ibid.; GS to Director BAO(Dakar), February 26, 1932, Ibid.
74. Guiraud, L'arachide, pp. 121-133. In contrast, the writer of the December 1917 report for Tivaouane, ARS, 2G17-33 clearly saw that the limitation of trade points only worked against the interests of the cultivators by increasing his expenses. Some Lebanese competition was also undermined deliberately by the elimination of some formerly busy trade centers, such as that at Gaoune, within a concession held by Cheik Anta M'Backé (Telegram of Administrator Baol to GS, October 29, 1932, SARS, DCF).
75. Economic report, 1934, ARS, 2G34-33 (the SIP's were allowed to use trucks, however, for seed transportation); the LIGUS mission, Rapport de l'étude sur la coordination des transports du Sénégal(1954), ARS-L, pp. 36-37, noted sadly that growers were still forced to depend on costly, slow pack animal transport because of the policy of excluding trucks from trade in the interior. See also J. Fouquet, La traite des arachides dans le pays de Kaolack, et ses conséquences ... (St.Louis, Senegal, 1958), pp. 91-100.
76. Guiraud, L'arachide, p. 120, complains of the resulting rapidity of a season's transactions. Admittedly this rapidity did eliminate the traditional social event involved in the seasonal, prolonged dickering between buyer and seller over the price of peanuts

in the escale. But Guiraud was obviously more worried about the threat of competition to fixed French interests. An economic report of 1933, ARS, 2G33-4, suggested, on the contrary, that competition from Nigeria and Gambia could best be met with rapid purchases of available peanuts in Senegal.

77. Guiraud, L'arachide, pp. 119-120; economic report, 1934, ARS, 2G34-33.
78. P.V., CC-Dakar, August 9, 1933, copy in FOM, AP545(5).
79. Note by Maître Devallon for the Direction of Political Affairs, December 13, 1933, FOM, AP545(5), in answer to a note by Gaston Joseph of November 30, 1933, Ibid.; see also the note by Gaston Joseph, December 26, 1933, Ibid.
80. Customs Service report, 1931, ARS, 2G31-3. By this time, the onset of the depression was taking its toll as well.
81. The alternative was for the government to subsidize the railroad. See the thorough analysis of modern road-rail competition and coordination in Arthur Hazlewood, Rail and Road in East Africa (Oxford, 1964), especially pp. 43-81.
82. The published report by the Direction des Transports du Ministère des Travaux Publics de la République du Sénégal, Les transports terrestres au Sénégal (Thies, 1964), pp. 2-4, termed the consequences of this division of the country "tragic." See also Corinne Beneviste, Les relations Dakar-St.Louis. Le rail et la route, DES (Dakar, 1967), ARS-L.
83. The administration chose the headquarters for the new DN at Thies, already the headquarters of the TN, largely because of the difficulty of finding new lodging at Dakar for railroad personnel (GG to MC, September 8, 1932, FOM, TP).
84. Suret-Canale ( in L'ère coloniale, p. 254) selected 1936 as the year in which Dakar's supremacy was

finally assured. The annual political report for Senegal, 1936, ARS, 2G36-5, noted a strong seasonal migration from the Senegal river basin, Djolof, and Louga toward the southern lands, which were richer, better-watered, and "où les frais de transport sont moindres pour l'évacuation des produits vers les centres d'achat." For general remarks on rate and fare structures on the DN and on other railroads of French West Africa, see the Coste report, March 10, 1938, FOM, TP. The growth of a transportation network based on roads would also have channeled more trade into the Gambia, which the railroad had deliberately bypassed (see Administrator Sine-Saloum to GS, January 21, 1924, SARS, DCF, in which this official strongly advised against such a development).

85. Involving 172 unsold vehicles as well as auto replacement parts in one enterprise alone. See copy BAO (Dakar) to BAO(Paris), December 17, 1931, FOM, AP545(5); BAO(Paris) to MC, February 23, 1932, Ibid.
86. Note by Maître Devallon for the Direction of Political Affairs, December 13, 1933, FOM, AP545(5).
87. Guiraud, L'arachide, p. 120, for one, flatly described the situation brought on by the auto in Senegal, before discriminatory restrictions were imposed, as a state of "virtual anarchy." Maître Devallon referred to it as a "state of indiscipline" (note for Direction of Political Affairs, December 13, 1933, FOM, AP545(5)).

TABLE 1

DSL RAILROAD IN THE PEANUT TRADE

YEAR	PEANUTS <sup>1</sup> EXPORTED FROM SENEGAL (METRIC TONS)	PEANUTS <sup>2</sup> CARRIED BY DSL (METRIC TONS)	% OF TOTAL PEANUTS CARRIED BY DSL	PEANUTS <sup>2</sup> SENT FROM THIES & TIVAOUANE (METRIC TONS)	%DSL PEANUT FREIGHT FROM THIES & TIVAOUANE (PERCENTAGE)	TOTAL <sup>2</sup> FREIGHT, OTHER THAN PEANUTS ON DSL (METRIC TONS)
1878	34,524					
1879	34,529					
1880	52,134					
1882	48,015					
1883	42,858					
1884	38,250	-				
1885	41,248	-				
1886	22,565	10,002	44.3			
1887	19,714	10,714	54.4			
1888	40,342 <sup>3</sup>	28,867	71.6			
1889	32,080	22,818	71.5			
1890	27,386	18,892	69.0			
1891	26,394	22,818	86.6			
1892	46,790	37,305	79.7	19,830	53.2	
1893	59,302	43,729	73.7	24,001	54.9	14,637

TABLE 1--CONTINUED

YEAR	PEANUTS <sup>1</sup> EXPORTED FROM SENEGAL (METRIC TONS)	PEANUTS <sup>2</sup> CARRIED BY DSL (METRIC TONS)	% OF TOTAL PEANUTS CARRIED BY DSL	PEANUTS <sup>2</sup> SENT FROM THIES & TIVAOUANE (METRIC TONS)	%DSL PEANUT FREIGHT FROM THIES & TIVAOUANE (PERCENTAGE)	TOTAL <sup>2</sup> FREIGHT, OTHER THAN PEA- NUTS ON DSL (MET- RIC TONS)
1894	65,289	46,718	71.6	22,723	48.6	19,919
1895	51,537	34,837	67.6	18,195	52.2	11,954
1896	63,556	42,863	67.4	25,095	58.5	
1897	48,123 <sup>3</sup>	38,474	80.0	20,330	52.8	21,505
1898	95,987	53,089	55.3	27,216	51.3	27,098
1899	85,547	57,642	67.4	27,414	47.6	35,311
1900	140,921	90,386	64.1	41,667	46.1	21,899
1901	123,482	97,660	78.9	45,992	47.2	57,354
1902	110,225	51,318	46.6	24,921	48.6	51,657
1903	148,843	78,296	52.6	41,558	53.1	40,882
1904	137,784	66,209	48.1	32,309	48.8	34,512
1905	96,175	53,817	56.0	27,201	50.5	
1906	100,476	51,741	51.5	25,032	48.4	26,419
1907	154,447	101,833	65.9	40,049	39.3	44,982
1908	144,140	76,969	53.1	30,225	39.3	90,927
1909	224,326	146,130	65.1	83,475	57.1	103,343
1910	227,299	160,170	70.4	84,162	52.5	

TABLE 1--CONTINUED

Several sources:

1 Figures for 1878-80 from Ministry Marine, Tableaux de Population, de culture et de commerce des colonies. Figures for 1882-87 from Ministry Marine, Statistiques Coloniales. For 1892-1910 from S/SEC Colonies Statistiques coloniales; Petyt Report--receipts DSL-1890, FOM, Senegal X11,69;

2 Figures 1886 to 1891, in Fontaneilles Report, July 17, 1898, FOM, TP; Figures 1892-1910 in annual reports of DSL board of directors to stockholders (1896 missing) same as figures 1892-1905 in Government General. Les Chemins de fer en AOF, I, 1906.

3. X. Guiraud, L'arachide sénégalaise. (Paris, 1937), p. 37.

a A % calculation on the basis of the trade season, or from November through the following October, would be much more meaningful, but figures for total exports from Senegal on this basis are not available--Presumably shipments of peanuts within the country, as seed for example, would be negligible, this is confirmed by a glance at Table V.

b Includes freight shipped in from TK railroad.

TABLE 2

PEANUTS ARRIVING BY RAIL AT PORTS<sup>a</sup>

(Freight Volume in Metric Tons--  
Percentage of the Total Peanut  
Rail Freight is in Parentheses)

TRADE SEASON	AT RUFISQUE	AT ST. LOUIS	AT ALL OTHER RAIL STATIONS	TOTAL
1884-85	7,321 (60.8%)	4,475 (37.2%)	238	12,034
1885-86	6,761 (72.5 )	1,955 (21.0 )	610	9,326
1886-87	6,512 (68.2 )	2,984 (31.3 )	47	9,543
1887-88	17,604 (66.7 )	8,496 (32.2 )	290	26,390
1888-89	17,745 (80.8 )	4,007 (18.2 )	216	21,968
1889-90	15,782 (83.1 )	2,922 (15.4 )	279	18,983
1890-91	16,595 (90.5 )	1,479 ( 8.1 )	263	18,377
1891-92	36,334 (88.2 )	4,347 (10.6 )	505	41,186
1892-93	41,661 (89.3 )	4,820 (10.3 )	156	46,637
1893-94	38,792 (85.9 )	6,106 (13.5 )	279	45,177
1894-95	31,917 (92.7 )	2,467 ( 7.2 )	63	34,447
1895-96	38,320 (92.8 )	2,885 ( 7.0 )	67	41,272
1896-97	33,996 (89.6 )	3,908 (10.3 )	33	37,937
1897-98	44,642 (86.8 )	6,379 (12.4 )	401	51,422
1898-99	43,667 (85.6 )	7,239 (14.2 )	118	51,024

TABLE 2--Continued

TRADE SEASON	AT RUFISQUE	AT ST. LOUIS	AT ALL OTHER RAIL STATIONS	TOTAL
1899-1900	84,854 (86.2 )	13,309 (13.5 )	257	98,420
1900-1901	69,066 (87.6 )	9,256 (11.7 )	515	78,837

<sup>a</sup>Source: Chief of DSL operations to GG, May 27, 1901, SARS, DCF.



-494-  
TABLE 3

ANNUAL PEANUT FREIGHT PER STATION ON DSL<sup>a</sup>-(METRIC TONS)

YEAR	<u>INCOMING</u>			<u>OUTGOING</u>		
	DAKAR	RUFISQUE	ST. LOUIS	SEBIKOTANE	POUT	THIES
1892	578	32,163	4,484	150	727	6,393 ...
1893	566	38,748	4,369	130	640	7,926
1894	185	40,051	6,393	155	920	9,534
1895	30	32,047	2,691	111	466	8,111
1896	58	39,618	3,133	163	628	11,675
1897	48	34,554	3,819	144	485	10,019
1898	476	45,556	7,007	229	649	13,273
1899	68	49,004	8,504	209	1,201	11,360
1900	245	77,823	12,261	511	865	20,238
1901	294	85,968	10,987	993	1,498	21,496
1902	70	45,343	5,762	836	1,071	12,459
1903	205	72,037	5,948	1,214	1,604	23,119
1904	201	58,994	6,928	440	663	15,031
1905	128	48,937	4,139	357	507	13,015
1906	4,971	43,882	5,852	333	671	9,691
1907	2,317	81,732	17,726	712	1,886	18,244
1908	5,351	64,312	6,564	421	1,649	14,270
1909	1,970	131,212	12,688	696	1,616	71,139
1910	3,910	135,902	19,876	838	1,960	73,585
1911	2,874	76,529	7,339	332	1,178	46,760 ...

TABLE 3--CONTINUED

OUTGOING

YEAR	TIVAOUANE	PIRE GOUREYE	N'GAYE MEKHE	KELLE	N'DANDE	KEBEMER
1892	13,437	2,919	5,398	3,215	1,209	728 ...
1893	16,075	3,660	5,563	3,589	1,683	980
1894	13,189	2,703	6,145	4,252	1,967	1,075
1895	10,084	2,962	5,116	2,822	1,666	524
1896	13,420	3,101	6,109	2,013	2,009	608
1897	10,311	2,254	6,063	1,926	2,515	828
1898	13,943	3,046	7,767	1,802	2,605	1,725
1899	16,054	3,199	6,977	1,674	3,204	1,928
1900	21,429	6,009	15,493	2,916	3,417	3,610
1901	24,371	8,556	13,935	3,774	3,905	3,608
1902	12,462	4,083	7,364	1,664	1,500	2,261
1903	18,439	6,373	13,193	2,312	2,393	2,816
1904	17,278	5,159	11,210	1,835	3,211	3,412
1905	14,186	2,815	7,180	1,697	2,803	3,204
1906	15,341	2,781	5,344	4,510	2,683	2,711
1907	21,805	7,459	15,634	2,946	6,177	5,999
1908	15,965	6,461	14,187	3,251	4,832	5,020
1909	12,336	7,104	16,816	4,957	8,000	7,547
1910	10,577	9,132	16,075	5,353	7,345	10,153
1911	5,940	4,302	8,123	2,482	3,624	4,012 ...

TABLE 3---CONTINUED

OUTGOING

YEAR	GOUMBO GUEOUL	LOUGA	SAKAL	M'PAL	BAO	TOTALS
1892	872	1,376	145	573	62	37,305
1893	1,352	1,536	51	101	22	43,729
1894	1,426	3,669	511	354	212	46,718
1895	757	1,774	147	204	62	34,837
1896	753	1,673	239	267	141	42,863
1897	943	1,771	228	505	427	38,474
1898	2,130	4,249	564	713	361	53,089
1899	2,710	6,946	913	840	232	57,642
1900	5,145	7,303	1,735	1,449	686	90,386
1901	4,584	7,505	1,662	941	509	97,660
1902	1,874	3,299	1,020	370	894	51,318
1903	2,006	2,800	829	264	674	78,296
1904	3,350	2,757	952	325	530	66,209
1905	2,818	2,890	937	304	351	53,817
1906	2,657	3,372	1,278	588	76	51,741
1907	5,940	8,159	2,141	1,697	1,465	101,833
1908	3,444	3,224	461	313	455	76,969
1909	5,363	7,795	969	224	785	146,130
1910	7,621	12,525	1,720	907	1,191	160,170
1911	2,408	5,644	1,009	579	631	87,363

a Source: Figures from annual reports of DSL Board of Directors to stockholders (1896 missing); same as figures 1892-1905 with very slight differences in Government General, AOF, Les chemins de fer en AOF, I; Le Sénégal (Paris 1906. Figures showing tonnages per trading season (November to May) would be preferable, but only scattered figures are available for some stations.

TABLE 4

POPULATION STATISTICS  
-COMMUNES

YEAR	ST. LOUIS	GOREE	RUFISQUE	DAKAR
1835	11,636 <sup>1</sup>	-	-	-
1876	15,980 <sup>2a</sup>	3,243 <sup>2b</sup>	1,293 <sup>2c</sup>	1,556 <sup>2d</sup>
1884	18,924 <sup>1</sup>	-	-	-
1885	16,682 <sup>3</sup>	1,928 <sup>3</sup>	6,783 <sup>3</sup>	1,946 <sup>3</sup>
1888	18,620 <sup>4</sup>	1,744 <sup>4</sup>	5,127 <sup>4</sup>	4,829 <sup>4</sup>
1890	25,000 <sup>5</sup>	1,700 <sup>5</sup>	5,000 <sup>5</sup>	6,300 <sup>5</sup>
1891 (June)	16,119 <sup>6</sup>	2,068 <sup>6</sup>	8,091 <sup>6</sup>	8,737 <sup>6</sup>
1891	20,173 <sup>1</sup>	-	-	-
1904	24,070 <sup>7</sup>	1,560 <sup>7</sup>	12,446 <sup>7</sup>	18,447 <sup>7</sup>
1908	24,679 <sup>1</sup>	-	12,469	24,910
1909	22,219 <sup>8</sup>	-	-	-
1910	22,093 <sup>a</sup>	-	12,457 <sup>9</sup>	24,914 <sup>9</sup>
1913	23,326 <sup>10</sup>	1,195 <sup>8</sup>	11,112 <sup>8</sup>	24,609 <sup>10</sup>
1914	23,481 <sup>11</sup>	923 <sup>11</sup>	12,908 <sup>11</sup>	21,624 <sup>11</sup>
1916	22,169 <sup>8</sup>	759 <sup>8</sup>	11,658 <sup>8</sup>	24,577 <sup>8</sup>

1 Rousseau's notes on St. Louis, ARS, 3G<sup>3</sup>/1

2 SARS, 22G40

3 SARS, 22G39

4 Annuaire du Sénégal, 1888

5 SARS, 22G41

6 SARS, 22G42

7 Government General, AOF, Recensement de la population du Sénégal en 1904 (St. Louis, Senegal, 1904), pp. 6-7.

8 SARS, DCF

9 Government General, AOF, L'AOF, 1911

10 ARS, H57

11 SARS, 22G51

a Includes 1182 of floating population

b Includes 276 of floating population

c Includes 113 of floating population; the rural suburbs held 6,601 people also

d Includes 360 of floating population

e Includes 2,500 of floating population

TABLE 5  
POPULATION STATISTICS-  
ESCALES

YEAR	THIES	TIVAOUANE	PIRE GOUREYE	N'GAYE MEKHE	KELLE	N'DANDE	LOUGA	M'PAL
1876								1,159 <sup>1</sup>
1878 <sup>2</sup>	260	650	2,000	250	600	400	1,000	2,500
1885 <sup>3</sup>	1,003	1,178	-	-	-	-	-	-
1888	2,094 <sup>4</sup>	-	-	-	-	-	-	-
1891	-	-	-	-	-	-	901 <sup>5</sup>	-
1894	443	384	-	143	200	-	-	-
1895	-	301	167	-	191	-	-	-
1897	657 <sup>6</sup>	-	-	-	-	-	1,199 <sup>6</sup>	-
1898	-	3,135 <sup>8</sup>	1,137	814	395	661	1,353	232
1904 <sup>7</sup>	2,784	4,318	1,503	1,460	516	736	1,395 <sup>8</sup>	130
1905	2,707 <sup>8</sup>	4,252 <sup>8</sup>	-	-	-	-	-	-
1907 <sup>9</sup>	1,750	-	-	-	-	-	1,726	-
1908 <sup>9</sup>	2,404	3,403 <sup>10</sup>	-	-	-	-	-	-
1912	-	1,848 <sup>10</sup>	-	-	-	-	-	-
1914 <sup>10</sup>	3,044	2,110	1,172	379	758	353	1,478	-
1916 <sup>9</sup>	2,969	1,978	-	-	-	-	1,433	-

1 SARS, 22G40

2 Walter map, November 14, 1978

3 SARS, 22G39

TABLE 5--CONTINUED

- 4 Annuaire du Sénégal, 1888
- 5 SARS, 22G45
- 6 SARS, 22G49
- 7 Government General, AOF, Recensement de la population, pp. 6-7.
- 8 Report of GS to GG; in JOS, January 1905, p.1
- 9 SARS, DCF
- 10 SARS, 22G51
- a The perimeter of Tivaouane was expanded from 4 to 16 square kilometers in 1897.

TABLE 6

ANNUAL MILLET FREIGHT PER STATION ON DSL<sup>a</sup>

(METRIC TONS)

INCOMING

YEAR	DAKAR	RUFISQUE	THIES	TIVAOUANE	ST. LOUIS	TOTAL
1892	294	419	65	92	851	1,793
1893	153	169	7	28	349	1,465
1894	69	50	6	35	194	855
1895	282	126	12	4	999	1,646
1896	218	127	4	49	256	1,035
1897	199	82	34	73	1,327	1,818
1898	123	64	50	143	422	1,115
1899	256	141	9	29	516	1,182
1900	73	12	19	66	147	449
1901	138	65	2	18	353	786
1902	318	155	10	31	669	1,744
1903	444	108	6	42	2,939	4,131
1904	686	277	33	67	1,899	3,355
1905	403	373	109	180	162	2,112
1906	579	477	133	82	268	1,954
1907	326	413	460	822	185	4,143
1908	562	224	170	73	1,562	2,920
1909	719	322	1,040	277	614	3,574
1910	527	377	1,182	232	95	4,186
1911	554	355	265	166	727	2,564

a Sources: Figures from annual reports of DSL board of Director to stockholders (1896 missing); 1896 figures in table in Government General, AOF, Les chemins de fer en AOF. I. Le Sénégal (Paris, 1906), p. 35. That table is virtually the same as the above for 1892-1905.

TABLE 6--CONTINUED

YEAR	OUTGOING							TOTAL
	THIES	TIVAOUANE MEKHE	N'GAYE GUEOUL	GUMBO	LOUGA	ST. LOUIS		
1892	198	405	110	106	610	13	1,793	
1893	249	349	77	74	214	145	1,465	
1894	58	52	27	10	173	348	855	
1895	153	213	61	123	898	20	1,646	
1896	216	108	45	21	244	271	1,035	
1897	112	65	25	153	1,148	3	1,818	
1898	73	64	24	49	551	49	1,115	
1899	225	84	18	88	479	4	1,182	
1900	39	30	17	13	92	15	449	
1901	211	79	43	27	262	27	786	
1902	440	191	98	45	507	138	1,744	
1903	574	294	490	505	1,749	42	4,131	
1904	493	263	175	181	1,459	5	3,355	
1905	318	235	69	106	667	369	2,112	
1906	366	204	386	78	325	128	1,954	
1907	145	140	95	87	1,117	1,933	4,143	
1908	331	198	58	117	1,508	89	2,920	
1909	968		76	121	649	440	3,574	
1910	1,333	78	44	23	279	1,045	4,186	
1911	941	73	87	49	757	136	2,564	



TABLE 7  
ANNUAL DSL RECEIPTS<sup>a</sup> (FRANCS)

YEAR	PASSENGER RECEIPTS	PEANUT FREIGHT	ALL OTHER SLOW FREIGHT	BAGGAGE, MAIL, EXPRESS	TOTAL RECEIPTS	% PASSENGER RECEIPTS	% PEANUT RECEIPTS	% ALL SLOW FREIGHT RECEIPTS
1886 <sup>2</sup>	414,972	220,572	-	82,442	706,464	52.6	?	31.2
1892 <sup>1</sup>	617,536	615,789	-	77,005	1,317,217	46.9	?	46.7
1893	682,542	459,217	237,692	90,772	1,466,455	46.5	32.0	48.2
1894	626,226	498,177	294,415	81,653	1,509,589	41.5	33.0	52.5
1895	523,528	372,288	176,196	-	1,153,663	45.4	32.2	47.4
1896	-	-	-	-	-	-	-	-
1897	507,629	406,472	210,347	90,990	1,215,409	41.8	53.4	50.7
1898	645,164	569,432	357,954	117,646	1,690,196	38.2	33.6	54.8
1899	683,360	639,463	480,012	131,016	1,933,851	35.3	33.1	57.9
1900	602,546	994,138	330,886	110,674	2,038,244	29.6	48.8	65.0
1901	996,858	1,065,449	882,548	160,142	3,104,998	32.1	34.3	62.7
1902	982,999	543,589	780,531	135,067	2,442,187	40.2	22.2	54.2
1903	992,005	807,009	689,476	138,853	2,627,337	37.8	30.7	57.0
1904	878,407	732,358	575,255	121,823	2,307,843	38.1	31.7	56.7
1905	817,590	604,786	688,352	117,481	2,228,208	36.7	27.1	58.0
1906	-	-	-	-	-	-	-	-
1907	1,100,783	1,144,329	659,159	156,232	3,060,402	36.0	37.4	58.9
1908	1,184,306	905,425	1,133,745	166,247	3,386,720	35.0	26.7	60.2
1909	1,425,625	1,654,268	945,822	210,227	4,235,940	33.7	39.1	61.4
1910	1,685,774	1,795,083	1,037,376	263,681	4,781,913	35.3	37.5	59.2
1911	1,413,812	843,379	911,752	224,946	3,390,889	41.7	24.9	51.8

TABLE 7--CONTINUED

- 1 Figures 1892 to 1911 in annual reports of DSL Board of Directors to stockholders (1896 missing)
  - 2 1886 figures in Etienne Report, FOM, Senegal XII, 69.
- a Sources: For 1892 to 1911 - Annual Reports of DSL Board of Directors to stockholders.

TABLE 8

PASSENGER TRAFFIC-DSL<sup>a</sup>

YEAR	NUMBER OF PASSENGERS			TOTAL
	1ST CLASS	2ND CLASS	3rd CLASS	
1885	1681	6083	93,113	100,877
1886	1845	7148	103,525	112,518
1887	2043	8422	144,267	154,732
1888	2192	9828	175,134	187,154
1889	2110	8702	148,814	159,626
1890	2264	9036	136,707	148,007
1891	2263	9200	144,417	155,880
1892	2694	10,828	187,865	201,387
1893	3275	12,955	207,656	223,886
1894	3987	12,264	190,536	206,787
1895	3144	10,941	159,506	173,591

YEAR	NUMBER OF PASSENGER-KILOMETERS			TOTAL
	1ST CLASS	2ND CLASS	3RD CLASS	
1885	139,108	365,356	4,691,092	5,195,556
1886	105,650	461,790	6,354,911	6,922,351
1887	222,942	574,464	7,589,786	8,387,192
1888	238,430	698,999	8,920,889	9,858,318
1889	236,554	603,543	7,879,014	8,719,111
1890	244,654	615,409	7,585,330	8,445,393
1891	260,276	662,325	8,061,518	8,930,119
1892	290,223	720,665	10,384,187	11,375,075
1893	344,133	830,793	11,273,686	12,448,612
1894	388,380	779,916	10,276,736	11,445,032
1895	345,310	718,429	8,442,229	9,505,965

TABLE 8--CONTINUED

YEAR	PASSENGER RECEIPTS (FRANCS)			TOTAL
	1ST CLASS	2ND CLASS	3RD CLASS	
1885	12,218.15	26,696.50	254,637.01	293,551.66
1886	12,158.50	26,279.25	336,019.47	384,462.22
1887	20,424.76	47,823.84	403,980.16	472,228.76
1888	20,451.88	53,618.56	481,008.82	555,079.26
1889	21,667.49	47,947.27	413,909.12	483,521.93
1890	21,703.62	46,900.98	387,715.86	456,320.46
1891	22,551.79	45,485.09	408,846.57	476,883.15
1892	25,880	52,946	538,711.83	617,536.45
1893	25,207	62,909.40	592,418.65	682,542.
1894	36,316.81	58,281.21	531,626.90	626,225.93
1895	31,542	50,610	441,303.20	523,528.17

YEAR	%3RD CLASS PASSENGERS	% 3RD CLASS RECEIPTS	AVERAGE TRIP ONE-WAY (KMS)		
			1ST CLASS	2ND CLASS	3RD CLASS
1885	92.3	86.7	82.8	60.1	50.4
1886	92.0	87.4	57.3	64.6	61.4
1887	93.2	85.5	109.1	68.2	52.6
1888	93.6	86.7	108.8	71.1	50.9
1889	93.2	85.6	112.1	69.4	52.9
1890	92.3	85.0	108.1	68.1	55.5
1891	92.6	85.7	115.0	72.0	55.8
1892	93.3	87.2	107.7	66.6	55.2
1893	92.8	86.8	105.1	64.1	54.3
1894	92.1	84.9	97.4	63.6	53.9
1895	91.9	84.3	109.8	65.7	52.9

a Source: From tables of traffic by DSL, in FOM, Senegal XII, 74.

TABLE 9  
ANNUAL EXPENSES<sup>a</sup> (FRANCS)

SERVICE	1883	1884	1885	1886	1887	1888	1889
PARIS - Ad- ministration	19,020.90	29,908.67	58,304.24	191,196.85	160,941.24	167,049.96	174,891.72
Dakar-Oper- ations, Cen- tral Serv.	81,178.62	258,453.92	767,284.57	334,658.80	341,668.73	188,031.73	138,944.50
Movement - Field Oper- ations	22,096.84	114,986.32	270,206.10	381,924.66	332,793.45	278,018.10	245,825.30
Rolling Stock	58,295.87	256,434.25	523,064.33	676,757.39	449,181.54	483,269.02	471,769.80
Track Maint- enance	39,766.41	357,975.94	809,239.78	1,285,865.66	881,801.91	789,503.99	1,117,556.73
Health Ser- vice	-	-	-	195,257.49	98,307.30	72,642.78	68,593.66
Interest on Cash Bor- rowing	4,224.41	29,201.93	64,967.37	128,221.58	80,931.23	58,751.47	61,750.32
TOTALS	224,583.05	1,046,961.03	2,493,066.39	3,193,880.43	2,345,625.40	2,037,267.05	2,279,332.03

-506-

<sup>a</sup> Source: Petyt Report - DSI expenses, 1888-1889 (July 1890), FOM, Senegal XII, 69

TABLE 10

BREAKDOWN OF TK RECEIPTS, 1910-1922<sup>a</sup>

COMMERCIAL RECEIPTS (francs)

YEAR	SECTION	PASSENGERS AND BAGGAGE	EXPRESS FREIGHT	SLOW FREIGHT	TOTAL COM- MERCIAL RECEIPTS	TOTAL RECEIPTS INCLUDING GOVERNMENT TRAFFIC
1910	1	329,023	30,988	607,001	967,012	974,575
	2	7,286	608	3,715	11,609	11,698
	TOTAL	<u>336,309</u>	<u>31,596</u>	<u>610,715</u>	<u>978,621</u>	<u>988,272</u>
1911	1	388,997	26,840	455,061	869,998	890,165
	2	60,496	8,665	34,134	112,893	113,595
	3	5,064	83	1,108	5,255	6,440
TOTAL	<u>463,557</u>	<u>34,502</u>	<u>490,305</u>	<u>988,452</u>	<u>1,010,199</u>	
1912	1	322,000	27,146	381,406	730,662	754,823
	2	121,180	16,637	81,717	210,533	234,701
	3	57,796	6,705	38,400	102,961	111,067
TOTAL	<u>500,976</u>	<u>50,488</u>	<u>501,582</u>	<u>1,053,047</u>	<u>1,090,591</u>	
1913	1	598,370	32,477	332,160	763,008	793,052
	2	142,442	26,537	399,324	568,302	578,468
	3	112,660	11,754	89,580	213,994	238,652
TOTAL	<u>553,473</u>	<u>70,768</u>	<u>821,063</u>	<u>1,545,303</u>	<u>1,610,172</u>	
1914	1	462,833	31,763	625,087	1,119,665	1,150,708
	2	179,342	37,505	157,082	375,929	392,258
	3	75,637	5,690	43,161	134,488	159,089
TOTAL	<u>717,813</u>	<u>74,958</u>	<u>825,310</u>	<u>1,618,080</u>	<u>1,682,056</u>	
1915	1	294,556	29,182	593,929	847,666	873,531
	2	156,829	44,253	204,000	405,062	424,425
	3	75,355	8,162	188,682	272,205	314,989
TOTAL	<u>456,740</u>	<u>81,601</u>	<u>986,010</u>	<u>1,524,951</u>	<u>1,612,925</u>	

- (1) Thiès-Diourbel section (79 Km)
- (2) Diourbel- Kaolack section (77Km)-not including Diourbel
- (3) Guinguineo to Terminus of line

TABLE 10--CONTINUED

COMMERCIAL RECEIPTS (francs)

YEAR	SECTION	PASSENGERS AND BAGGAGE	EXPRESS FREIGHT	SLOW FREIGHT	TOTAL COM- MERCIAL RECEIPTS	TOTAL RECEIPTS INCLUDING GOVERNMENT TRAFFIC
1916	1	343,541	30,010	324,248	702,709	737,715
	2	190,727	41,924	150,861	375,261	385,904
	3	<u>77,756</u>	<u>7,391</u>	<u>150,584</u>	<u>235,631</u>	<u>359,432</u>
	TOTAL	607,023	79,255	625,413	1,311,601	1,484,049
1917	1	417,110	32,665	395,405	845,181	892,810
	2	214,887	44,740	230,617	550,144	565,455
	3	<u>115,610</u>	<u>7,006</u>	<u>202,803</u>	<u>395,510</u>	<u>344,358</u>
	TOTAL	807,608	84,411	828,315	1,790,834	1,802,623
1918	1	542,074	59,458	631,161	1,252,694	1,389,176
	2	237,777	60,185	233,980	531,942	558,336
	3	<u>199,148</u>	<u>14,119</u>	<u>234,952</u>	<u>498,214</u>	<u>787,188</u>
	TOTAL	978,997	135,763	1,150,092	2,262,653	2,734,700
1919	1	501,305	157,019	680,167	1,318,408	1,332,023
	2	464,917	100,819	253,229	812,767	933,669
	3	<u>200,902</u>	<u>10,708</u>	<u>154,177</u>	<u>356,766</u>	<u>450,022</u>
	TOTAL	1,167,124	248,344	1,087,574	2,503,041	2,935,775 <sup>x</sup>
1920	1	1,134,279	402,123	1,402,697	3,029,100	3,432,622
	2	1,012,936	280,068	669,536	1,962,540	2,060,376
	3	<u>435,790</u>	<u>51,739</u>	<u>347,386</u>	<u>854,914</u>	<u>946,336</u>
	TOTAL	2,583,005	733,930	2,509,620	3,826,555	6,444,514 <sup>x</sup>
1921	1	1,094,824	792,781	2,155,695	3,443,230	3,858,051
	2	982,115	140,522	841,731	1,964,367	2,110,811
	3	<u>416,215</u>	<u>18,679</u>	<u>627,536</u>	<u>1,062,431</u>	<u>1,432,358</u>
	TOTAL	2,403,158	351,979	3,624,891	6,470,028	7,943,182 <sup>x</sup>
1922	1	1,185,760	168,730	2,531,814	3,686,305	4,070,201
	2	1,075,830	125,463	1,054,622	2,255,916	2,303,450
	3	<u>557,941</u>	<u>18,259</u>	<u>657,208</u>	<u>1,213,407</u>	<u>1,401,664</u>
	TOTAL	2,819,532	312,453	4,223,643	7,355,628	8,334,897 <sup>x</sup>

x - includes transportation of construction material

(a) Source: Notice on the TK by Director TK Ballabey, July 20, 1923, ARS, 6<sup>P</sup> 160-36

TABLE 11

GROSS RECEIPTS AND EXPENSES AFTER THE TKN FUSION <sup>a</sup>

YEAR	RECEIPTS (FRANCS)		EXPENSES (FRANCS)		PROFITS (Receipts Less Expenses)
	THIES-KAYES	KAYES-NIGER	THIES KAYES	KAYES-NIGER	
1924	16,858,979	7,056,298	13,510,392	8,039,559	2,385,328
1925	24,610,424	9,927,277	20,808,861	16,135,212	2,406,313
1926	36,095,665	17,204,964	25,167,340	20,093,507	8,039,722
1927	<u>THIES-NIGER</u> 58,632,237		<u>THIES-NIGER</u> 36,035,906		3,596,331
1928	64,635,073		61,393,177		2,741,896
1929	62,554,838		60,839,513		1,715,325
1930	55,525,412		65,743,580		-10,418,169
1931	42,505,586		52,564,917		-10,059,330
1932	36,336,382		43,558,353		- 7,322,075

-509-

a Source: Pruvost report, June 25, 1935, Page 35 (Bagot Mission)- FOM,TP Niger,  
 These figures are not exactly the same as those presented in Ghemin de fer de Thies au



TABLE 12  
PEANUT FREIGHT SHIPPED<sup>a</sup> (METRIC TONS)

FROM RAILROAD SECTION OR STATION	1928-29 SEASON		1929-30 SEASON		1930-31 SEASON	
	TO KAOLACK	TO DAKAR & RUFISQUE	TO KAOLACK	TO DAKAR & RUFISQUE	TO KAOLACK	TO DAKAR & RUFISQUE
KOULIKORO (KN)	6,805	4,235	8,064	3,265	4,561	3,037
BAMAKO-TOUKOTO	5,241	3,479	6,653	2,433	5,462	2,177
TOUKOTO-KAYES	1,237	773	1,261	237	671	337
<u>TOTAL KN</u>	<u>13,283</u>	<u>8,487</u>	<u>15,978</u>	<u>5,935</u>	<u>10,694</u>	<u>5,551</u>
KAYES-VILLE	1,926	1,904	1,458	1,047	408	1,139
KAYES-AMBEDEDI	248	994	185	984	303	662
AMBEDEDI-COTIARI	2,389	159	2,179	151	1,188	103
TAMBACOUNDA- KOUNGHEUL	4,268	-	5,933	23	5,246	8
KOUNGHEUL- MALEME HODAR	6,813	-	11,770	-	13,091	-
KAFFRINE- BIRKELANE	6,745	-	11,060	-	12,968	-
GOSSAS & GUINGUINEO	16,072	-	24,299	-	19,650	-
SINE RAILROAD	-	-	-	-	1,131	-
DIOURBEL	37,106	3,713	38,522	7,485	23,906	20,127

TABLE 12--CONTINUED

FROM RAILROAD SECTION OR STATION	1928-29 SEASON		1929-30 SEASON		1930-31 SEASON	
	TO KAOLACK	TO DAKAR & RUFISQUE	TO KAOLACK	TO DAKAR & RUFISQUE	TO KAOLACK	TO DAKAR & RUFISQUE
BAMBEY	1,516	23,103	1,039	23,796	-	18,212
KHOMBOLE	-	26,421		23,893	-	12,245
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL TK	77,083	56,297	96,445	57,379	77,891	52,496
TOTAL TN	90,366	64,784	112,423	63,313	88,585	58,047
% on Thies- Kaolack Section	69.6%		67.7%		65.0%	

a Source: Copy report acting director TN to IGTP, September 26, 1931, SARS, DCF.

TABLE 13  
EFFECTS OF FUSION -  
VOLUME AND INTENSITY OF TRAFFIC<sup>a</sup>

YEAR	(TK + KN ADDED)	EXPRESS AND		TK + KN ADDED PASSENGERS X DISTANCE (UNIT KM)
	TONNAGE EXPRESS AND SLOW FREIGHT TONNAGE X DISTANCE (TONS)	TK ONLY	EXPRESS AND SLOW FREIGHT (T. Km) TK + KN ADDED	
1920	192,541	9,899,424	25,503,657	
1921	168,035	8,282,438	20,655,682	
1922	194,622	13,156,351	26,548,063	
1923	202,246	11,119,801	27,123,335	
1924 Fusion	234,668		54,951,696	
1925	267,823		66,643,859	94,937,266
1926	297,705		85,453,844	98,470,084
1927	256,106		67,760,959	64,453,246
1928	258,658		83,034,380	57,736,503
1929	262,523		86,343,774	52,282,572

a Source: From Legregram report (mission Sol), June 16, 1930, FOM,TP, p. 33. These figures are close to, but not exactly the same as those given in Chemin de fer de Thiès au Niger, p. 84, for the years 1924 to 1928.



TABLE 14--CONTINUED

Several Sources:

1. From tables in annual customs service reports on Senegal, especially for 1932, SABS, DCF.
  2. Annual reports of DSL Board of Directors to Stockholders.
  3. Annual reports to DSL stockholders- See Table 15.
  4. Legregram report (Sol Mission), June 16, 1930, FOM, TP.
  5. Derived from tables of monthly peanut freight in ARS, 6P438-36.
- a - Probably reflects a heavy traffic due to "Ravitaillement" operations within Senegal.

TABLE 15

ANNUAL PEANUT FREIGHT PER STATION ON DSL<sup>a</sup> (METRIC TONS)

YEAR	<u>INCOMING</u>			<u>OUTGOING</u>		
	DAKAR	RUFISQUE	ST. LOUIS	SEBIKOTANE	POUT	THIES
1908	5,351	64,312	6,564	421	1,649	14,270 ...
1909	1,970	131,212	12,688	696	1,616	71,139
1910	3,901	135,902	19,876	838	1,960	73,585
1911	2,874	76,529	7,339	332	1,178	46,760
1912	8,028	82,930	5,715	667	2,020	40,029
1913	8,000	114,091	3,380	1,045	2,709	49,906
1914	4,160	107,865	3,252	824	2,630	57,507
1915	5,812	136,786	3,598	1,024	2,675	95,529
1916	7,700	62,849	878	562	1,454	31,369
1917	16,294	74,561	1,123	994	2,244	46,220
1918	24,183	85,171	4,039	486	1,927	58,401
1919	18,846	87,401	1,496	1,038	2,980	63,680
1920	13,060	141,653	1,500	483	2,816	80,533
1921	22,437	117,079	1,405	744	3,383	64,564
1922	31,823	102,009	6,102	680	3,564	65,889
1923	26,787	92,569	10,359	860	3,442	48,745
1924	43,356	76,504	8,750	720	3,811	55,509
1925	83,393	132,812	18,145	1,324	5,541	93,128
1926	89,646	123,349	15,986	1,316	5,102	99,435
1927	57,766	89,215	9,329	726	3,062	66,800
1928	67,999	103,563	8,999	889	3,742	77,329
1929	80,503	88,788	8,839	780	4,977	79,060
1930	81,888	66,420	7,610	215	2,604	61,185
1931	86,257	36,489	1,366	13	1,693	54,687
1932	25,419	15,030	1,394	301	1,333	16,921 ...

TABLE 15--CONTINUED

OUTGOING

YEAR	THIES LESS TK FREIGHT TRANSIT	TIVAOUANE	PIRE BOUREYE	N'GAYE MEKHE	KELLE	N'DANDE
1908	13,814	15,965	6,461	14,197	3,251	4,832 ...
1909	18,053	12,336	7,104	16,816	4,957	8,000
1910	24,819	10,577	9,132	16,075	5,353	7,345
1911	7,593	5,940	4,302	8,123	2,482	3,624
1912	7,489	6,284	5,243	9,053	2,603	5,811
1913	13,086	9,033	7,790	13,300	4,883	5,263
1914	11,245	6,047	5,328	13,548	8,932	5,109
1915	18,579	10,032	9,415	12,966	4,320	3,105
1916	3,771	5,257	4,177	7,416	2,169	2,729
1917	8,401	6,403	3,917	8,291	3,415	3,046
1918	6,341	3,912	6,044	12,061	6,621	3,325
1919	7,474	4,257	4,754	7,772	5,330	2,719
1920	11,835	8,434	6,636	15,593	5,994	5,916
1921	5,919	11,430	7,072	14,052	5,345	5,147
1922	9,291	10,040	5,218	16,031	4,396	4,390
1923	8,052	11,024	5,854	14,822	4,612	4,972
1924	7,229	9,802	5,176	13,099	5,101	5,650
1925	18,597	15,671	9,245	23,846	8,356	11,168
1926	17,996	16,702	9,772	25,319	7,981	9,886
1927	11,952	11,010	7,605	17,937	5,316	6,943
1928	13,938	12,758	6,989	17,548	5,189	7,491
1929	16,887	13,902	8,217	18,801	7,778	7,008
1930	5,193	8,637	6,270	16,088	4,980	7,169
1931	6,437	5,448	6,138	17,520	4,152	4,819
1932	3,677	3,252	2,491	6,902	1,565	1,699 ...

TABLE 15--CONTINUED

OUTGOING

YEAR	KEBEMER	GOUMBO GUEOUL	LOUGA	SAKAL	M'PAL	RAO	
1908	5,020	3,444	3,224	461	313	455	...
1909	7,547	5,363	7,795	960	224	785	
1910	10,153	7,621	12,525	1,720	907	1,191	
1911	4,012	2,408	5,644	1,009	579	631	
1912	3,402	6,467	6,686	1,712	762	742	
1913	9,259	7,738	10,443	2,297	558	515	
1914	8,480	5,847	5,030	530	40	301	
1915	4,303	1,795	1,144	143	13	42	
1916	3,552	3,317	2,414	419	72	92	
1917	5,189	3,078	3,222	793	93	422	
1918	9,459	4,528	3,198	208	34	263	
1919	6,144	4,104	4,149	616	68	272	
1920	10,556	7,342	8,980	1,012	227	619	
1921	10,650	6,741	8,115	885	230	385	
1922	9,347	7,177	8,449	1,528	435	677	
1923	11,211	8,329	10,454	2,149	670	681	
1924	11,097	5,571	9,984	1,639	346	496	
1925	19,353	13,365	26,171	3,698	809	1,196	
1926	17,260	9,653	21,092	3,066	693	1,040	
1927	13,330	6,333	14,543	1,654	421	591	
1928	11,608	9,472	17,274	2,671	658	862	
1929	12,009	5,994	15,831	2,116	540	616	
1930	12,519	7,097	18,359	3,141	829	726	
1931	10,838	5,463	12,611	1,021	349	279	
1932	3,679	1,972	3,001	473	86	87	...



TABLE 15--CONTINUED

OUTGOING

YEAR	TK TRANSIT	TOTAL
1908	456	76,969
1909	53,084	146,130
1910	48,900	160,170
1911	39,167	87,363
1912	32,540	97,190
1913	36,820	129,820
1914	46,262	115,675
1915	76,950	146,947
1916	27,598	72,138
1917	37,819	93,105
1918	52,060	113,887
1919	56,206	108,450
1920	68,698	159,364
1921	58,645	140,915
1922	56,598	140,012
1923	40,693	129,000
1924	48,280	128,740
1925	74,531	234,402
1926	81,439	229,041
1927	54,848	156,507
1928	63,391	181,666
1929	62,173	178,736
1930	55,916	156,007
1931	48,250	125,400
1932	13,244	47,870

a Source: Annual reports of DSL Board of Directors to stockholders (1909 to 1933).

TABLE 16  
TK PEANUT FREIGHT DISTRIBUTION BETWEEN THE DSL AND KAOLACK  
OUTGOING PEANUTS (TONS)

YEAR	KHOMBOLE	BAMBEY	DIORBEL	GOSSAS	GUING- UINEO	TOTAL FIRST 3 COLUMNS	TK TO DSL (1)	ESTI- MATE- <sup>a</sup> DIOUR- BEL PEA- NUTS TO KAOLACK	ESTI- MATE % DIOUR- BEL PEA- NUTS TO KAOLACK
1908 <sup>1</sup>	456	-	-	-	-	456	456	0	0
1909 <sup>1</sup>	19,123	16,354	17,607	-	-	53,084	53,084	0	0
1910 <sup>1</sup>	17,031	12,683	19,052	-	-	48,766	48,900	0	0
1911 <sup>2</sup>	14,769	8,987	13,676	565	347	37,432	39,167	0	0
1912 <sup>2</sup>	11,751	10,428	12,562	1,447	2,399	34,741	32,540	2,201	17.5
1913 <sup>2</sup>	17,005	13,523	16,967	2,267	1,347	47,495	36,820	10,675	62.9
1914 <sup>2</sup>	21,834	19,292	20,817	6,210	2,268	61,943	46,262	15,681	75.3
1915 <sup>2</sup>	30,082	19,530	27,552	8,872	4,624	77,164	76,950	214	1.0
1916 <sup>2</sup>	11,869	8,424	12,263	3,870	1,285	32,556	27,598	4,958	40.0
1917 <sup>2</sup>	12,256	11,431	15,192	7,029	4,578	38,879	37,819	1,060	7.0
1918 <sup>2</sup>	17,263	14,029	22,637	9,526	4,629	53,929	52,060	1,869	8.3
1919 <sup>2</sup>	22,270	20,516	28,776	10,131	8,849	71,562	56,206	15,362	53.4
1920 <sup>2</sup>	25,201	21,007	32,063	12,203	8,900	78,271	68,698	9,573	30.0
1921 <sup>2</sup>	21,437	20,314	26,074	10,744	8,987	67,825	58,645	9,180	35.2
1922 <sup>2</sup>	29,568	22,681	38,871	16,584	9,923	91,120	56,598	34,522	88.8
1923 <sup>2</sup>	18,167	15,697	26,012	15,111	7,697	59,876	40,693	19,183 <sup>b</sup>	73.7
1924 <sup>2</sup>	18,312	16,356	33,371	14,950	7,964	68,039	48,280	19,759 <sup>b</sup>	59.2 <sup>b</sup>

-519-

TABLE 16--CONTINUED

Sources:

- 1 Annual reports to DSL stockholders.
- 2 Table of peanut freight from 5 TK stations, 1911-1926, in FOM, TP.
  - a Column 6 minus column 7.
  - b After fusion of the TK with the KN, Dakar received about 1/3 of the KN's peanuts, so that the more complicated pattern of traffic makes this term meaningless.

TABLE 17  
RECORDED POPULATIONS OF COMMUNES AND ESCALES IN SENEGAL

Commune or Escale	1914 <sup>1</sup>	1916 <sup>2</sup>	1921 <sup>4</sup>	1925 <sup>5</sup>	1930 <sup>2</sup>	1934 <sup>6</sup>
Saint Louis	23,481	22,169	20,358	19,006	19,373	30,800
Dakar	21,624	24,577	37,145	-	54,000 (In 1931 <sup>8</sup> )	76,100
Gorée	923	759	998	-	-	-
Rufisque	12,873	11,658	11,307	17,082	20,029 <sup>a</sup>	17,600 <sup>a</sup>
Louga	1,476	1,433	3,108	3,772	6,316	3,600
Mekhé	379	-	1,300	1,918	2,074	1,860
Tivaouane	2,110	1,978	2,584	3,615	3,230	2,900
Thiès	3,044 <sup>7</sup>	2,967	6,427	6,612	12,620	15,500
Khombole	1,075 <sup>7</sup>	-	-	1,202	1,929	1,900
Bambey	458 <sup>7</sup>	-	-	-	-	4,200
Diourbel	2,192	2,283	2,538	5,852	11,348	15,400
Gossas	-	-	-	-	2,765	5,900
Kaolack	1,454	1,442	1,532	5,652	13,348	44,200
Fatick	1,319 <sup>7</sup>	-	-	2,185	3,035	3,400
Foundiougne	994 <sup>7</sup>	-	-	1,625	1,784	2,700
Ziguinchor	1,477	1,479	2,629	1,669	8,225	6,100
Dagana	1,689	1,462	-	-	1,516	-

TABLE 17--CONTINUED

Commune or Escale	1914 <sup>1</sup>	1916 <sup>2</sup>	1921 <sup>4</sup>	1925 <sup>5</sup>	1930 <sup>2</sup>	1934 <sup>6</sup>
Podor	2,172	2,227	-	-	1,329	-
Bakel	3,081	3,134	-	-	2,840	-
Tambacounda	-	-	-	-	1,626	-
M'Bour	-	-	-	5,351	3,182	-

Several Sources:

- 1 Extracted from tables in SARS, 22G50
- 2 Extracted from tables in SARS, DCF
- 4 ARS, 17G 239-108
- 5 Table dated September 25, 1925, SARS, DCF
- 6 Table III, Annuaire statistique de l'AOF, 1933-34, p. 20
- 7 From tables in SARS, 22G52
- 8 Lombard, Géographie humaine, p. 153
- a Including Bargny

TABLE 18

EUROPEAN POPULATION OF COMMUNES AND ESCALES IN SENEGAL<sup>a</sup>

COMMUNE OR ESCALE	1908 <sup>1</sup>	1914 <sup>2</sup>	1916 <sup>2</sup>	1921 <sup>4</sup>	1924 <sup>2</sup>	1930 <sup>2</sup>	1934 <sup>b5</sup>
Saint Louis	1,010	417 + 633 Métis	346 + 540 Métis	627	-	440	990
Dakar	2,434	2,201	2,157 + 762 Métis	2,534	-	-	10,250
Gorée	-	48 + 110 Métis	31	81	-	-	-
Rufisque	186	250 + 118 Métis	181 + 115 Métis	201	307	376	264
Louga	100	67	34 + 10 Métis	59	72	231	180
Mekhé	-	34 <sup>3</sup>	-	36	74	38	60
Tivaouane	-	77 + 10 Métis	86 + 10 Métis	43	73	53	100
Thiès	140	222 + 29 Métis	185 + 10 Métis	296	415	628	810
Khombole	50	49 <sup>3</sup>	-	-	-	56	160
Bambey	26	21 <sup>3</sup>	-	-	-	-	110
Diourbel	28	53	86 + 6 Métis	90	-	248	240
Gossas	-	-	-	-	-	80	100
Kaolack	27	53 + 7 Métis	143 + 12 Métis	68	-	813	620
Fatick	40	30 + 10 Métis <sup>3</sup>	-	24	-	179	160
Foundiougne	33	20 + 5 Métis	-	22	-	42	50
Ziguinchor	-	67 + 20 Métis	52 + 10 Métis	45	-	160	190
Dagana	-	22	13	-	-	15	-
Podor	-	31 + 5 Métis	20 + 4 Métis	-	-	44	-
Bakel	-	2 + 2 Métis	2 + 1 Métis	-	-	9	-
Tambacounda	-	-	-	-	-	179	160
M'Bour	-	33 <sup>3</sup>	-	-	-	-	180

TABLE 18--CONTINUED

a. Metis were sometimes tabulated into the figures for "Français." Sometimes not--which may account for some fluctuations in the size of populations, especially for St. Louis, Dakar, and Rufisque.

Several Sources:

- 1 From tables in SARS, DCF
- 2 From tables in SARS, 22G50
- 3 From tables in SARS, 22G52
- 4 ARS, 17G239-108
- 5 Table III, Annuaire statistique de l'AOF, 1933-34, p.20.

TABLE 19

POPULATION OF CERCLES DIRECTLY AFFECTED  
BY RAILROADS

CERCLE	1908 <sup>1</sup>	1914 <sup>2</sup>	1925 <sup>3</sup>	1930 <sup>1</sup>
Tivaouane	131,082	131,848	131,337	a
Thiès	74,656	96,947	107,327	227,396 <sup>c</sup>
Louga	<u>99,634</u>	<u>92,660</u>	<u>98,213</u>	<u>176,124</u> <sup>b</sup>
Total: Thiès+Tiva Tivaouane+ Louga	<u>305,372</u>	<u>321,455</u>	<u>336,877</u>	<u>403,520</u>
Baol	176,839	197,858	166,953	179,750 <sup>c</sup>
Sine-Saloum	171,203	199,305	223,590	291,471
Niani-Ouli (later Tam- bacounda)	<u>25,256</u>	<u>34,491</u>	<u>33,467</u>	<u>41,224</u>
Total: Baol+ Sine-Saloum+ Niani-Ouli	<u>373,298</u>	<u>431,654</u>	<u>424,010</u>	<u>512,445</u> <sup>c</sup>
Upper Gambia	22,564	25,833	42,067	20,680
Total Senegal (includes other cercles and communes	1,173,000 <sup>4</sup> (in 1910)	1,280,933	1,354,000 (in 1926)	1,638,000 (in 1931)

1 From SARS, DCF

2 From ARS, 22G50

3 Table dated September 25, 1925 in SARS, DCF

4 From Lombard, Géographie Humaine, p.21

a Cercle of Tivaouane disbanded in 1928 and divided between neighboring cercles

b Figure includes population of new cercle of Djolof, previously part of Louga cercle.

c Cantons of Fandène and Diack transferred from cercle of Baol to cercle of Thiès in 1928.



TABLE 20  
COMPARISON OF TRAFFIC CARRIED ON THE DSL AND THIS-NIGER

YEAR	Annual Freight Carried (Metric Tons) On the Railroads (Total of slow, express, Mail, Baggage)				Total Annual No. of Passengers			Peanut Freight (Tons)	
	TK <sup>1</sup>	KN <sup>1</sup>	DSL <sup>3</sup>	TK TO DSL DSL TO TK	TK <sup>1</sup>	KN <sup>1</sup>	DSL <sup>3</sup>	TK <sup>2</sup> (Including Ambidedi)	ORIGIN DSL <sup>4</sup>
1910	78,282	29,338	313,428	50,193	15,467	130,025	89,158	690,271	
1911	73,530	39,376	180,891	40,167	10,986	199,638	118,365	501,944	
1912	67,577	42,890	180,903	32,844	8,662	132,163	145,768	486,844	
1913	76,464	52,055	258,590	38,144	9,874	249,793	127,851	631,091	
1914	103,633	42,299	238,829	47,965	11,749	275,995	134,276	548,409	
1915	125,885	31,064	217,860	78,429	7,190	167,353	122,366	409,355	
1916	62,818	38,655	149,494	30,972	5,146	221,214	164,307	705,451	
1917	88,157	61,042	166,383	40,715	6,905	253,889	148,391	597,817	
1918	102,893	59,955	248,614	56,342	7,368	249,681	281,815	614,876	
1919	135,063	50,985	229,151	60,690	6,484	257,400	341,743	478,887	
1920	146,624	47,917	250,224	69,891	10,233	347,440	374,543	572,365	
1921	135,233	42,802	226,889	61,091	6,474	249,022	299,067	571,766	
1922	140,840	53,742	211,296	58,280	10,427	322,031	322,515	595,152	
1923	132,980	69,226	256,127	42,885	13,458	447,503	388,634	691,047	89,460
		TN							
1924	235,070		253,754	54,520	28,651	936,845		773,053	80,460
1925	267,823		383,391	81,796	40,221	1,090,088		1,042,217	159,871
1926	297,705		433,944	93,438	36,972	995,643		951,781	147,602
1927	256,106		379,594	63,364	35,715	674,212		585,506	101,659
1928	258,658		355,455	72,163	35,034	669,786		606,581	118,275
1929	262,523		319,039	76,065	25,625	591,073		545,771	116,563
1930			295,465	66,804	21,022			356,698	100,091
1931			217,058	54,309	10,911			157,046	77,159
1932			103,009	18,737	10,167			99,443	34,626

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TABLE 20--CONTINUED

Sources:

- 1 From tables in Note sur difficultés création TN.
- 2 Legregram report (Mission SOL) June 16, 1930, p. 33,  
FOM, TP.
- 3 Annual reports DSL Board of Directors to stockholders.
- 4 From Pruvost report (Mission Bagot), June 1, 1935,  
FOM, TP.

TABLE 21  
DSL EMPLOYEES  
(A) EUROPEAN AND AFRICAN EMPLOYEES

YEAR	CENTRAL SERVICE PARL'S	TOTAL EUROPEANS -SENEGAL	"PERMANENT" AFRICANS	TOTAL AFRICANS -SENEGAL	TOTAL EMPLOYEES SENEGAL	TOTAL EMPLOYEES
Dec. 1885 <sup>1</sup>	25				287	312
Dec. 1886 <sup>1</sup>	26	3		757	917	943
Dec. 1887 <sup>1</sup>	23	129 <sup>3</sup>		685	814	837
Dec. 1888 <sup>1</sup>	26	116 <sup>3</sup>		661	777	803
Dec. 1889 <sup>1</sup>	25	105 <sup>3</sup>		635	740	765
Dec. 1890 <sup>1</sup>	25	96 <sup>4</sup>		649	745	770
Dec. 1891 <sup>1</sup>	24	150 <sup>1</sup>		562	712	736
Dec. 1892 <sup>1</sup>	24	90 <sup>1</sup>		735	825	849
Dec. 1895	27	95		922	1017	1044
1897	-	-		-	576 <sup>6</sup>	
1913 <sup>2</sup>	38	123		684	807	845
1914 <sup>2</sup>	43	128		862	990	1033
1915 <sup>2</sup>	54	126		458	584	638
1916 <sup>2</sup>	52	107		424	531	538
1917 <sup>2</sup>	49	102		428	530	579
1918 <sup>2</sup>	48	106		431	537	585
1919 <sup>2</sup>	45	101		449	550	595

TABLE 21--CONTINUED

(A) EUROPEAN AND AFRICAN EMPLOYEES

YEAR	CENTRAL SERVICE PARIS	TOTAL EUROPEANS -SENEGAL	"PERMANENT" AFRICANS	TOTAL AFRICANS -SENEGAL	TOTAL EMPLOYEES SENEGAL	TOTAL EMPLOYEES
1920 <sup>2</sup>	36	103		590	693	729
1921 <sup>2</sup>	37	121		644	765	802
1922 <sup>2</sup>	37	137		682	819	856
1923 <sup>2</sup>	37	142		666	808	845
1924 <sup>2</sup>	37	146		607	753	790
1925 <sup>2</sup>	39	158		642	800	839
1926 <sup>2</sup>	40	172		768	940	980
1927 <sup>2</sup>	41	176		812	988	1029
1928 <sup>2</sup>	43	149		804	953	996
1929 <sup>2</sup>	43	167		841	1008	1051
1931 <sup>7</sup>		146	165			
ex-DSL <sup>7</sup>		90	126			
1935 on- TN						

-529-

Sources:

1 From annual organization tables in FOM, Senegal XII, 74, 1885-1897./ 2 From list in remaining files DSL (Paris), 1913-1929./ 3 Petyt Report, DSL expenses 1888-1889, FOM, Senegal XII, 69, p. 108./ 4 Petyt Report, DSL expenses 1890, FOM, Senegal XII, 69, p. 14./ 5 Figure from Launay note on DSL, April 10, 1920, FOM, TP./ 6 Fontaneilles Report, July 17, 1898, FOM, TP./ 7 Pruvost Report, June 25, 1935, FOM, TP, p. 104  
 a Including the 7 member board of directors.

TABLE 21

DSL EMPLOYEES

(B) TOTAL PER COMPANY DIVISION

\*(PARENTHESES, ( ), INDICATE NUMBER OF  
AFRICANS IN THE DIVISION

YEAR	CENTRAL SERVICE IN PARIS	CENTRAL SERVICE IN DAKAR	MOVEMENT	ROLLING STOCK	TRACK	MEDICAL	GRAND TOTAL
Dec. 1885 <sup>1</sup>	25	24	85	132	46 <sup>a</sup>	-	312
Dec. 1886 <sup>1</sup>	26	54	73	158	632	-	943
Dec. 1887 <sup>1</sup>	23	16	88	117	582	11	837
Dec. 1888 <sup>1</sup>	26	17	96	133	522	9	803
Dec. 1889 <sup>1</sup>	25	13	95	130	493	9	765
Dec. 1890 <sup>1</sup>	25	16	93	129	499	8	770
1891 Sentence Arbitral operations <u>a forfait</u>							
Dec. 1891 <sup>1</sup>	24	13(3)*	94(39)*	125(53)*	474(463)*	6(4)*	736(562)*
Dec. 1892 <sup>1</sup>	24	17(3)*	105(58)*	148(139)*	548(530)*	7(5)*	849(735)*
1894 <sup>2</sup>	-	18	?	154	571		
Dec. 1895 <sup>1</sup>	27	18 <sup>b</sup>	115(64)*	159(153)*	718(700)*	7(5)*	1044(922)*

TABLE 21--CONTINUED

(B) TOTAL PER COMPANY DIVISION

YEAR	CENTRAL SERVICE IN PARIS	CENTRAL SERVICE IN DAKAR	MOVEMENT	ROLLING STOCK	TRACK	MEDICAL	GRAND TOTAL
1896 <sup>2</sup>	-	19	?	134	548		?
1897 <sup>2</sup>	-	14	106	130	316	10	576
1900 <sup>3</sup>	32	19	112	138	?	4	?

SOURCES:

- 1 From DSL annual tables of organization in FOM, Senegal XII, 74.
  - 2 Fontaneilles Report, July 17, 1898, FOM, TP.
  - 3 Jacquerez Report, September 15, 1901, FOM, TP.
- a Not including locally recruited laborers.
- b Africans in Central Service in 1895 lumped in with those of Movement division.

TABLE 22

TK AND TN EMPLOYEES

(A) EUROPEAN AND AFRICAN EMPLOYEES

YEAR	EUROPEANS	PERMANENT AFRICAN CADRE	AFRICANS ON CONTRACT	DAY LABORERS	UNSKILLED MANPOWER	TOTAL AFRICANS
TK-1913 <sup>1</sup>	109	-	-	-	-	727
TK-1917 <sup>2</sup>	70	30	-	-	-	658
TK-1919 <sup>2</sup>	97 (73) <sup>a</sup>	45	-	-	-	804 (816) <sup>a</sup>
TK-1920	70	55	-	-	-	832
TK-1921	92	72	-	-	-	1166
TK-1922	106	73	-	-	-	1316
<del>TK-1924</del> <sup>3</sup>	360	315	-	-	-	5500
TN-1926 <sup>4</sup>	314	333	275	-	-	-
TN-1930 <sup>5</sup>	443 <sup>a</sup>	225	290	823	6,152 <sup>b</sup>	(7,490)
TN-1931 <sup>6</sup>	403	388	248	-	-	-
TN-1933 <sup>7</sup>	334	403	142	-	-	3,699
TN-1935 <sup>6</sup>	268	373	106	-	-	-
only DN1938 <sup>8</sup>	349	802	-	-	-	7,648

TABLE 22--CONTINUED

(A) EUROPEAN AND AFRICAN EMPLOYEES

Sources:

- 1 Launay note on TK, April 10, 1920, FOM, TP.
- 2 Lists in TK annual reports, FOM, TP.
- 3 Tables in ARS, 6P30-36.
- 4 From 1926 list of TN personnel, RA - Budget annex only.
- 5 Legregram Report, July 12, 1930, FOM, TP. (As of June 1930)-Budget Annex only.
- 6 Pruvost Report, June 25, 1935, FOM, TP, p. 104 - Budget Annex only.
- 7 Fiche dated February 22, 1933, ARS, 1P 212-32.
- 8 From Compte Rendu de gestion-Direction chemins de fer-AOF, 1946, RA, p. 12 (tables 4 and 5).
  - a There were 298 of Cadre, 124 under contract and 21 temporary; of the total, 96 were on vacation.
  - b 316 were in Movement, 1510 were in Rolling Stock, 4254 on Track and Buildings. And 967 were in the 2eme Portion.



TABLE 22

TK EMPLOYEES

(B) NUMBER WORKERS OF DIFFERENT  
STATUTES IN EACH DIVISION

Year	CENTRAL & GENERAL SERVICES	MOVEMENT	ROLLING STOCK	TRACK & BUILDINGS
<u>1917:</u>				
Euros	18	30	14	8
Afric Cadre	-	-	25	-
Afric Day Labor	5 <sup>b</sup>	138	268	222
<u>1919:</u>				
Euros	21	47	16	8
Afric Cadre	-	13	27	-
Afric Day Labor	5 <sup>b</sup>	217	293	249
<u>1920:</u>				
Euros	22	29	16	5
Afric Cadre	-	14	31	5
Afric Day Labor	5 <sup>b</sup>	294	297	236
<u>1921:</u>				
Euros	27	30	27	7
Afric Cadre	-	16	37	6
Afric Day Labor	12 <sup>b</sup>	294	354	384
<u>1922:</u>				
Euros	27	41	33	5
Afric Cadre	-	17	39	5
Afric Day Labor	12 <sup>b</sup>	379	443	421

Source:

a From lists in TK annual reports FOM, TP.

b Not possible to tell whether they were in the Cadre or not.

c Total in Table 22 (A) includes workers on automobile service at Cotiari.

## GLOSSARY

### TERMS

bour - royal title of the rulers of several states in the Senegambia.

bourba - the ruler of Djolof.

borom n'gadio - Wolof term for the family head entitled to occupy a plot of terrain for cultivation after having cleared it with tools.

cheminot - French term for railwayman.

communes-mixtes - mixed municipal and colonial system for governing a municipality, with the local French administrator serving as the mayor and an appointed municipal council.

creole - in Senegal, someone of mixed African and European ancestry.

crown bondsmen - from the French term "captifs de la couronne" indicating the slaves of the royal household, the chiefs of whom had in time risen to important political positions in Cayor by the mid-19th century as servitors of the damel.

damel - the ruler of Cayor.

degressive rates - French term for schedules of sliding-scale charges on a kilometeric basis for freight hauling by rail; called "tapering" in England.

dioula - ambulant African traders, particularly those operating along trade routes in the interior.

**Direction** - French term for a bureaucratic department within the French government (as within a ministry).

**escales** - French term originally signifying trading posts along the Senegal river; later applied generally to trading centers in Senegal, whether on the coast or inland, and especially used to designate the centers growing next to the rail stations.

**facteur** - grade of rail employee, inferior to station-master, serving at rail stations.

**griot** - in the Senegambia, member of an important strata of society of musicians, oral historians, and praise-singers.

**hivernage** - the season in Senegal of rain and humidity, lasting roughly from about June to November.

**lamane** - original occupier of a tract of land, laying claim to it by being the first to clear it with fire.

**maître des langues** - French term for Africans interposing themselves as intermediaries in trade by intercepting produce-bearing carriers on the routes leading into trading centers.

**marabout** - French term for Muslim religious leader.

**marigot** - in West Africa, French term for stream beds that fill with water during the hivernage, but dry out during the dry season.

**métier** - in Senegal, a professional skill introduced by Europeans; in this work, specifically referring to the craft and industrial skills.

**Mouride** - member of a largely Wolof Muslim brotherhood founded in Senegal in the 19th century by Ahmadou Bamba.

navetane - French term for seasonal migrant worker coming from the interior to grow peanuts in coastal and rail areas of Senegal.

n'diatigui - intermediary in specialized market transactions.

niayes - string of humid, fertile depressions along the west coast of Senegal.

prestations - labor obligation of a set number of days of work imposed on African residents of rural areas by the French colonial administration for maintenance and repair of roads, bridges, and other works supposedly of a local nature.

sofas - slaves used as warriors in African armies.

spahi - cavalryman in French African colonial military units.

talibe - student or follower of a marabout.

trader - the French term of "traitant" in Senegal generally meant African or creole intermediary traders.

tyeddo - a warrior, member of the warrior strata in the Senegambia, generally used only to designate those adhering to fetishist custom.

#### ABBREVIATIONS

AMMP - Archives of the Ministry of Marine, Paris.

ANF - National Archives of France, Paris, rue Francs-Bourgeois.

AOF - Afrique Occidentale Francaise.

AP - "Affaires Politiques"- series in French National Archives, Section d'Outre-Mer.

- APA - "Affaires Politiques et Administratives."
- ARS - National Archives of Senegal, Dakar.
- ARS-L - library of the National Archives of Senegal.
- BAO - Banque de l'Afrique Occidentale.
- B.C.E.H.S.A.O.F. - Bulletin du Comité d'Etudes Historique et Scientifiques de l'Afrique Occidentale Française.
- Bull. Admin du Sénégal - Bulletin Administratif du Sénégal.
- Bull. SGCB - Bulletin, Societe de Géographie Commerciale de Bordeaux.
- Bull. SGC de Paris - Bulletin, Societe de Géographie Commerciale de Paris.
- CC - chamber of commerce.
- Confid - series of unclassified registers in National Archives of Senegal.
- DCF - unclassified dossiers of documents dealing with railroads and related subjects in the National Archives of Senegal, Dakar (literally stands for "dossiers des chemins de fer").
- DN - Dakar-Niger railroad.
- DSL - Dakar-Saint Louis railroad.
- DSL(Paris) - archives of the DSL Company in Paris.
- EX-RR - reference to African ex-railwaymen interviewed.
- FOM- National Archives of France, Section d'Outre-Mer, rue Oudinot, Paris.
- GG - Governor General of French West Africa.

- GS - Governor (or later Lt. Governor) of Senegal.
- IGTP - Inspector General of Public Works of French West Africa.
- JO-AOF - Journal Officiel de l'Afrique Occidentale Française.
- JORF - Journal Officiel de la République Française  
-Débats Parl.-Chambre - Débats Parlementaires-Chambre  
-Débats Parl.-Sénat - Débats et Documents Parlemen-  
taires-Sénat.
- JOS - Journal Officiel du Sénégal.
- KN - Kayes-Niger railroad.
- MC - French Minister of Colonies.
- MMC - French Minister of Marine and Colonies.
- Moniteur du Sénégal - Moniteur du Sénégal et Dépendances.
- MTP - French Minister of Public Works.
- P.V. - "procès-verbal" (in English: minutes)
- RA - archives of the Régie des Chemins de Fer du Sénégal.
- Reg. - a set of three registers, minutes of the Commission de Vérification des Comptes du chemin de fer de DSL.
- S/Com(s) - Sub-commission(s).
- SARS - unclassified "fonds du Sénégal" at National Archives of Senegal.
- SECCOA - Syndicat d'Etudes des Chemins de Fer de la Côte Occidentale d'Afrique.
- StL - archives of the colonial government of Senegal still remaining at St. Louis (unclassified).

- TK - Thiès-Kayes railroad.
- TKN - Thiès-Kayes-Niger railroad.
- TN - Thiès-Niger railroad.
- TP - unclassified dossiers on railroads and public works at the National Archives of France, Section d'Outre-Mer.