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DETAILED DESIGN SPECIFICATION  
FOR THE  
AUTOMATIC STATUS AND TRACKING SYSTEM  
MODIFICATIONS FOR LACIE PROCEDURE 1

Job Order 71-695

(TIRF 77-0020)

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FOR THE AUTOMATIC STATUS AND TRACKING SYSTEM  
MODIFICATIONS FOR LACIE PROCEDURE 1  
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Prepared By

Lockheed Electronics Company, Inc.  
System and Services Division  
Houston, Texas  
Contract NAS 9-15200

For

EARTH OBSERVATIONS DIVISION  
SCIENCE AND APPLICATIONS DIRECTORATE



*National Aeronautics and Space Administration*  
**LYNDON B. JOHNSON SPACE CENTER**  
*Houston, Texas*

May 1977

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JSC-12885

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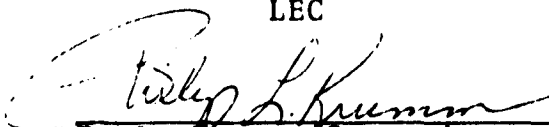
(TIRF 77-0020)

Prepared By

J. M. Everette  
D. L. Smith  
C. C. deValcourt

APPROVED BY

LEC



P. L. Krumm, Supervisor  
Applications Software Section

NASA



V. M. Dauphin  
Systems and Facilities Branch

Prepared By  
Lockheed Electronics Company, Inc.

For  
Earth Observations Division

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
LYNDON B. JOHNSON SPACE CENTER  
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## 1. SCOPE

This document details the alterations of the LACIE Automatic Status and Tracking System which will enable tracking of segments and acquisitions being processed through Procedure 1. The requirements for this tracking were set forth in TIRF 77-0020. A functional level design has already been given in the Project Development Plan for ASATS Modifications for Procedure 1 (document LEC-10413, Revision A). The changes are presented here as modifications to the existing detailed design given in the As-Built Design for LACIE Phase III Automatic Status and Tracking System (document JSC-12743, April 1977).



## 2. MODIFICATIONS OF DATA BASE, INPUT FORMAT, AND TABLES

Table 2-1 reflects the contents of the DAPTS records; Table 2-3 is the DAPTS data base format. Table 2-2 reflects the FLOCON record contents; Table 2-4 is the FLOCON record format.

Tables 2-5 through 2-19 are the input formats that are changed for procedure 1.

The processing description for Procedure 1 is included in Table 2-20. This table which describes the processing for each card type, is input before an update begins (see subroutine RED).

Tables 2-21 and 2-22 define the contents of new tables used in the input transformations (subroutine TFORM).

TABLE 2-1.- DAPTS RECORD FORMAT

Field name	Description	Length (char)	Key
SEG	Segment number	4	
LPI	LACIE phase indicator	1	
COUNTR	Country designator	6	X
REG	Region	2	
ZONE	Zone	4	
STR	Stratum	4	
GD	Global designator	1	
WV	Wheat variety	1	X
PC	Priority code	2	X
TY	Segment type	1	
BIOW1O	Biowindow 1 open (start date)	4	
BIOW1C	Biowindow 1 close (end date)	4	
BIOW2O	Biowindow 2 open	4	
BIOW2C	Biowindow 2 close	4	
BIOW3O	Biowindow 3 open	4	
BIOW3C	Biowindow 3 close	4	
BIOW4O	Biowindow 4 open	4	
BIOW4C	Biowindow 4 close	4	
TOPO	Date topo map received	4	
CROP	Date crop calendar received	4	
ANCIL	Date ancillary data received	4	
SSC	Segment status character	1	X
PROTYP	Process type	1	X
CDTAPE	CCIT & DTRM Tape number	6	
TCARD	T card transaction date	4	
LUP	Time of last update of this record	4	

TABLE 2-2.- FLOCON RECORD FORMAT

Field name	Description	Length (char)	Key
SEG	Segment number	4	
LPI	LACIE phase indicator	1	
DATAcq	Acquisition date	4	
BW	Biowindow	1	X
FF	Film Flag	1	
TAPE	GSFC tape number	6	
GSFC	GSFC processing date	4	
CANI	C&I update date	4	
LPDLCO	Date film products received from LPDL	4	
AICOMP	Date segment ready for CAMS pickup	4	
PACKRE	Date packet received by CAMS	4	
RUNSUB	Date batch data processing request submitted	4	
RUNCT	Run count	1	
PRODRE	Date batch products received by CAMS	4	
REWORK	Date rework begun	4	
RWKCT	Rework count	1	
TOCAS	Date to CAS	4	
CAMSBP	CAMS biowindow	3	
CATG	CAMS evaluation category	2	X
CURS1	Current film status	1	X
CURS2	Current product status	1	X
UNLOAD	Unload transaction date	4	
UTAPEN	Unload tape number	6	
UTAPED	Date for unload tape	4	
LSD	Time of last change to this record	4	

TABLE 2-3.- FORMAT 19 - DAPTS INTERNAL STORAGE DESCRIPTION

Length = 26  
 No. of Field = 28

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
1	SEG	9	4	0	0
2	LPI	13	1	0	0
3	COUNTR	14	6	0	1
4	REG	22	2	0	0
5	ZONE	24	4	0	0
6	STR	28	4	0	0
7	GD	32	1	0	0
8	WV	33	1	0	1
9	PC	34	2	0	1
10	TY	36	1	0	0
11	BIOW10	37	4	0	0
12	BIOW1C	41	4	0	0
13	BIOW20	45	4	0	0
14	BIOW2C	49	4	0	0
15	BIOW30	53	4	0	0
16	BIOW3C	57	4	0	0
17	BIOW40	61	4	0	0
18	BIOW4C	65	4	0	0
19	TOPO	69	4	0	0
20	CROP	73	4	0	0
21	ANCIL	77	4	0	0
22	SSC	81	1	0	1
23	PROTYP	82	1	0	1
24	CDTAPE	83	6	0	0
25	TCARD	89	4	0	0
26	LUP	93	4	0	0

TABLE 2-4.— FORMAT 20 - FLOCON INTERNAL STORAGE DESCRIPTION

Length = 19  
 No. of Fields = 23

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
1	SEG	9	4	0	0
2	LPI	13	1	0	0
3	DATAcq	14	4	0	0
4	BW	18	1	0	1
5	FF	19	1	0	0
6	TAPE	20	1	0	0
7	GSFC	25	4	0	0
8	CANI	29	4	0	0
9	LPDLCO	33	4	0	0
10	AICOMP	37	4	0	0
11	PACKRE	41	4	0	0
12	RUNSUB	45	4	0	0
13	RUNCT	49	1	0	0
14	PRODRE	50	4	0	0
15	REWORK	53	4	0	0
16	RWKCT	57	1	0	0
17	TOCAS	58	4	0	0
18	CAMSBP	62	3	0	0
19	CATG	65	2	0	1
20	CURS1	67	1	0	1
21	CURS2	68	1	0	1
22	UTAPEN	69	6	0	0
23	UTAPED	69	4	0	0
24	UNLOAD	75	4	0	0
25	LSD	79	4	0	0

TABLE 2-5.- FORMAT 21 - "\*" CARD DESCRIPTION

Length = 22  
 No. of Fields = 7

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
4	COUNTR	9	6	4	0
5	REG	28	2	0	0
6	ZONE	31	4	4	0
7	STR	36	4	4	0
8	GD	41	1	4	0
9	PC	43	2	4	0
10	LUP	47	4	0	0
11	PROTYP	53	1	0	0

TABLE 2-6.- FORMAT 27 - "B" CARD DESCRIPTION

Length = 25  
 No. of Fields = 11

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
1	SEG	4	4	0	0
2	LPI	8	1	0	0
4	DATAQ	9	4	0	0
5	LSD	14	4	0	0
6	TAPL	19	6	4	0
7	GSFC	26	4	4	0
8	CANI	31	4	4	0
9	FF	36	1	4	0
10	CURS1	2	1	0	0
12	BW	0	0	8	0
13	CURS2	2	1	0	0

TABLE 2-7.- FORMAT 28 - "G" CARD DESCRIPTION

Length = 25  
 No. of Fields = 4

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
5	LSD	14	4	0	0
6	LPDLCO	14	4	0	0
7	CURS1	2	1	0	0

TABLE 2-8.- FORMAT 29 - "H" CARD DESCRIPTION

Length = 25  
 No. of Fields = 5

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
5	LSD	14	4	0	0
6	AICOMP	14	4	0	0
7	LPDLCO	0	0	7	0
8	CURS1	2	1	0	0

TABLE 2-9.- FORMAT 30 - "I" CARD DESCRIPTION

Length = 25  
 No. of Fields = 5

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
5	LSD	14	4	0	0
6	PACKRE	14	4	0	0
7	AICOMP	0	0	7	0
8	CURS1	2	1	0	0

TABLE 2-10.-- FORMAT 31 -- "J" CARD DESCRIPTION

Length = 25  
No. of Fields = 6

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
5	LSD	14	4	0	0
6	RUNSUB	14	4	0	0
8	CURS2	2	1	0	0
10	RUNCT	0	0	6	0

TABLE 2-11.-- FORMAT 32 -- "K" CARD DESCRIPTION

Length = 25  
No. of Fields = 5

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
5	LSD	14	4	0	0
6	PRODRE	14	4	0	0
7	CURS2	2	1	0	0
9	RUNSUB	0	0	7	0

TABLE 2-12.-- FORMAT 33 -- "M" CARD DESCRIPTION

Length = 25  
No. of Fields = 6

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
5	LSD	14	4	0	0
6	REWORK	14	4	0	0
7	CURS2	2	1	0	0
9	RWKCT	0	0	6	0
10	RUNSUB	0	0	7	0



TABLE 2-13.- FORMAT 34 - "X" CARD DESCRIPTION

Length = 25  
 No. of Fields = 7

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
5	LSD	14	4	0	0
6	CATG	19	2	4	0
7	CAMSBP	22	3	4	0
8	TOCAS	14	4	0	0
9	PACKRE	0	0	7	0
10	CURS2	2	1	0	0

TABLE 2-14.- FORMAT 35 - "U" CARD DESCRIPTION

Length = 25  
 No. of Fields = 3

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
5	LSD	14	4	0	0
7	TOCAS	0	0	7	0

TABLE 2-15.- FORMAT 36 - "7" CARD DESCRIPTION

Length = 25  
 No. of Fields = 4

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
5	LSD	14	4	0	0
7	CURS1	2	1	0	0
9	CURS2	14	4	0	0

TABLE 2-16.- FORMAT 37 - "8" CARD DESCRIPTION

Length = 25  
 No. of Fields = 4

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
5	LSD	14	4	0	0
8	CURS1	2	1	0	0
9	CURS2	14	4	0	0

TABLE 2-17.- FORMAT 38 - "9" CARD DESCRIPTION

Length = 25  
 No. of Fields = 4

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
5	LSD	14	4	0	0
7	CURS1	2	1	0	0
9	CURS2	14	4	0	0

TABLE 2-18.- FORMAT 40 - "T" CARD DESCRIPTION

Length = 22  
 No. of Fields = 5

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
1	LSD	14	4	0	0
2	TCARD	14	4	0	0
3	CURS2	2	1	0	0
4	CDTAPE	23	6	0	0
5	LUP	14	4	0	0

TABLE 2-19.— FORMAT 41 — "N" CARD DESCRIPTION (INTERNAL FORMAT)

Length = 22  
No. of Fields = 5

<u>ID</u>	<u>NAME</u>	<u>ST</u>	<u>LEN</u>	<u>TYP</u>	<u>KEY</u>
1	LSD	14	4	0	0
2	UNLOAD	14	4	0	0
3	CURS2	2	1	0	0
4	LUP	14	4	0	0
5	UTAPEN	19	6	0	0

TABLE 2-20.— PROCESSING DESCRIPTION FOR ASATS UPDATES

<u>Card type</u>	<u>Category</u>	<u>Method for Gen. RID</u>	<u>Input format number</u>
Z (*,2,3)	1	1	21 (52 for ADD)
*	2	1	21
2	2	1	22
3	3	1	23
4	2	1	24
5	2	1	25
6	2	1	26
B	4	2	27
G	5	2	28
H	5	2	29
I	5	2	30
J	5	2	31
K	5	2	32
M	5	2	33
X	5	2	34
U	5	2	36
7	5	2	37
8	5	2	36
9	5	2	38
N	6	2	40
T	6	2	41

TABLE 2-21.— FILM PRODUCTS STATUS TABLE

<u>VALUE</u>	<u>MESSAGE</u>
B	PFC WORK
G	LPDL REC'D
H	PKT AVAL
I	AI WORK
7	CANC
8	REOR
9	REJT

TABLE 2-22.— COMPUTER PRODUCTS STATUS TABLE

<u>VALUE</u>	<u>UNLOAD CONTENTS</u>	<u>MESSAGE</u>
B	NA	C & I WORK
N	NA	I-100 RDY
J	NO	BATCH STD
J	YES	BATCH I-100
K	NO	ANAL STD
K	YES	ANAL I-100
M	NO	RERUN STD
M	YES	RERUN I-100
T	NA	I-100 ANAL
X	NA	Complete
7	NA	"LSD" Contents
8	NA	"LSD" Contents
9	NA	"LSD" Contents

TABLE 2-23.- CC-ANCIL-TOPO TABLE

<u>VALUE</u>	<u>STATUS WORD</u>
1	Await C/A/T
2	Await C/T
3	Await C/A
4	Await C
5	Await A/T
6	Await T
7	Await A
8	Complete

### 3. CHANGES OF SOFTWARE FUNCTIONAL DESIGN

#### 3.1 PREPROCESSOR, STEP 1 MODIFICATION

##### 3.1.1 DATA STATEMENTS IN THE MAIN PROGRAM OF STEP 1

Card type "T" should be added to the array of legal card types, IVCT. The dimension of IVCT must be increased, and the variable NVCT should be initialized to 20.

##### 3.1.2 NEW FUNCTION IUNLD

A function subprogram IUNLD will be added. It shall have the calling sequence:

value = IUNLD (image)

The input image is a card image, an 80-character array. The output value will be set to 0 if the card image is not an unload card, and set to 1 (type integer \* 4) if the image is an unload. If the image is an unload card, IUNLD will reformat it to the new "N" card format.

##### 3.1.3 SUBROUTINE CKTYLP

This existing subroutine will be changed to call function IUNLD if an input card image has failed to match any legal card type. A test of the value from IUNLD will decide whether to write the image out as having invalid type or to save it as a (now reformatted) "N" card image.

#### 3.2 PREPROCESSOR, STEP 2 MODIFICATION

The sort specification for the SRT utility sort of input cards into order by card type shall have types N and T inserted into the force on card type to put them into proper order with other types.



### 3.3 PREPROCESSOR, STEP 3 MODIFICATION

The N and T card types shall be added to the table IVTYP and the length of that table, NVTYP, shall be increased to 14. This will cause the default transaction date to be inserted into these cards.

### 3.4 MODIFICATIONS TO UPDATE RIMS COMMAND FILE, RM4.COM

The update command stream shall have two additional UP commands to assure processing of 21 separate card types (all legal card types except Q, plus the pseudo card type "Z" inserted by the preprocessor to mark "\*" (asterisk) cards which are the first of a "\*",2,3" set for a segment).

### 3.5 ASATS STANDARD DATA BASE UPDATES

This section describes the ASATS data base update processor. It also includes a description of an update command built specifically for ASATS and describes the use of input formats to specify processing for individual record types.

#### 3.5.1 SPECIAL UPDATE PROCESSOR

The Special Update Processor is a stand-alone program. It processes all standard ASATS updates. It accepts the following commands:

- BE -- Begin
- RF -- Reassign File
- UP -- Special ASATS update command
- EN -- End
- RE -- Reads processing description for ASATS cards

The construction of this Processor uses all standard RIMS commands except the main program and subroutine update (which processes the

UP command). The construction of this processor as a task separate from RIMS allows better core utilization, hence better system performance. Before executing any UP command, an RE command must be executed to read the process description cards which describe the processing for each status and tracking card type.

### 3.5.2 SPECIAL UPDATE COMMAND

Update data base from a set of input cards. Specific update operations are a function of card type (specified in the second character of each card), data base format, and the input format. The input format and the data base to be used are a function of the card type and LACIE phase.

#### Input:

- Commands: Processing is begun by a UP command
- Status and tracking input cards: Any of the current 21 types of ASATS update cards (except Q card) are processed sequentially until an EOF.
- EOF: Processing of an input file is ended by an end-of-file or a blank record on the input file.

Output: Besides updating the ASATS data base, the following information is recorded sequentially on a file:

- Rejected input cards
  - Cards for which the required DAPTS record does not exist (for \*, 2, 3, 4, 5, 6, B, N, and T cards)
  - Cards for which the required FLOCON record does not exist
  - Cards for which the FLOCON record has not reached required state for particular type of update
- Accepted input cards which created new DAPTS records
- Punch card images

Processing: The required processing is a function of card type. Card types are categorized as follows:

- Category 1 - card types \*, 2, 3 (in sets)
- Category 2 - card types \*, 2, 4, 5 and 6
- Category 3 - card type 3
- Category 4 - card type B
- Category 6 - card types N and T
- Category 5 - other card types

There is a generalized function for adding new records and updating existing records. This function, which is driven by input formats, data base formats, and card type, adds or modifies the specified record. The general steps of processing input cards are:

- Read input card
- Generate record ID
- Generate external (input) format ID from table
- Retrieve record
- Retrieve formats
- Either add or update the record(s).
- Output card image reflecting success or error

Figure 3-1 depicts the flow of this process and variations dependent upon category of card type.

Table 3-1 indicates the data used for generating a record depending on input category. The input format is a function of the card type. Table 3-4 indicates the action to be taken upon a record retrieval failure.

The input processing for all fields of each card type is as defined in the ASATS requirements document except for Segment Status Character in DAPTS records and Acquisition Status character

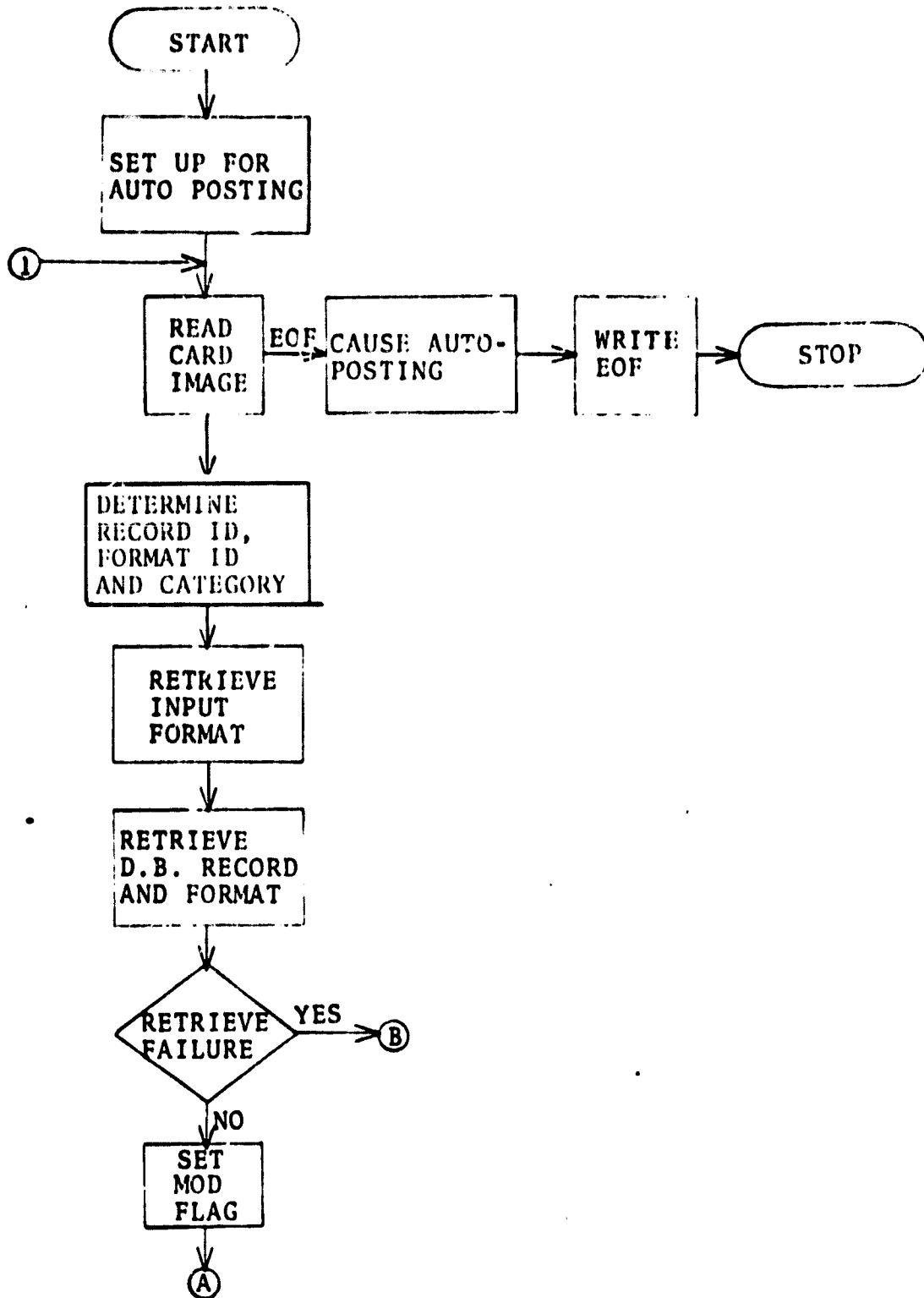


Figure 3-1.- Special Update Processor Flow.

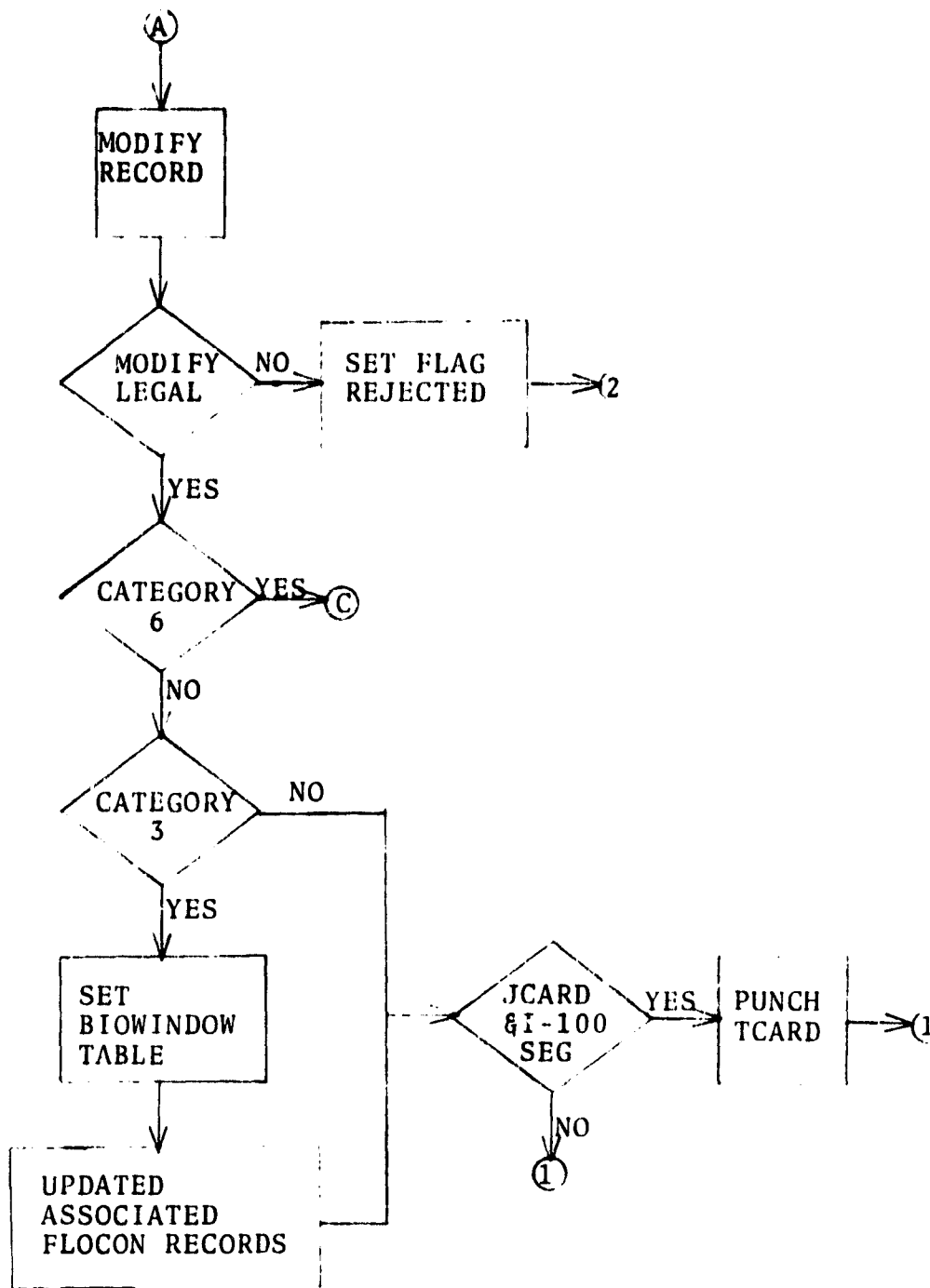


Figure 3-1.- Continued.

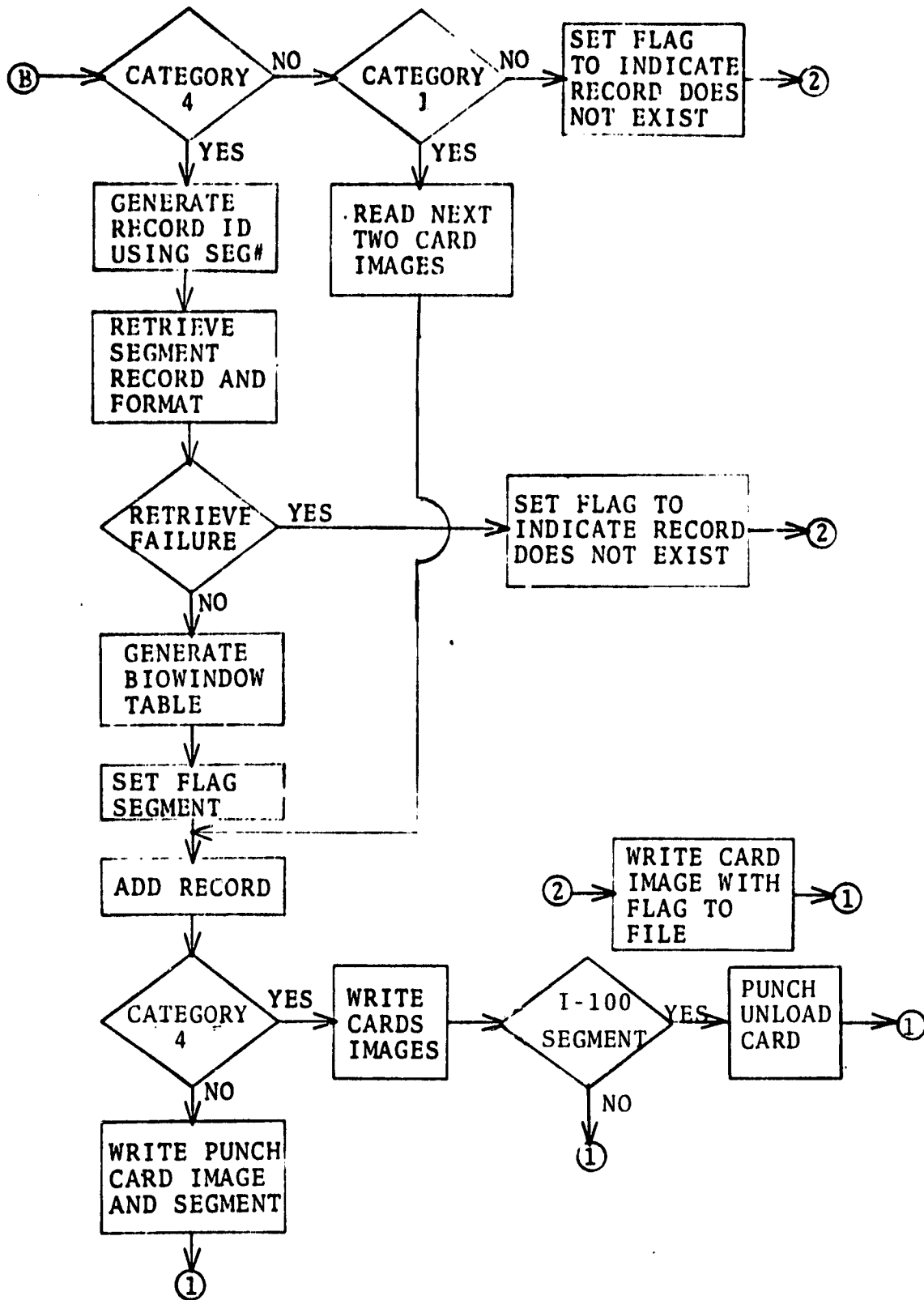


Figure 3-1.- Continued

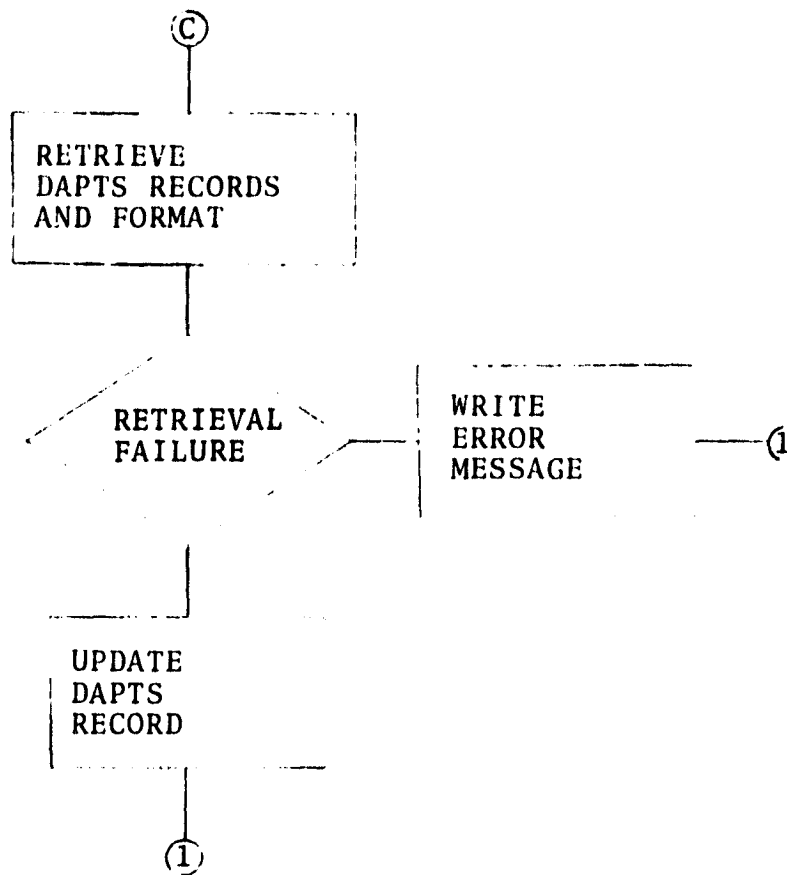


Figure 3-1.- Concluded.

in FLOCON records. The information from Table 3-2 is used to set the segment status character. The Acquisition Status Character is set to the card type. These fields are used for generating the current station and status.

The type of operation, an add or a modify, to be performed is a function of record type and whether or not a record already exists. The input format for the card type identifies the fields it updates and the field's data type. Table 3-5 describes the processing for field types on input.



TABLE 3-1.- SPECIAL UPDATE DESCRIPTION

Category	Method of Identifying Record	Action on Retrieval Failure	Generate Biowindow Table	Type of Operation	Additional Processing
1	SEG #	Success: Update (1b) Fail: Add		Add	
1b				Update	
2	SEG #	Fail: Generate Error		Update	
3	SEG #	Fail: Generate Error	Yes	Update	Set Biowindow Field in Acq. Records
4	SEG # & Acq. Date	Fail: 4B Success: Update		Update	
4b	SEG #	Fail: Generate Error	Yes	Add (Acq. Record)	
5	SEG # & Acq. Date	Fail: Generate Error		Update  Update	
6	SEG # & Acq. Date	Fail: Generate Error		Update (Both DAPTS & FLOCON	

If an error condition occurs when processing an input card, an error file unit number is put in column 2 when the image is written to the message file. The input card images for new DAPTS records are also written to the message file; in them, column 2 is the unit number for the new DAPTS record report file.

Additional processing required by category 3 is the selection of FLOCON records of the same segment and the updating of their biowindow fields.

### 3.5.3 USE OF INPUT FORMATS

An input format is required to describe certain processing associated with each record type. This description includes:

- Identification of each field affecting the update process
- Type identification of each field, which defines how the field affects the update process (see section 3.5.1).
- Starting location and length of each field of information on the data card (it should be noted that some fields affect the processing, but do not exist on the data card, therefore do not have a starting location and length).

The field names used must correspond to the field names used in the data base definition (see Tables 3-2 and 3-3). Field location and field use on input cards are described in the ASATS requirements documents and in the ASATS User's Guide.

Implementation using input format definitions allows for simple accommodation of most types of changes in input requirements. The addition of a new card type would require a modification of tables within the special update command processor. The B and 3 type input cards do have codes which are unique to them.

TABLE 3-2.— INPUT TRANSLATION TABLE FOR GENERATING SEGMENT  
STATUS CHARACTER

Existing value	Card type 4	Card type 5	Card type 6
0	1	2	4
1	1	3	5
2	3	2	6
3	3	3	7
4	5	6	4
5	5	7	5
6	7	6	6
7	7	7	7

TABLE 3-3.— USE OF DATA TYPES ON INPUT

<u>Data Type</u>	<u>Processing</u>
0	Alpha — update associated data base field as alpha
1	Integer — update associated data base field as integer (standard RIMS data type, but not used for ASATS)
3	Set data base field value from status table according to card type and existing value
4	Alpha but don't update data base when input is blank
5	Record I.D. field (no action)
6	Increment data base field value by 1 on input (Integer field)
7	Reject input if associated data base field is blank
8	Set data base value as a function of biowindow table and acquisition date

#### 4. MODIFIED PROGRAM DESCRIPTIONS

This section contains documentation of individual RIMS programs and subprograms as they will be revised. These descriptions add to or replace the descriptions in Section 7 of the ASATS "As-Built" Design Specification (document JSC-12743, April 1977).

**Name:** IUNLD

**Purpose:** To test for unload (UNLD) cards and reformat them into an "N" card.

**Linkage:**

- Calling sequence: value = IUNLD (image)
- Common blocks used: None
- Subroutines or functions used: None
- Files used: None

**Input Description:** The input array image is an 80-character ASCII code card image.

**Output Description:** The output value is a type INTEGER\*4 flag set to 1 if the image is an UNLD card, 0 otherwise. The array image is reformatted in place to the usual ASATS format.

**Process Description:** If the image does not match the string 'UNLD', set output value to 0 and return. If it does match, leave the 'N' in column 2, move the segment number from columns 10-13 to columns 4-7, move the acquisition date from 17-20 to 9-12 and insert a "3" in column 8. The tape number from columns 23-28 will be moved to columns 19-24. The transaction date field columns 14-17 will be left blank for insertion of the default date from the Q card, and the remaining unused columns will also be set blank.

**Name:** Update Processor Main Program

**Purpose:** To control execution of bulk update from ASATS cards.

**Linkage:**

- Execution: RUN ASATS
- Common blocks used: SYSCOM, PDT
- Subroutines or functions used: BE, REAF, CLOSEP, END, AULATE, ASN, RED
- Files used: U(14) is used for reading commands.

**Process Description:** Reload and interprets commands. Causes appropriate subroutines to be executed to process given commands. Acceptable commands are: BE, RF, RE, UP, EN.

**Name:** RED

**Purpose:** To read processing description for update card types and build processing description table.

**Linkage:**

- Calling sequence: CALL RED
- Common blocks used: /PDT/CTAB, FNO, RIDT, PTT
- Files used: Card images are read from unit 12.

**Process Description:** Card images are read until a blank card type is encountered. Table 4-1 illustrates format of cards. The results of the card images are stored in CTAB (card type table), FND (format number), RIDT (record ID type), and PTT (processing type table).



TABLE 4-1.-- PROCESS DESCRIPTION CARD IMAGE FORMAT

<u>Field</u>	<u>Columns</u>
Card Type	1
Input Format	2-4
Record ID Generation Type	5
Processing Category	6

**Name:** AUDATE

**Purpose:** Updates data base from set of input cards. Specific update operations are a function of card type (specified in second character of each card) and the processing description for the card type. The input format, data base format and process category to be used for the card type are specified in the Process Description Table.

**Linkage:**

- Calling sequence: CALL AUDATE
- Common blocks used: SYSCOM, SYZCOM, PDT
- Subroutines or functions used: GETREC, LODFMT, AUREC, CHFLD, APSINT, AUPOST, APSTUP, SUBSTR, KOMSTR, APSCNT, SETOUT, XXOUT, ENDAT, GETCLD
- Tables used: Processing Description Table (PDT) which contains card type versus type of record ID generation and the category type table. The bio-window table from segment record.
- Files used: Units 1, 2, 3, and 4 are updated. Units 5, 6, 9 and 10 are scratch files. ASATS cards are on the RIMS data file. The RIMS message file is used for ASATS postprocessor data.

**Input Description:**

- Command: Processing is begun by a UP command.
- Status and tracking input cards: Any of the 21 types of ASATS update cards (except Q card) are processed sequentially until an EOF.

**Input Description:**  
(continued)

- EOF: Processing of an input file is ended by a blank card (inserted by the preprocessor) or by actual end-of-file.

**Output Description:**

Besides updating the ASATS data base, the following information is recorded sequentially on a file.

- Rejected input cards
  - Required DAPTS record does not exist (for \*, 2, 3, 4, 5, and 6 cards)
  - Required FLOCON record does not exist
  - FLOCON record has not reached required state for particular type of card.
- Accepted input cards which create new DAPTS records.
- Punch cards.

**Process Description:**

The required processing is a function of card type. Card types are categorized as follows:

- Category 1 - card type 2
- Category 2 - card types \*, 2, 4, 5, 6, and T
- Category 3 - card type 3
- Category 4 - card type B
- Category 5 - other card types
- Category 6 - N card

A generalized function for adding new records and updating existing records will

Process Description:  
(continued)

exist. This function, which is driven by input formats, data base formats, and card type, will add or modify the specified record. The general steps of processing input cards are as follows.

- Read input card
- Generate record ID
- Generate external (input) format ID from table
- Retrieve record
- Retrieve formats
- Either add or update record (or both in case of "N" card)
- Output card image reflecting success or error

Figure 3-1 depicts the flow of this process and variations dependent upon category of card type.

Record ID is generated from either segment number or segment number and acquisition date, depending upon the table specification for the card type.

The type of operation, an add or modify, to be performed is a function of the category for the record type and whether or not a record already exists. The input format for the card type identifies the fields it updates and the field's data types.

Table 3-3 describes the processing for field types on input. The processing of

Process Description: individual fields is transparent to this  
(concluded) routine (it is performed by AUREC).

If an error condition occurs when processing an input card, an error type is put in column 2 when the image is written to the message file. The input card images for new DAPTS records are also written to the message file; column 2 for them is the logical unit number for the DAPTS record file.

Additional processing required by category 3 is the selection of FLOCON records of the same segment and the updating of their biowindow fields.

**Name:** TFORM (normal version)

**Purpose:** To transform data from one format to another format.

**Linkage:**

- Calling sequence: CALL TFORM(I)
- Common blocks used: SYSCOM,UPDCOM
- Subroutines or functions used: SUBSTR, VERIFY, INPARM, CHAR
- Files used:

**Input Description:**

- UPDCOM/BIOTAB, FLAG type of card being processed
- I is the source record
- /SY2COM/Buf contains input record
- /SY2COM/Buf contains output record
- /SY2COM/FMTID contains format ID's
- /SY2COM/length contains record lengths
- /SY2COM/MOVTAB contains pointers to fields of each record
- /SY2COM/NMOV is the number of fields to be transformed
- /SY2COM/FMT contains formats for both records

**Output Description:**

- SY2COM/buff contains the resulting record
- /UPDCOM/FLAG contains reject indicator

**Process Description:** The resulting record in the target buffer is constructed by moving data into a specified field. Data is moved according to the output type as follows:

- Output type 0 is a straight move of characters from the source buffer to the target buffer.
- Output type 9 moves data from the CC-ANCIL-TOPO table to the target buffer based on the source buffer value.
- Output type 5 moves data from the Film Products table to the source buffer value.
- Output type 4 moves data from the Computer Products table to the target buffer base on the source buffer value and the status (whether it is blank or not) of the "N" field.

Figure 4-1 depicts the program flow. Table 2-21 reflects the use of the film status table. Table 2-22 reflects the computer products status table. Table 2-23 reflect the CC-ANCIL-TOPO table.

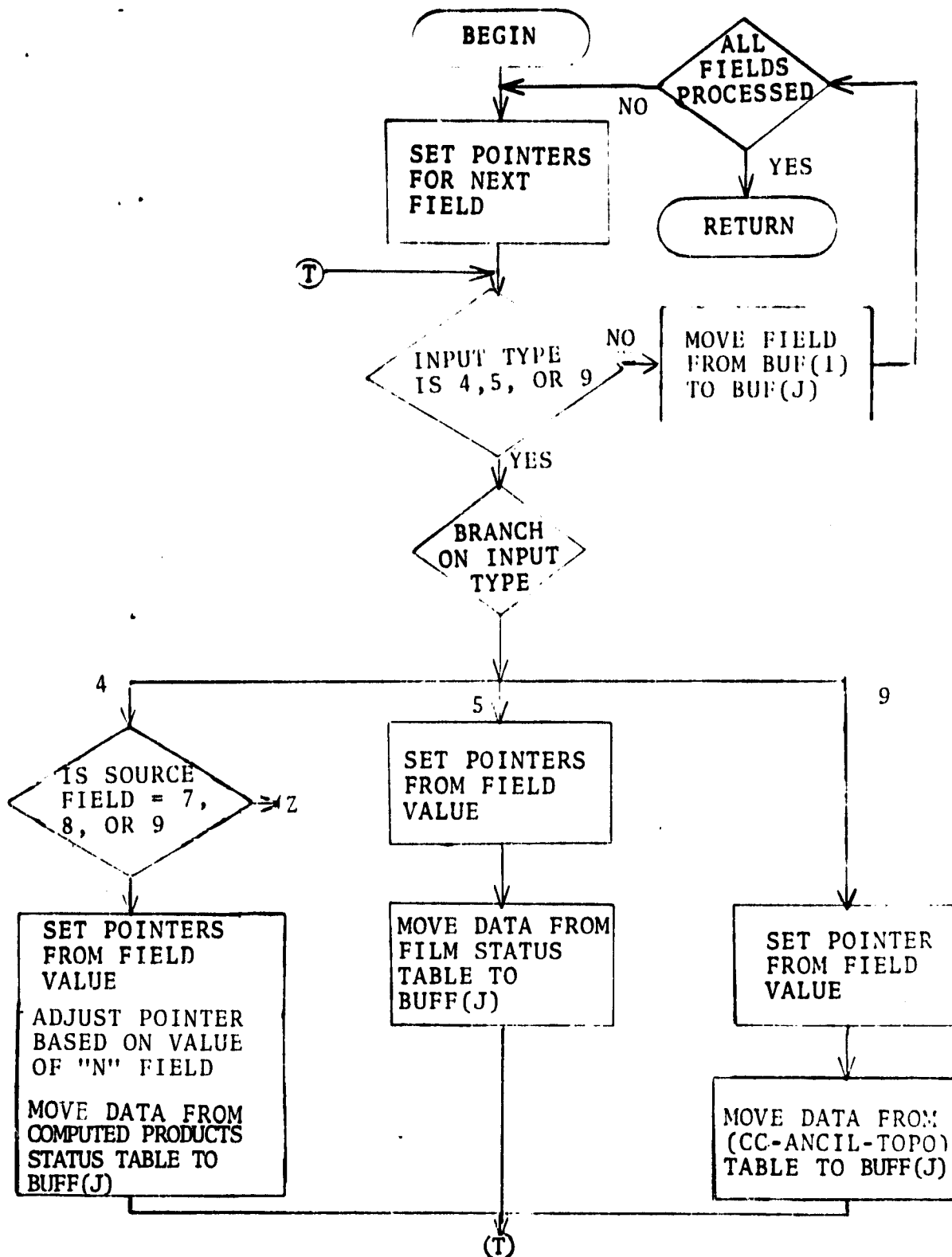


Figure 4-1.- TFORM for Normal Rims.



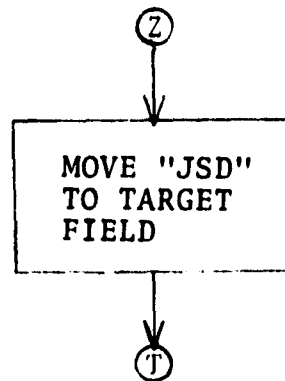


Figure 4-1.- Concluded.

~~4-13~~  
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