ADMINISTRATION IN ARCHITECTURE

ACKNOWLEDGMENTS

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10 April 1951

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Dear Dean Little:

This report constitutes my thesis entitled "Administration in Architecture."

This thesis is submitted as partial fulfillment of the requirements for the degree of Master of Architecture.

Sincerely,

HLS:bb   Harold L. Sleight

FOREWORD

This program of study was born of ideas advanced in conference with the Chancellor of the State System. The chancellor, an able administrator himself, recognized the lack of, and the need for, administrators in the field of architecture.

In times of emergency, or even in the normal course of events, architects may be called upon to become administrators. They may in times of emergency be asked to devote their talents to large government undertakings, the proper execution of which would depend largely upon their ability to administer the project. It is also possible that in the normal pursuit of his profession the architect may find his office staff growing to a sizable number. This would demand that in order to preserve the standard of quality of his work and to ensure financial gain, the architect must be able to cope with the accompanying problems of administration. This thesis was undertaken to study this need.

It was recognized at the outset that this type of problem was a radical departure from the usual procedure. This departure had its drawbacks, but also its advantages. The very fact that there was no set curriculum to follow, and no source of pat information, forced inquiry into many outside fields of study. This permitted the establishment of a broader base of education rather than the further vertical extension of training.

It was felt that, rather than doing another design problem along the same lines as those followed in pre-graduation study, this problem would stress the aspect of administration. The design problem in this case is not the key, but merely the vehicle.

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ADMINISTRATION

ITS BASIC PRINCIPLES AND PROBLEMS

Since the dawn of the history of man the art of administration has been one of the essential possessions. Building the pyramids was an administrative achievement of the first order, as well as a remarkable technical accomplishment. Organizing the national state out of the chaos of Feudalism and creating national armies from the ranks of partisan nobles were administrative as well as political feats. Despite great differences in culture and technology, the process of management throughout the centuries was inherently the same as that which now makes feasible great business enterprises, continental systems of government, and the beginnings of possible world order.

Administration is a process common to all group effort, public or private, civil or military, large scale or small scale. It is a process at work in a university, a bank, a city government, or an architect's office. Although it varies in form and objects, and although the administration of public and private affairs differs at many points, there is an underlying similarity, if not identity, in the process wherever observed.

ADMINISTRATION

Defined in the broadest terms, administration consists

of all those operations having for their purpose the ful-
fillment or enforcement of policy. This definition covers
a multitude of particular operations in many fields - the
zoning of land for a particular use, the delivery of a
letter, the delivery of a letter, the choosing of a building
module, the sale of public land, the use of atomic energy,
and the decision upon a structural principle. The conduct
of affairs in an advanced civilization may require the em-
ployment and coordination of almost any profession or craft.
The art of administration then, is the direction, coordina-
tion, and control of many persons to achieve some purpose or
objective. It is the art of collecting the human and physi-
cal resources of an organization and directing them toward
the achievement of some required goal. It is an art that
pervades all levels of organization, binding together the
many professions, crafts, and specialties whose contribu-
tions, although equally necessary, are not those of manage-
ment.

An administrator is consequently one who directs,
coordinates, and controls the activities of others. There
are administrators in all human activities except those
capable of being executed by one person. The specific tasks
of an author, an artist, a philosopher, or a salesman are
wholly personal. They do not involve the art of administra-
tion.

Although not a student of administration, Brooks Adams, in his book "The Theory of Social Revolutions" caught its essence. "Administration," he wrote, "is the capacity of coordinating many, and often conflicting, social energies in a single organism, so adroitly that they shall operate as a unity." This presupposes the power of recognizing a series of relations between numerous special social interests, with all of which no man can be acquainted. Probably no very highly specialized class can be strong in this intellectual quality because of the intellectual isolation incident to specialization; and yet administration, or generalization, is not only the faculty upon which social stability rests, but is, possibly, the highest faculty of the human mind."

Henri Fayol, the leading French exponent of scientific management, made the following interesting statement about the art of administration. Many of the failures to conduct large combinations successfully may be traced to lack of administrative knowledge in men who have been highly successful in charge of smaller concerns, that is, in positions demanding a relatively larger proportion of technical capacity. A man with high administrative qualifications who has never been inside a steel or biscuit works may succeed. A man with all the knowledge of biscuit making in the world, but who lacks the requisite level of administrative knowledge and capacity will certainly fail.

A "professional administrator" appointed head of a
large concern or agency, but lacking technical knowledge
in its specialized field of work, could operate success-
fully provided he had sound advice from specialists on
technical policies. Even if an administrator is an organi-
zation and management specialist, as well as a technician,
he will never have enough time to do both.

The administrator must realize that he is not omni-
competent, and that there are limits, imposed by lack of
knowledge, upon his ability to administer. The greatest
single problem of the administrator is how to gather together
all the available information on any considered problem.
It is the responsibility of the administrator to see that
all conditions or people involved are considered so that
decisions may be properly made. The various aspects of an
administrative problem--business, technical, social, etc.,
cannot be separated. One is faced with the whole problem
and the quality of the administration depends upon the
grasp of the whole.

The administrator must always remember to work with
people. He must accept the fact that few of his results,
at least few that are worth while, will be peculiarly or
exclusively his own. While he may sketch out the first
draft of a plan of organization or a procedure, the final
result will usually be a synthesis of ideas gathered from

operating officials, plus those of his own which stand up under criticism. He should not, of course, attempt the impossible task of trying to secure complete agreement from everybody. He should be quick to recognize and discount obstructionism. But, as a rule, the wider the participation in shaping a plan, the easier it will be to put it into effect.

LEADERSHIP AND DECISION MAKING

A good administrative organization is one which, among other things facilitates the making of decisions which are responsive, so far as the choice of values is concerned, to the general interest; ones which are correct, in the sense of being conducive to the greatest achievement of prescribed ends with limited means.[1]

Leadership and the capacity to make decisions are inextricably bound up with each other, although the concepts are by no means the same. The import of these matters on the process of administration was admirably stated before the British Royal Commission on the Civil Service in 1929. "The business of government, if it is to be well done, calls for the steady application of long and wide views to complex problems; for the pursuit, as regards each and

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[1] White, Introduction to Public Administration

every subject matter, of definite lines of action, mutually
consistent, conformed to public opinion and capable of being
followed continuously while conditions so permit and of
being readily adjusted when they do not. Almost any adminis-
trative decision may be expected to have consequences which
will endure or emerge l ng after the period of office of the
government by which or under whose authority it is taken.
It is the peculiar function of the Civil Service, and the
special duty of the Administrative Class of that Service,
in their day-to-day work to set these wider and more en-
during considerations against the exigencies of the moment.
Vacillation, uncertainty, and inconsistency are conspicuous
symptoms of bad administration."

The management of business requires action. Adminis-
trators in high positions must have a sense of action and a
capacity to make decisions. Executives at lower levels also
must possess the ability to reach decisions and see that
they are carried through to accomplishment. Business has
to be done. The process of making decisions varies from
person to person. Some find it easy and natural; others
find the hazards of decision-making so great as to paralyze
action. Observations in government and industry lead to the
opinion that capacity to make decisions grows with experience
and can be consciously cultivated.

Situations calling for decisions may be initiated for

consideration at either the top or bottom of the organization hierarchy. Matters of importance, even though initiated at the bottom, are referred to the top for consideration.

Decision-making is concerned both with ends and means. The determination of broad ends or broad objectives requires value judgments. The determination of the means to secure ends requires primarily decisions of a factual nature, although value judgments may enter. The means agreed upon in turn become ends for those who are charged with their execution. Thus decisions relating to ends require the attention of the upper hierarchy, those relating to means, being secondary, are the concern of lower executives.

The ends with which decision-making is concerned are those of the organization, not of the individual. The individual, having made a personal decision to become a member of the organization, thenceforth should subordinate his personal ends to those of the organization. The broad types of decisions made for the individual by the organization are to specify his function, to allocate authority--to decide who is to make further decisions for the individual and to set such limits to his freedom of action as are necessary to coordinate the activities of one with others.

THE SOCIO-PSYCHOLOGICAL ENVIRONMENT--HUMAN NATURE

Administrative procedure is, among other things, a pattern of human behavior and, therefore, hard to change.[1]

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[1] Glaser, Administrative Procedure

Men may readily trade in their automobiles, and sometimes
even their wives, but they cling to their habits. They hate
to be reorganized. While an administrator may become con-
vinced that a rearrangement of functions and personnel is
essential, he may have a long struggle to convince his
operating chiefs. Of course, he may simply order people
about in spite of objections; however, if he is wise, he
will not do this, as he will want subordinates to work with
him and for him, and not merely under him.

Resistance to change is a deep-seated instinct, arising
from centuries of uncomfortable experience with changes. It
is largely a common sense instinct, since it inhibits men
from rearranging their lives without prospective gains suf-
ficient to offset the costs of adjustment. In administra-
tive organizations resistance to change is bound up with a
variety of motives such as fear of losing one's job, dislike
of moving into strange situations, and the desire to entrench
and enhance one's position. These are perfectly normal
sentiments. Yet sometimes, as in the mass-psychology situ-
ations which often exist in offices, particularly those
conscious of inadequacy or superfluity, they lead to a
peculiar group sensitivity to outside stimuli and cause ir-
rational responses. There are units which, at the approach
of an investigator or personnel classifier, fall into panic.
Wild rumors of wholesale dismissals get started and work
becomes totally disorganized for no real reason.

The instinctive reactions of individuals and groups sometimes hamper the administrative analyst in securing work-load data, and occasionally prevent him from finding out even what offices do. If an administrative analyst should, through mischance, place an operating unit on the defensive, it will make superhuman efforts to prove the necessity of each of its tasks and to dig up every conceivable reason why each should be done exactly as at present. This makes it impossible to properly evaluate the work situation. Because prestige is thought to be related to the number of subordinates, unit chiefs do not like to give out workload information if they think it will lead to reduction of their forces. For the same reason they resist simplification, hoping that recognition of the difficult work they do will lead to reward. From an objective point of view, jobs can be best protected and individuals most easily advanced in accordance with their merit if the organization is flexible and working methods efficient.

To sum up, consideration of the socio-psychological environment of administration means recognizing the human factor in every administrative problem,[1] and studying the way in which people respond to situations as individuals and groups. It has been discussed here in terms of the relations between management and the employees, but much of

[1] Gaus White & Dimmock, _Frontiers of Public Administration_

what has been said can be applied, in slightly different terms, to relations with the public. The main point is that an administrative organism is not a machine composed of inert elements to be tinkered with at will, but a collection of individuals, each of whom reacts in his own personal way to the situation with which he is confronted.

ADMINISTRATIVE PROCEDURE

Administration has various phases, of which the most important are: planning---deciding what is to be done; execution---giving orders, instructions, and supervision; and control---seeing that the work is actually done according to plan. These phases are basic, existing even in simple administrative relationships. They become complex when large numbers of people are involved. There is also the problem of coordination, or seeing that individuals do not work at cross purposes, which extends into all phases of administration.

A fundamental distinction is that between the purpose and the process of administration--between the direct work which is being undertaken and the business of managing it.[1] It is the difference between what you administer and how you administer it; between program and procedure. An administrator cannot give all his attention to his direct activities

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[1] Glaser, Administrative Procedure

and let his organization run itself. Both must be managed.
The job of administering involves both direct administration—
determining what shall be done---and administrative manage-
ment----determining how it shall be done. In both cases
determination or planning is followed by execution and control.

ADMINISTRATIVE MANAGEMENT

There are two distinct fields of administrative leader-
ship: direct, or program, administration, which deals with
the purposes of administration; and administrative, or pro-
cedural, management, which deals with its processes. Direct
administration deals with what is to be administered. It
formulates basic programs and policies, gives the orders for
executing them, and exercises controls to assure the desired
results. Administrative management deals with how the pro-
gram is to be administered. It plans organizational struc-
ture and the division of work, and it arranges the routes
for administrative business.[1] Administration is the respon-
sibility of line and staff officers, and on the top level
the head of the organization. All line and staff officers
should be primarily experts in the subject matter they are
administering. The visible result of administrative manage-
ment consists, for the most part, of written procedure—
plans of organization, regulations, and instructions for

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[1]Glaser, Administrative Procedure

routing business and doing specific jobs. This procedure
should be consistent and based on objective analysis of
administrative problems.

THE SCIENTIFIC APPROACH TO ADMINISTRATION

The study of administration in an exact and, so far as
possible, scientific way is comparatively new. It is a
stepchild of the "scientific management" school in industry
developed by Frederick W. Taylor. Some of Taylor's fol-
lowers carried his techniques, which were originally developed
to deal with machine operations, into the field of "office
management" the planning and supervision of clerical work.[1]
The step from here to scientific management of administra-
tion is not an easy one. Instead of manual operations or
routine clerical work, we must deal with brain work and
the making of discretionary decisions. The essence of
administrative work is its variability; no two problems are
the same. Therefore it is almost impossible to apply the
principle of scientific management to administration.

ADMINISTRATIVE DISCRETION

"Administrative discretion," as Laski has said, "is
of the essence of the modern state." This is not only true
of public administration, but of the field in general.

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[1]Glaser, Administrative Procedure

The term "discretion" is used in two different senses. Frequently it suggests prudence, discernment, judgment--- what may be called self-limitation. Again, the word clearly conveys the meaning of liberty to choose between alternatives.[1] Discretional acts of the ordinary type occur so frequently and so naturally that we usually give them little consideration. Yet, from the standpoint of the administrator, these undisputed exercises of discretion are of the most vital importance. In order to get a realistic view of discretion, we must see the whole picture-- including the unnoticed species of discretion, as well as the kind that attracts popular attention.

Various levels of discretion may be distinguished, depending primarily upon the type of public business being conducted. There may be said to be routine, emergency control, and social-conflict situations which call into being discretionary power. This is not a final, but suggested classification of discretionary situations, and seems to cover the principal types of administrative activity.

The most common level of administrative discretion is that which is tied up with routine duties. Where the organization is a large one and performs a service in which relations with the public are very close, the number of discretionary problems arising in the daily routine is

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[1] Gaus White and Dimmock, Frontiers of Public Administration.

naturally very large. In cases of this type, discretion is a matter of long experience, amounting almost to intuition. Where it is possible and practicable, rules should be laid down, but minor discretions inevitably remain.

In the case of an emergency, the necessity and freedom of administrative discretion is more clearly recognized than in any other case. In an emergency situation speed is the essence of the matter. Hence a combination of experience, instinct, and judgment may be the only restraint upon the official in determining a course of action.

It is usually true, as a general proposition, that higher officials are granted more room for discretion than are minor officials. On the other hand, it would not be true to say that discretionary power is in direct ratio to rank. The amount of discretionary power falling upon minor officials may, in some cases, be quite impressive.[1] Indeed, it should be. In times of emergency or in the absence of superior authority, it is to the best interests of the organization for the minor official to be able to exercise the necessary discretionary powers.

Experience in government has shown that democratic management is better management. Since authority to execute must be delegated and redelegated to many levels, it is

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[1] Gaus White and Dimmock, _Frontiers of Public Administration._

necessary to delegate also the desire for efficient accomplishment which in a small plant may be translated into specific task instructions by a single manager. This can only be done by giving operating officials and workers all the way down the line their share in influencing the functioning and growth of the organization. It is important to cultivate the feeling of proprietorship, so that employees will, of their own accord, think about better ways of doing their jobs as individuals and groups, and so that they will welcome changes which improve production.

CENTRALIZATION VERSUS DECENTRALIZATION

Concentration and devolution are two primary manifestations of administrative power. When the first is dominant, the central authority tends to exercise greater and greater control over subordinate units, often snuffing out intermediate offices in the process. The power of subordinate executives is transferred upward, with the result that they are reduced to the status of clerks since they must await approval before doing anything,[1] a present example of which is the Russian Diplomatic Corps.

Concentration of authority is frequently self-defeating, because the central official may become so snowed under with

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[1] Glaser, Administrative Procedure.

telephone calls, visitors, and other minor administrative tasks, that he cannot perform his proper function. There is a natural reaction to this in the opposite tendency toward decentralization---the natural desire of subordinates to operate with a minimum of interference. Extreme decentralization may lead to duplication of work and often to conflict should there be no strong central policy.

There is no "one best" degree of concentration of authority which will fit all organizations. The proper adjustment always depends on a number of factors, including the nature of the work administered, the environment, physical as well as social, in which the organization operates, and, particularly, the caliber of the personnel. In each case the administrator must judge the amount of centralization necessary on the basis of existing conditions. It is better to err in the direction of decentralization, as it is easier to set up administrative controls than it is to remove them.[1]

PLANNING

Sir Henry Bunbury, a British political scientist, has defined planning as follows. "The words plan and planning refer to the processes which are entailed in giving conscious direction, order, and harmony to the economic and social

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[1]Glaser, Administrative Procedure.

activities of a community, or to any particular group or range of those activities. The essentials of those processes are a knowledge and understanding of all the relevant facts, in relation to some definite objective deliberately chosen, as a necessary foundation for coordination and continuity of action."

Planning falls into two major classes, long-range planning and program planning. Long-range planning is concerned with the aims of the organization, which are to be reached over a long period of time. It sets the goals which the basic policy of the organization seeks to achieve. Long-range planning also takes in the study of, and preparation for, phenomena such as the business cycle. An example of long-range planning might be the Russian Five Year Plan, or the Tennessee Valley Authority. To the extent that policy is left unsettled by positive administrative direction, long-range, or policy planning and program planning may overlap. In general though planning, in the context of administration, begins where general policy stops, it is concerned with the means by which ends can be achieved. Program planning falls in a different level of operations, one in which policy has been established by the administrator, leaving unresolved the steps to be taken to bring policy into achievement. Program planning is both less dramatic and less controversial. It is in some measure universal. Its broadest

application arises when an entirely new branch or area of administrative activity is organized. The customary implication of program planning is the recurrent study and formulation of operations on the basis of established policy and organization.[1]

Program planning is a normal, inevitable phase of large-scale management, public or private. It is concerned with the determination of the specific steps to be taken to put in operation and bring to fruition a policy already agreed upon. To the extent that the policy decision is ambiguous, or vague, or administratively unfeasible, program planning may actually affect policy; in principle its purpose is merely to affect policy through the most economical use of resources.

Program planning is involved with the detailed study of the job to be done, leading to the identification of its principal parts and their divisions and subdivisions, the relations between them, the boundaries of each in regard to the others, and the types of procedures that will be required. This is a visualization of the whole operation, often occurring before any part of it has taken physical shape.

Program Planning is concerned with various phases of administrative activity. The first phase is concerned with

[1]White, Introduction to Public Administration.

decisions as to the overhead organization and the administrative departments needed to take charge of the different parts of the program, as visually set out in an organization chart.

The second phase is an estimate of volume, which will usually depend upon external factors. Program planning is intimately concerned with estimates of volume, since volume affects structure and the division of work, budget, personnel, the appropriate forms of control, and other aspects of management. In a going concern, estimates of volume rest largely on experience; in a new agency, or in a new program, the guess on volume is a complex operation.

A third phase of program planning is concerned with staff. It is necessary to foresee what different kinds of skill and experience are needed, and how many employees of each kind. The process begins normally with the consideration of middle management personnel or heads of the various areas of activity. Then the operating staff has to be estimated; technicians of various types, staff for the auxiliary services, experts to aid middle management. Determination of numbers at the level of rank-and-file operations usually is based on an estimate of unit productivity.[1]

Another aspect of program planning is the forecast of

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[1] White, Introduction to Public Administration.

the shifting rate of flow of work. Some operations are
relatively constant, others vary with the seasons, and still
others with the course of business. These variations have
to be calculated as well as possible and plans laid for the
adjustment of staff, or for the adjustment of work, where
feasible, to fill in the valleys between peak loads.

Planners are also concerned with timing in the sense
of organizing work, so that its various parts flow in a
sequence that permits full use of resources and the avoidance
either of lost motion or lost time. The most perfect example
of timing is found in industrial operations that lend them-
selves to an assembly line; back of the line itself is a
whole series of related operations designed to deliver the
necessary parts at the proper point at the right moment.
The procedure is applicable to many administrative operations,
especially those primarily concerned with paper work.

These are not all the activities that might properly
be described as program planning. They are, however, normal
aspects of the management of large enterprises. They are
inherent in the process of administration.

COORDINATION

"The good administrator," Sir Henry Bunbury once said,
"has an instinct or habit of coordination. Without skill
in this part of his job he might better retire from the field,
for the task of coordination is universal, complex, and

never ending. It is an integral part of the flow of events
and the development of situations, and involves vertical
and horizontal relationships."

Though the task of coordination is universal, it is
not the whole of administration. Coordination has been
called the first principle of organization, and viewed in
this light all other principles are simply the means by
which coordination operates.

To coordinate is to bring about the consistent and
harmonious action of persons with each other toward a com-
mon end. There is a coordination in space and a coordination
in time. The assembly line is a technically superior type.
An orchestra is one of the most perfect human achievements
in coordination. To secure an adequate degree of coordina-
tion in large organizations requires sound structure, skill-
ful management, and a wholesome sense of cooperation widely
held at all levels of work.[1]

The more complex matters are, the more coordination
there must be. In a small organization doing a variety of
tasks there is not the necessity for coordination that
exists in a large organization performing more standardized
functions. In a large organization the complexity and range
of administrative operations could become so great as almost

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[1]White, Introduction to Public Administration.

to baffle the human mind. Such a condition would demand
more and more coordinators, until the question might be
asked, who will coordinate the coordinators. Such a con-
dition would be evidence of administrative weakness and
demand extensive reorganization.

Even in a simple organization there is no way of di-
viding functions and allocating duties so that it is really
self-contained. The fact of multiple interests in a single
matter or in a single area is inescapable, and is the
foundation of their coordination.

The business of coordination is concerned with policy,
with program, and with personalities. Its achievement may
require the most delicate insights, the most mature wisdom,
and perception of a truly artistic quality. Part of it is
facilitated by effective organization as such. Much of it
depends on the rapid appreciation of events and situations
and skillful adaptation to them.[1]

The means of coordination begin with structure, organi-
zation, and communication. An organization characterized by
clear lines of authority, adequate powers, well-understood
allocation of functions, absence of overlapping and dupli-
cation of effort, and proper delegation of work in itself
reduces the necessities of coordination. Conversely, a

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[1]White, Introduction to Public Administration.

poorly organized body requires more and more supplementary means to make it work.

Means of coordination are required at all top and intermediate levels of organization. Perhaps the most difficult phase is the coordination of various departments in relation to common responsibilities. In a simple organization, such adjustments can be made by appealing directly to the administrator. In a large organization this can still be done, and occasionally must be done, but resort to the administrator must be more exceptional.

There are some institutional forms through which coordination may take place, such as staff meetings, joint committees, and individual conferences. It has been found that if these means are fully exploited, from the top to the lower echelons, the results will be a greater degree of understanding of organization, duties, responsibilities, and relationships. This makes for a greater sense of personal participation, which in turn produces an improved morale.[1]

These institutions are valuable and necessary, but in themselves they cannot produce the smooth working operations that symbolize good administration. Coordination is dependent upon a receptive and responsive personnel, convinced of the ability and fairness of its leadership, free from insecurities

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[1] White, Introduction to Public Administration.

and pressures, and sustained by skillful supervision and management.

ORGANIZATION

Organization is frequently thought of in such a way as to imply a mechanical, non-human quality. But the human beings who are the units of an organization are supposed to act in accordance with some predetermined objective standard so that their subjective desires and wishes will not interfere with the ultimate attainment of the purpose of the organization.[1]

Organization is sometimes viewed as a limitation—occasionally a necessary limitation—upon the freedom of the individual who is a member of or who is otherwise affected by it. Organization is the arrangement of personnel for facilitating the accomplishment of some agreed purpose through the allocation of functions and responsibilities. Each member of the organization must have as good a comprehension as possible of the relationship of his particular function and responsibility in the organization to the ultimate purpose if his work is to be done intelligently and effectively.

It is important for each individual to know his function and responsibility in the organization so that there will

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[1] Gaus White and Dimmock, Frontiers of Public Administration.

be no uncertainty and hesitation in the integration of his
actions with those of the other members of the organization.
It is also important from the point of view of the morale
of the organization that he have some sense of being a part
of the total organization through having a pride in the
purpose which it serves and a right to participate in de-
termining the way in which that purpose may best be achieved
so far as the area of his own responsibility is concerned.[1]
It is for this reason that the most successful administrator
is revealed as one possessing leadership in the sense that
he effectively wins the active consent and support of a
substantial part of the members of his organization.

Since organization consists of people brought into a
certain relationship because of a humanly evolved purpose,
it is clear that it should be flexible rather than rigid.
There will be constant readjustments necessary because of
personalities and other natural forces and because of the
unpredictable situations confronted in its operation. This
flexibility is complementary to the very nature of the or-
ganization, namely the achievement, through collective effort,
of some purpose or objective which a number of persons have
evolved.

Preliminary to any physical organization of people is
the work of organizing their activities on paper. Man being

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[1] Gaus White and Dimmock, _Frontiers of Public Administra-
tion._

a rational animal, this placing of people in charts or graphs is an attempt to arrive at a rational picture of their activities. This itself is an abstraction and because it must be so, the human element is thereby minimized. Thus these people being organized are as elusive as Adam Smith's "economic man"---they are a norm that does not exist. For this reason organization charts must be seen as a means and not an end, for the human equation may produce an entirely different picture within the proposed framework of organization.

As Paul Appelby says in his book BIG DEMOCRACY, "The process of administration--especially large-scale administration--is the process of moving matters up and down, to and from successive levels of abstraction. There is no more difficult problem than that of getting at the highest level persons sufficiently broad in their perceptions and with enough capacity for the abstract to deal effectively with the issues that require to be settled at that level."

SPAN OF CONTROL

A branch of organization, but worthy of separate consideration, is that administrative policy known as "span of control." It has been found in both the military and in business that a limit must be placed upon the "attention" of the administrator. As an organization grows more refined and complex, it tends to become ineffective because too many

auxiliary and line units are reporting to the person or persons with the function of central coordination, whose span of attention and of control would thus become too far extended for wise decisions. It is the function of the general administrative staff assistants to prevent this by canalizing the reports and communications of the numerous line and technical staff officers into fewer channels.[1]

This "span of control" is not a new idea, history having accredited Moses with the idea. Moses organized the officers of his army into leaders of tens, leaders of fifties, leaders of hundreds and leaders of thousands. Thus to administer a thousand men, his span of attention or control was limited to one man. Though the importance of this administrative technique was discovered long ago, its importance is still felt today. The Hoover Report, on the reorganization of the Federal Government, recommended that the office of the President be reorganized so that adequate staffing could bring within reasonable bounds the span of attention of the President.

COMMUNICATION

The area of communication plays over the whole range of administration, internal and external. It is direct, simple, and informal in a small office comprising a few

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[1] Gaus White and Dimmock, Frontiers of Public Administration.

employees, but in a large organization it becomes necessarily more indirect and formal at the same time that it becomes more essential. In a small establishment the barriers are few; in a large one the factors of dispersion and administrative distance tend to interpose handicaps to the transmission of intelligence and even more of spirit and understanding. The problem has its footing both in psychology and in mechanics.[1]

Effective communication must begin with the possession of something important to communicate. It is of course necessary to transmit a vast number of unimportant matters. Their management is not of high significance, although their transmission should be prompt and decisive. The quality of any association of men depends in the long run on the quality of its leadership; if its leadership has nothing to communicate group spirit fades and the capacity to achieve disappears.

The process of communication is, however, a two-way stream of traffic. What needs transmission is not only an instruction but understanding and response. The upward flow of ideas is equally important, but it depends fundamentally on the attitudes and spirit which must flow downward to release the potential response from below. Middle management and the rank and file will not generate much flow

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[1] White, Introduction to Public Administration

of fruitful communication upward until they have the sense of security and stimulation that must come from the top.

The traditional media of communication are two; oral discourse and the written document. They may be supplemented by demonstration and visual presentation. Technology has enormously expedited the process of communication. Today, by means of the long distance telephone, telegraph, and radio, executives may communicate with almost any part of the world. This conquest of distance makes it feasible to communicate nearly as freely with an official in a distant country as with one across the corridor; indeed, social or administrative distance may exceed geographical separation.

In small organizations or within small groups in large ones, oral communication on matters administrative is universal but not exclusive. The value of oral communication is great. It is two-way; its effectiveness can be judged at the moment; it can be extended or contracted as seems necessary; it is instantaneous. Its limitations are the absence of a permanent record, the possibility of misconception despite apparent understanding, and the increasing margin of error as conversations are repeated from superior to successive subordinates.

For communications that necessitate a permanent record and accurate statement, especially those dealing with complex or detailed subject matter, or that are directed to

persons at a distance, the written word is usually the only available medium. The written word also has limitations, it is not instantaneous, does not lend itself to interpretation, and may be misunderstood. This misunderstanding is more likely to occur when it falls into the jargon of professions or technical crafts.

The use of visual methods of communication is in its early stages. It may well have an important future, especially in the training and indoctrination of large groups. The army and navy use films extensively for training purposes, and some civilian agencies have found them useful. The film strip is a peculiarly effective way of communicating not only information but sentiments and attitudes that may appear out-of-place in a written memorandum.

PERSONNEL

Note: Some of the following information may appear to reiterate statements made in the section entitled "The Socio-Psychological Environment." This is done to show that whether approached from the standpoint of administration or from the rank and file worker, there is a great similarity in the findings.

The function of management can be stated as that of maintaining the social system of the plant in a state of equilibrium such that the purposes of the enterprise are realized. To achieve this end management has two major

functions; 1. the securing of the common economic purpose
of the enterprise, and 2. maintaining the equilibrium of
the social organization so that individuals through con-
tributing their services to this common purpose obtain per-
sonal satisfactions that make them willing to cooperate.
Failure to achieve the second will in time nullify the first.[1]

A direct expression of employee satisfaction is their
output or efficiency. Industry has made a number of personnel
studies which throw light on this problem. The greatest
factor causing inefficiency is employee dissatisfaction,
which has been further defined as a state of mind. This
state of mind has been found to have a direct relationship
to the worker's output. Many things can influence this
state of mind, such as boredom, monotony, type of work,
employee consideration, supervision, etc.

The institution of the rest period has been the most
well known outcome of this industrial study. The rest
period has not proved to be an expense to the administration.
Studies have shown that personal time, that is, time away
from the worker's assigned task, has been reduced enough
to compensate for the time taken for rest periods. This
single factor, whether it caused a reduction in fatigue or
a change in mental attitude, influenced output more than

[1]Rothlisberger, Management and the Worker.

any other external stimulus that was studied.

The type of work which embraced the fields of boredom and monotony had a great deal to do with the mental attitudes of the workers. If the work could be organized so that it appeared to be a series of complete operations, the output was greater; work which was continuous in nature gave greater opportunity for the development of boredom, monotony and fatigue. Particularly susceptible was work which did not demand a high level of attention. This type of activity freed the mind and allowed time for mental preoccupation. Mental preoccupation has a definite influence on worker output. Wherever any predisposition was shown by the worker for mental preoccupation, repetitive work was shown to aggravate the situation. Under extreme conditions mental preoccupations can become so acute as to nullify the effects of other factors which tended to increase output. The four most important factors in the immediate work situation which may assist or prevent the emergence of morbid preoccupations are 1. fatigue or organic unbalance, 2. repetitive work, 3. supervision, and 4. interhuman relations at work.[1]

The causes of fatigue cannot be lumped together. It was found that so many bodily factors contributed to fatigue

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[1] Rothlisberger, Management and the Worker.

that it was beyond all possible limits to correct them in the work situation.[1]

The crux of the problem of supervision seemed to be in the individual's personal situation. If the supervisor listened rather than talked he could gain greater understanding of the problems involved. Psycopathology has demonstrated that there is an important relation between the workers total orientation to the reality about him and his earlier childhood experiences. Wherever obsessive preoccupations were divulged in supervisor interviews it indicated that some interference in the worker's total orientation was causing a reduced capacity to attend to work. The major symptoms diagnostic of some interference in the worker's total equilibrium are: 1. excessive verbal response, 2. reduced capacity for attending to work, 3. marked or pessimistic preoccupation. Interference affecting worker equilibrium can arise from both inside and outside the work situation. To date not much has been done with those arising away from the job. But there is an increasing awareness of the importance of this field of study.

Within the work situation workers tend to resist changes in their working methods because these changes might disrupt their social position or stratification. It is much easier

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[1]Rothlisberger, Management and the Worker.

to make changes in matters of new machinery or processes.
Workers interacting daily with one another tend to form certain patterns of relationship. By these the worker knows
what is expected of him and what is expected of others.
Social positions at work are due to occupation while social
groupings are due to spatial contiguity.[1]

Monotony and boredom are primarily a state of mind.
Monotony is subject to such a wide variety of interpretations
that almost any improvement in mental attitude may be said
to be a relief from it. Studies of boredom have shown that
it is less likely to arise: a. when the form of activity is
changed at suitable intervals within the spell of work,
b. when the operatives are paid according to output produced
instead of time worked, c. when the work is conceived as a
series of self-contained tasks rather than as an indefinite
and apparently interminable activity, d. when the operatives
are allowed to work in compact social groups rather than as
isolated individuals, and e. when suitable rests are introduced within the spell of work.

One industry, namely the Western Electric Company, conducted a series of studies to try to compile personnel data
that might be used as a basis for administrative procedure.
During these studies different external stimuli were added

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[1] Rothlisberger, *Management and the Worker.*

to the working conditions such as length of working day, rest pauses, pay incentives, etc., to determine their effect. However, they had tended to minimize the human element. They found that in human situations it is practically impossible to keep all other factors constant, and therefore they had not studied the relationships between output and fatigue, monotony, etc., so much as they had performed a most interesting psychological and socialogical experiment. In setting up the conditions for the tests they had altered completely the social situation of the workers and their customary attitudes and interpersonnel relations. This alteration tended to void all findings of the studies. However, it might be worthwhile to note some of the conclusions reached:[1]

1. There has been a continual upward trend in output which has been independent of the changes in rest pauses. This upward trend has continued too long to be ascribed to an initial stimulus from the novelty of starting a special study.

2. The reduction of muscular fatigue has not been the primary factor in increasing output. Cumulative fatigue has not been present.

3. There has been an important increase in contentment among the girls working under test room conditions.

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[1]Rothlisberger, Management and the Worker.

4. There has been a decrease in absences of about 80 per cent among the girls since entering the test room group. Test room operators have had approximately one-third as many sick absences as the regular departments during the last six months.

5. Output is more directly related to the type of working day than to the number of working days in the week.

6. Observations of the operators in the test room indicate that their health is being maintained or improved and that they are working within their capacity.

It is interesting to note how findings tentatively advanced during early stages of the studies were reaffirmed by the final conclusions. The following findings in former reports were reaffirmed:[1]

1. The changed working conditions have resulted in creating an eagerness on the part of the operators to come to work in the morning.

2. Important factors in the production of a better mental attitude and greater enjoyment of work have been the greater freedom, less strict supervision, and the opportunity to vary from a fixed pace without reprimand from a gang boss.

3. The operators have no clear idea as to why they are

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[1] Mayo, Human Problems of an Industrial Civilization.

able to produce more in the test room, but as shown in the replies to questionnaires, there is the feeling that better output is in some way related to the distinctly pleasanter, freer, and happier working conditions.

Mr. G. A. Pennock, in a paper to the Personnel Research Federation, said that the increase in output was not due to fatigue as the test period was too long. Wage incentive may play some part, but, he states, his conviction is that it is due chiefly to changes in mental attitude.

Before a change of program the group was consulted and their comments listened to and discussed. Sometimes their comments were allowed to negative a suggestion. The group unquestionably developed a sense of participation in the critical decisions and became something of a social group.

How can a change such as this be assessed? It is a change of mental attitude; it is also far more. In any instance, the institution of rest pauses is probably the only major change. It takes time for secondary changes to be instigated which will finally show in increased output, among other effects. By secondary changes is meant diminished discontent with working conditions, and all it may imply.

During different phases of the tests various external stimuli were introduced into the work situation, and at the conclusion of the tests all were dropped including rest pauses. It must not be supposed that the abandonment of the

rest pauses was without effect. On the contrary, personal
time out returned to its original dimensions, and output
receded, but not to its former level.

This continuance of high level production coupled with
the absence of any amenities might be explained in this way.
In giving the worker a voice in management, making him feel
that he was a part of a whole, placing a value on loyalty,
the company strengthened his inner equilibrium. By strength-
ening the temperamental inner equilibrium of the worker,
the company enabled him to achieve a mental steady state
which offered high resistance to a variety of external
conditions. This then lends support to the idea that man
does not live by bread alone.

It must not be thought that the physical environment
was without effect in shaping the mental attitudes of the
workers. During one test year employees numbering 29,000
turned in over 28,000 complaints about conditions existing
in the physical plant. These pertained to aisles, floors,
drafts, furniture, fixtures, heating, lighting, smoke, and
fumes.[1] It may be assumed that not all employee irritations
were accompanied by a complaint. It would be impossible,
therefore, to evaluate the effect on morale caused by these
constant irritations. The extent and variety of these

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[1] Rothlisberger, Management and the Worker.

complaints shows the complexity of the problem to be solved. Due to advances in thinking and techniques during the last few years the work situation is no longer considered simply a problem of shelter. Significant studies in color, acoustics and visual fatigue, which of course includes lighting, have been made. These studies have produced relief from boredom and monotony. Color has been used to produce emotional response, reduce visual fatigue, and increase safety. Studies in acoustics have shown the existence of isolation due to a high noise level. This isolation when coupled with a task requiring low concentration produces an excellent opportunity for mental preoccupation. Proper acoustical control can tend to alleviate this condition. Visual fatigue in contrast to physical fatigue can be said to affect all people in a similar way. The effects of visual fatigue which lead to physical fatigue can be minimized by proper light intensity, restful color, and the opportunity to frequently change the focal length.

The studies which proved that social amenities were not the whole solution to a worker's peace of mind lead one to ask the question, at what point do the benefits accruing from architectural amenities cease to be worthwhile? When does one reach the point of diminishing returns? This decision must be left to future studies based upon ecologist, architect, and management.

PLANNING TRAINING

VALUE OF ARCHITECTURE AS A BACKGROUND FOR ADMINISTRATION

The value of architecture as a background for administration cannot be denied. The entire student program is definitely pointed toward the realization of the broad concepts behind each design problem. The grasp of the broad picture of any administrative problem is the measure of any executive. The architectural student, through the wide variety of problems that are presented for solution, gains valuable experience in this field. Architecture is probably the only profession today that trains men to plan. To plan in the field of architecture is to state, by program, the aims or desired end result, to investigate, correlate and coordinate all the factors which will bring about consistent and harmonious action toward a common end. What this planning does for architecture, program planning does for administration. Program Planning, whose importance to administration has been previously discussed, is the foundation or starting point for every design problem. The facilities thus developed would be a good background for administrators faced with the task of programming.

Just as the principle of coordination forms the frame-

work within which the other principles, such as organization
and cooperation, etc., work, so does program planning form
the framework within which coordination must work.[1]   The
problem of coordinating activities is not confined to the
field of administration. There is a coordination of time
and space as well and this coordination or establishment of
relationships is fundamental to any architectural solution.
The architect's ability to program and coordinate can solve
the administrator's problem of how to get all available in-
formation pertinent to a problem together.

VALUE OF ADMINISTRATION AS A BACKGROUND FOR ARCHITECTURE

A study of administration can be of great value to the
architect, not only from a business standpoint but also from
a professional one. It will enable the architect to organize
his own firm more efficiently and will also bring about an
awareness that many of the same principles, such as planning
organization and coordination, though slightly different in
application, may be problems of the client as well as the
architect. Knowing this will help the conscientious archi-
tect to perform a better service for his client.

Administrative experience would point up the fact that
there are pitfalls in attempting to organize human activities
on paper. The chief one of which is the tendency to ignore

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[1] Glaser, Administrative Procedure.

the "human factor." Just as this "human factor" may produce an organizational picture different from the organizational chart, so might it, if minimized, produce an activity which would be incompatible with the space designed for it. Since this organization of activities on paper is one of the functions of the architect, this knowledge will broaden his perception of the clients problems, and increase his professional skill. Administrative training would make the architect realize, in attempting to organize his own firm, that the organization chart must be organic and not copied from a chart which is organized for another purpose.

Administrators have long considered the proper place of the "expert" in the scheme of administrative organization. It has been said, and with justification, that the expert should be "on tap and not on top." Humans, in study or investigation, tend to grow more and more toward specialization of study--lesser scope and more depth. This specialization is the source of the weakness of administration by "experts." Specialization tends to separate groups and peoples. This is the antithesis of administration, the purpose of which is to pull groups together. While the architect, by virtue of his type of training, is not as susceptible to this narrowness of scope as most, still the administration of an architectural firm by one with only architectural training can produce many problems.

PRESIDENT

BOARD OF
DIRECTORS

ADMINISTRATION

DEPARTMENT
HEADS

PERSONNEL

UNIT OUTLETS

OUTSIDE
ASSETS

ARCHITECT

ENGINEERING

DESIGN

JOB ENGINEER

JOB CAPTAIN

DRAFTSMAN

DRAFTSMEN

POSITION OF ELEMENTS BEARS LITTLE
RELATIONSHIP TO IMPORTANCE
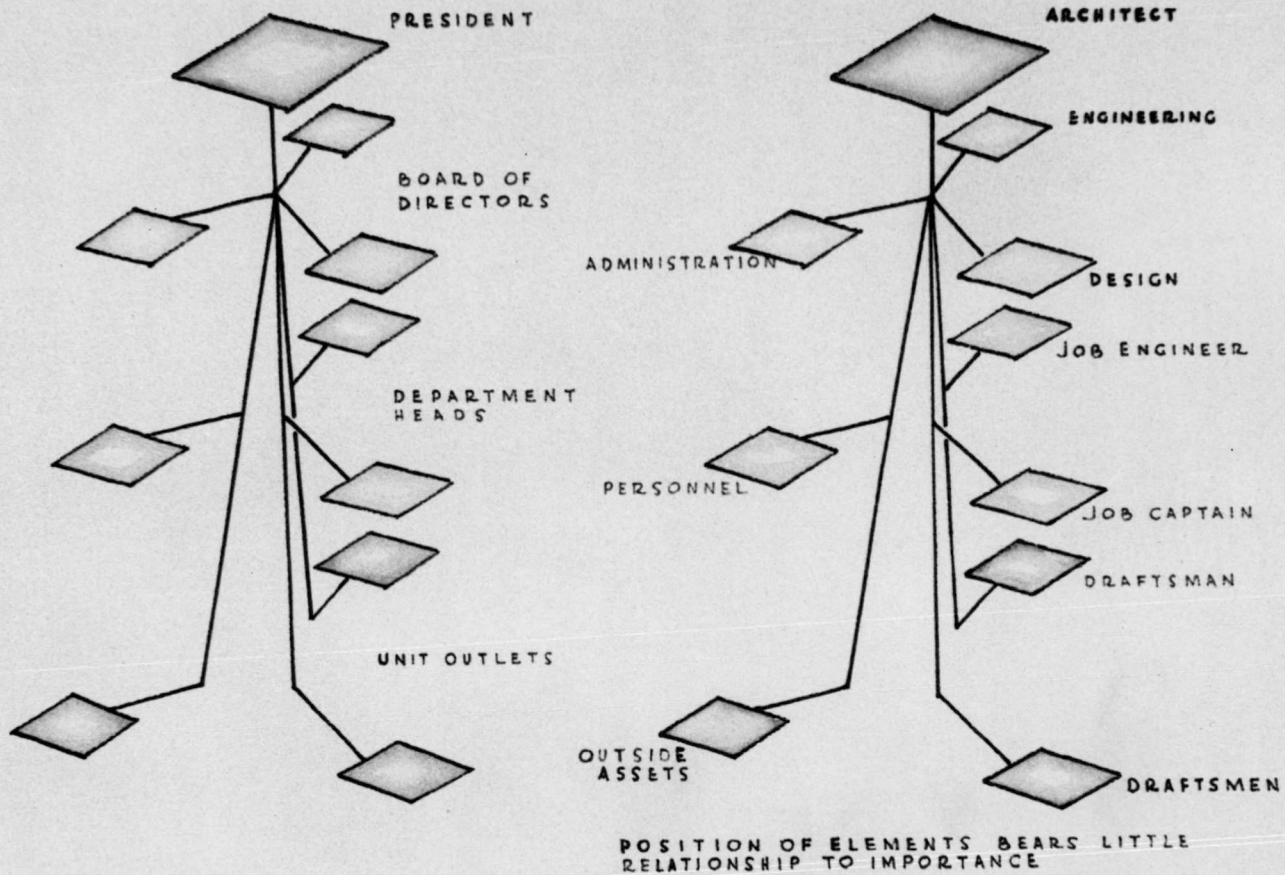
ONE TYPE OF CHART WILL NOT FIT ALL ORGANIZATIONS
CHARTS MUST BE ORGANIC TO HAVE MEANING . . . . .

The expert is prone to see all problems in the light of his own specialty, and thus has preconceived ideas which prohibit a true understanding of the problem. This narrowness of view prevents proper evaluation of the importance of other special fields. For these reasons administration by experts tends to produce unforeseen consequences as the decisions are not based upon collaborative knowledge.

The quality of "expertness" may also be called in from outside the organization. Often this outside expert is found to be the representative of a special interest group. As a result of such membership the expert's recommendations or actions will be colored by the policy or desires of the group he represents. This may work to the detriment of the problem to be solved.

Psychologically the problem of the expert is complicated by the idea that knowledge is power, and when this is coupled with administrative power it becomes dangerous in the minds of the lower rank and file.

There needs to be more clarification of the position of the "expert" in administration and architecture, so that the maximum benefits of his technical knowledge may be derived without turning over the policy-making to him.

Personnel studies made by industry should be of great interest to architects. The findings of these studies can contribute to the architect's awareness and understanding.

This will enable the architect to not only appreciate his clients' problems more readily, but, in the case of commercial types of design, the problems of the workers themselves. Such insight should improve the quality of the design.

These same problems in turn can be faced and solved more readily in the architect's own organization. Organization of work into a series of completed tasks will not only improve the workers' attitude, but will also permit each job to have an identity of its own. As the worker or draftsman is permitted to become part of all phases of a job, he is not only less likely to become a victim of boredom, but will also increase his general knowledge and worth to the firm.[1] The problems of monotony, boredom, fatigue, and mental well-being are just as important to the architect in terms of his draftsmen's satisfaction and resulting output as they are to industry.

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[1]Rothlisberger, Management and the Worker.

ARCHITECTURAL ADMINISTRATION

The purpose of this thesis was to investigate the relationship between administration and architecture. To find the extent of this relationship, and its possible influence on architecture, it is necessary to thoroughly explore all the various phases of activity which might be included in administration. A study of the basic principles of administration brings to light the fact that many of these principles, such as chain of command, span of control, organization and planning, are universal. They may be applied not only to architectural administration but also to something as different and yet similar as military administration. This point will be demonstrated by a design problem involving a military situation.

The basic principles of administration are more apparent in larger offices, and it is in the larger offices that there is a greater need for architectural administrators.

The twentieth century has seen the growth of large offices in nearly all sections of the country. In the beginning these large offices were located in the large metropolitan areas of the East. However, since the war, with the establishment of a branch office of Skidmore Owings and

Merrill in San Francisco, and the advent of such firms as Wurdeman and Beckett of Los Angeles, and John J. Mahoney of Seattle, this type of firm has come to the Pacific Coast. The growth of these firms is an indication of the increasing industrialization of the West. As this industrialization continues in the future, further increase in the number of large architectural firms may be expected.

There are other reasons for the growth of large firms besides being in a strategic position geographically. Of course there must be the industry to require large buildings, but more important factors in a firm's growth are: 1. the professional ability to be able to design and build satisfactory structures, and 2. the administrative ability to be able to cope with the complex administrative problems which are a natural part of such expansion.

The question might be asked why any office should become so large. Why should jobs be taken out of the area rather than be given to a smaller local firm? The answer seems to lie in the fact that in business, big likes big. The client with a large commission would rather go to a firm which can, in a short time, present him with printed brochure complete with statistical information and renderings which will show how he will spend his money and what he will get for it. In this field of extensive statistical and technical research the large office offers the client a service which

the smaller local office cannot afford to do. This is perhaps the greatest justification of the large office.

Large offices may vary from the reasonable size of twenty to thirty men, to the huge organizations employing under the press of rush work, one thousand men. However, the average number in the large Eastern offices, such as Skidmore Owings and Merrill, and Voorhees Walker Foley & Smith, is around four hundred men. It would be interesting to show the general organization and duties of a large office such as Skidmore Owings and Merrill. The senior partners are the top echelon and are concerned exclusively with administration and contact work. The junior partners are administrators, contact men, and specialists in fields such as design and engineering. The head craftsman is an administrator who is in charge of office mechanics such as coordination and programming the work flow. In charge of each job is a "job captain." His duties concern all aspects of a particular job. He is called in during client contacts and performs administrative tasks in the form of coordination and supervision. Below the job captain are the senior draftsmen and junior draftsmen who are assigned to his particular job. It should be noted that in any position from job captain up either part or all of the duties of the personnel are concerned with administration. There is then a clear need for architects with administrative training. The

architectural administrator is confronted with problems,

other than coordination and supervision, which are equally

important. The problem of labor turnover in large offices

is worthy of deep consideration. Basically this turnover

seems to stem from a feeling on the employee's part that he

is being exploited and in many ways this is true. During

times of emergency, or rush jobs, the large office will hire

extra employees and pay them above usual wages to secure

their services. When the period of need is past they may be

discharged without notice. The employer says, "We no longer

need you and you were overpaid anyway." This impersonal

treatment by employers also works against them. Because

employees have no feeling of security, they have no feeling

of loyalty to the firm, and consequently they do not hesi-

tate to profit by the training they have received and seek

better paying positions elsewhere. Even loyal employees

may in time become dissatisfied with the impersonal pro-

duction line type of large office and resent being just

another number on the roster. The architectural adminis-

trator could help alleviate this problem. By organizing

the work so that the draftsman may follow it all the way

through and thus establish a personal identity with the job,

he would produce a good mental state on the part of the em-

ployee. The boredom of being confined to one task such as

window details would be eliminated. Here again a basic

premise discovered in the study of administration shows that

this relief from boredom and monotony would result in contentment among the employees. By removing the cause of mental irritation and the resulting inattention to work, better morale and greater output would be achieved.[1] General training, so as to lift the level of the employee's professional ability, would pay off not only in increasing his general worth to the firm, but would also produce the feeling that he was not just another number. Recognition of the individual worth of the employee would foster the idea that individual initiative and loyalty were appreciated by the firm. The resulting employee satisfactions would produce a greater output, increased quality, and lower labor turnover, not only of the rank and file but also among the key men.

Professional administrators trained in fields other than architecture might well be part of the architectural firm. Any private organization must insure financial gain or cease to exist. Architecture on a large scale embraces the fields of office management, contracts, and the profession of law, statistical analysis, public relations and many others. Any of the tasks in these fields might be more efficiently performed by an administrator trained in that field. The number of such administrative specialists

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[1]Mayo, Human Problems of an Industrial Civilization.

in the organization would naturally depend upon the size of the firm and its ability to support them. However, regardless of the number of specialists, the administrative aspects of architecture must be closely controlled if the firm is to prosper or even survive.

Architects must follow the basic principles of administration in their offices. They must realize that, as in any other private enterprise they have two objectives: 1. to achieve the common economic purpose of the organization, i.e., to produce good architecture, and 2. to maintain the social organization so that employees, in contributing their efforts, obtain personal satisfactions which make them willing to cooperate.

A DESIGN PROBLEM IN ORGANIZATION

In this, the design phase of this problem, the intent was to set up a situation of such a nature as to demand rigorous planning. Past student experience has been chiefly in the direction of developing form and it was felt that this time the quest should be in the organizational background necessary before the determination of form.

A second consideration was to choose a problem which would stress the organizational aspects of planning. The Military Services present one of the most rigorously planned and highly organized administrative bodies in American life. The higher the echelon of administration the more complex the processes. In view of the facts, the following was chosen as a problem..... THE DESIGN OF A CONTINENTAL DEFENSE THEATER HEADQUARTERS.

This problem would be of such complex nature that to make it work would demand rigorous planning. Not only does this entail the organization necessary for such a command level, but also involves the integration and coordination of three different services.

Such a problem would not only provide inflexibilities from the design and organization standpoint, but being out-

side the normal experience would forego any future contro-
versy as to the manner or degree in which things were done.
No attempt will be made to carry this problem to three
dimensional form, other than a simple mass study. The
problem will be carried through the planning and organiza-
tional stages and will be illustrated by accompanying plates.

NATIONAL DEFENSE ORGANIZATION OF THE UNITED STATES

After the first World War, the United States failed to
establish the military and governmental machinery necessary
for fighting global wars. In the interval between World
War I and World War II our nation did not establish the
military structure necessary to coordinate the efforts of
our Army and Navy in strategic planning, the determination
and procurement of material requirements, and the preparation
of war budgets. Accordingly, our entrance into World War II
found our government inadequately organized to solve the
military, political, and economic problems arising from the
application of military power on a world wide scale.

In 1945 World War II came to an end and the United
States emerged as one of the victors of a truly global war.
The performance of our military forces on the battlefield
and the support provided these military forces by industry,
labor, agriculture, and all of the elements of our national
life made this victory possible. Again, as in World War I,
the United States fought and ended the war with a national

defense structure that was really unsound. In many cases the organizational structure of our national defense was make-shift or stop-gap arrangement. Each war-time modification was necessary to eliminate glaring defects that were impeding our march toward victory. For example, it was not until after World War II had begun that we established the top military and political structures with which we fought the war. It was not until December 1941 that the Joint Chiefs of Staff was organized; it was during the war that unified command in overseas theaters was established by the Joint Chiefs of Staff. It was not until the war had been going on for almost three years that the United States coordinated political and military decisions through the State-War-Navy Coordinating Committee.

These organizational changes made during the last war were effected by executive order of the President under the broad powers conferred upon him by the War Powers Act. Therefore, these military features were temporary in nature and the legal basis for their existence would have ended if the President's authority under this Act ceased to exist.

In 1943 the Joint Chiefs of Staff, in order to insure that these temporary organizational changes would not come to an end and that our national defense organization would not return to its old form, established a joint committee to study the problem of national defense. It was directed

to recommend a military structure which would eliminate the existing weaknesses and inefficiencies of our permanent national defense organization. In addition, both the War Department and the Navy Department prepared their own plans for unification of the Armed Forces during 1945. These various plans were reviewed by the Military Affairs and the Naval Affairs Committees of the House of Representatives and the Senate during 1945 and 1946. In the fall of 1946 the President directed the Secretaries of the War and Navy Departments to appoint a joint committee to evolve a solution for Unification which would carry the approval of both the War Department and the Navy Department. This jointly approved plan was submitted to Congress early in 1947.[1]

While this plan was under study by Congress, the War Department established the Hall Board to determine the organizational and functional defects of the existing permanent defense structure and to determine if the jointly recommended plan would eliminate these weaknesses. It also recommended a method for separating the Army Air Forces from the War Department if Unification incorporating a separate Air Force should be approved.[2]

The Hall Board concluded that the jointly recommended plan of the War and Navy Departments for Unification would

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[1]Military Review.   [2]Ibid.

help to eliminate some weaknesses. The report indicated that
when Unification became a reality, modifications in the plan
as then recommended might be desirable. The Board also set
forth a broad plan for the separation of the Army Air Forces
from the War Department. The recommendations of this Board
served as the basis for the separation of these two services.[1]

In July 1947 Congress passed the National Security Act
of 1947 which is basically the plan jointly agreed upon by
the committee established by the War and Navy Departments.
At the top of the structure is the President of the United
States as Commander-in-Chief of the Armed Forces. Immediately
under the President is the National Security Council which
provides the integration of our foreign and military affairs.
The National Security Resources Board is responsible for the
integration of the military program and our civilian economy.
The Central Intelligence Agency (the top intelligence agency
of the government) reports directly to the National Security
Council. Below this is the civilian structure in the National
Military Establishment. This is headed by a civilian Secretary
of Defense and includes the three Departments, each of which
is also headed by a civilian secretary. The Joint Chiefs of
Staff, the War Council, the Munitions Board and the Research

[1]Military Review.
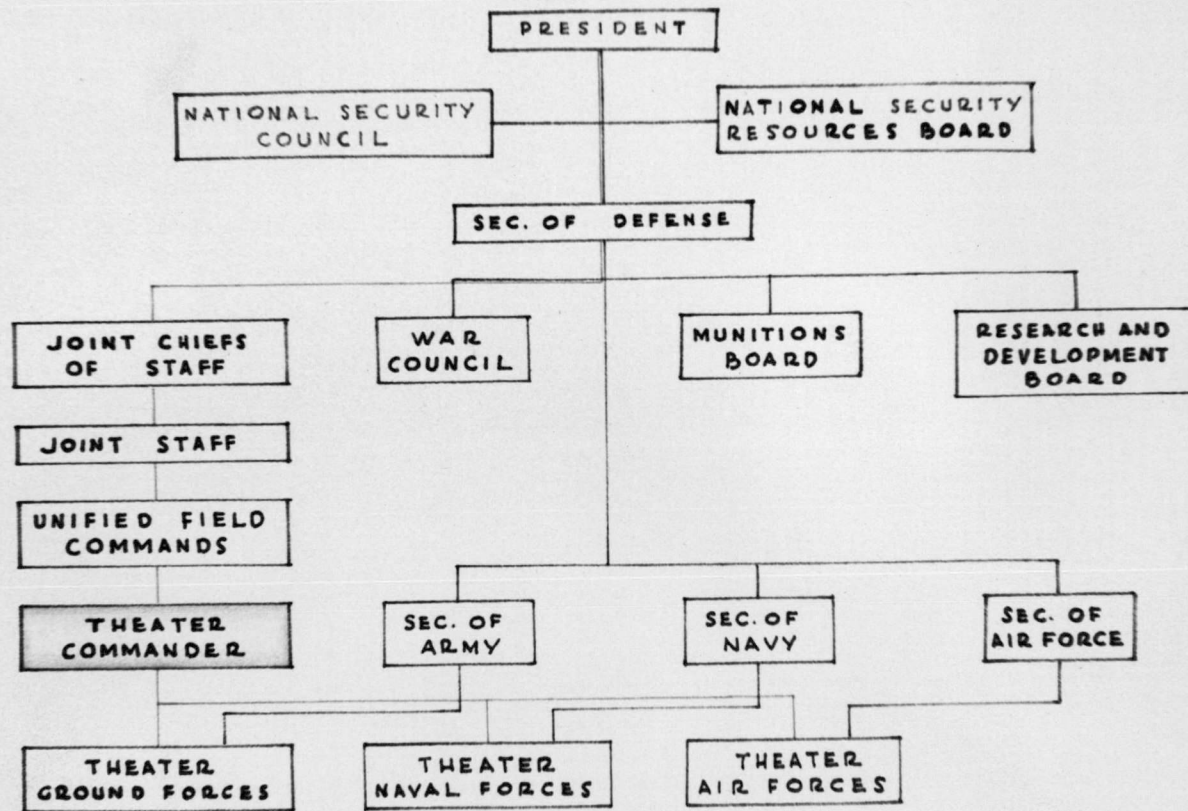
THE NATIONAL
MILITARY
ESTABLISHMENT

and Development Board assist the President and the Secretary of Defense in the discharge of their duties and responsibilities.[1]

THEATER ORGANIZATION

Soon after the beginning of World War II the Joint Chiefs of Staff determined that all the forces—air, land, and sea—assigned to one theater of operations would be placed under the command and control of one commander. This supreme commander might be a naval officer, a ground officer, or an air officer. This principle of unified command is firmly established in our military doctrine today by the National Security Act of 1947. This Act directs that the Joint Chiefs of Staff will "establish unified commands in strategic areas when such unified commands are in the interest of national security."[2]

To exercise his command over a joint force the theater commander must accordingly establish a joint staff which should include personnel from all of the components. The use of a joint staff will permit the integration of the operational capabilities of the three components and the formation of an effective joint operational plan. The effectiveness attained in the logistical and administrative fields among the different theaters varied widely during the

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[1] Military Review. [2] Army data.

THEATER COMMANDER

PERSONAL STAFF

JOINT STAFF

PUBLIC RELATIONS

INSPECTOR GENERAL

AIDES

ARMY

NAVY

AIR FORCE

INTELLIGENCE

DEPUTY COMMANDER

CHIEF OF STAFF
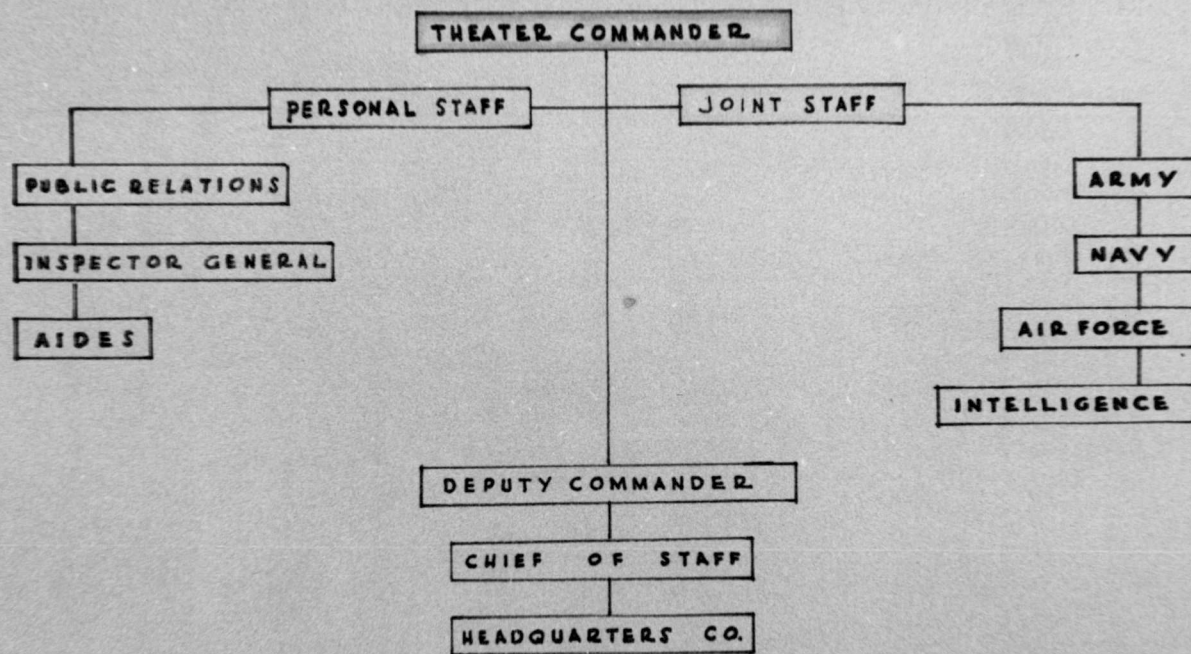
HEADQUARTERS CO.

ORGANIZATION OF
THEATER COMMAND
HEADQUARTERS

INFORMATION FLOW

- UNIT OPERATIONS
- UNIT INTELLIGENCE
- COUNTER INTELLIGENCE
- JOINT STAFF
- HEADQUARTERS INTELLIGENCE
- WAR ROOM
- HEADQUARTERS OPERATIONS
- JOINT STAFF
- OPERATIONAL COMMANDS
- UNIT OPERATIONS

CHAIN OF COMMAND

- THEATER COMMAND
- JOINT COMMAND
- OPERATIONAL COMMAND
- UNIT COMMAND
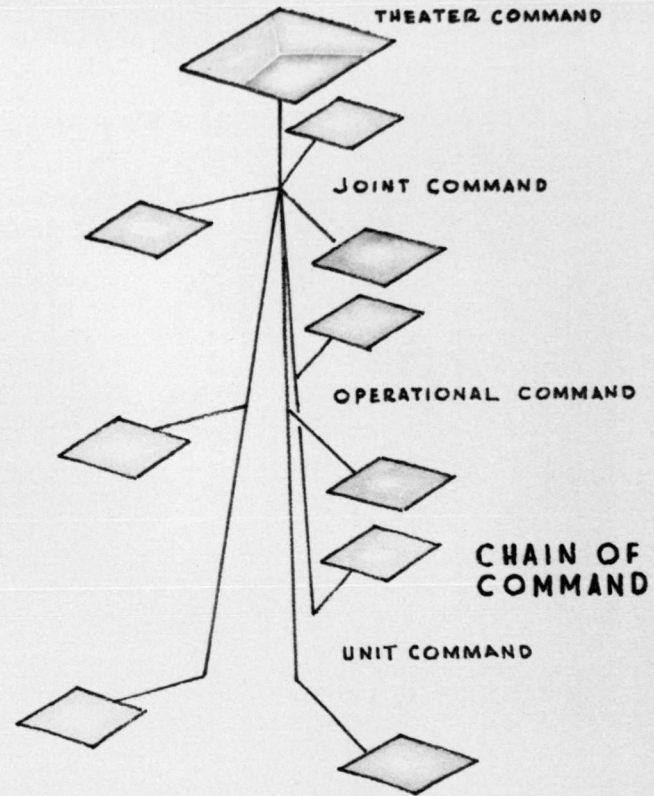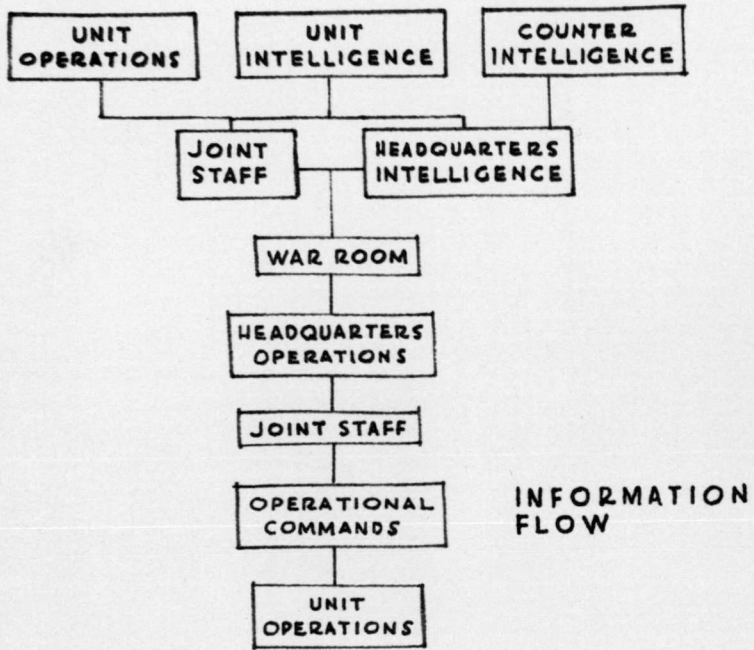
AUTHORITY—THE POWER TO DIRECT— DEPENDS UPON A CLEAR LINE OF COMMAND FROM THE TOP TO THE BOTTOM AND A CLEAR LINE OF RESPONSIBILITY FROM THE BOTTOM TO THE TOP.....

last War. With the establishment of a single department of Defense a more comprehensive integration in the field of logistics and administration can be expected in the future.

In a normal theater of operations the over-all command of the joint forces assigned to one theater will be vested in a supreme commander. He will be assisted by a joint staff and will exercise command of the air forces through an Air Force commander, command of the ground forces throug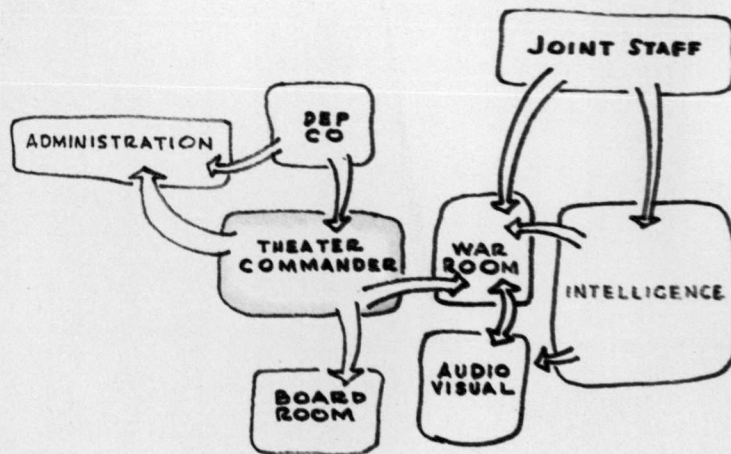h an Army commander, and command of the naval forces through a Naval commander. These Commanders will be in command of the operational forces of their respective branch of the service.

THE PROBLEM

The technological advancement of the airplane, and the resulting effects on communication and distance, have voided the old idea of the invulnerability of the continental United States. Today there is no section of the country that is safe from enemy action. To attempt a defense based upon the nation as a whole is impractical from the standpoint of size or area alone. To limit the scope of attention to an area which is within the limits of one man to direct is the only way to correct this problem. It has already been pointed out in the previous study of administrative principles that organization of the activities, so as to limit the span of control, is fundamental to any type of administration;

FUNCTION
OF
COMMAND

INTELLIGENCE

JOINT STAFF

WAR ROOM

THEATER COMMANDER

ADMINISTRATION

ADMINISTRATION

DEP CO

JOINT STAFF

THEATER COMMANDER

WAR ROOM

INTELLIGENCE

BOARD ROOM

AUDIO VISUAL
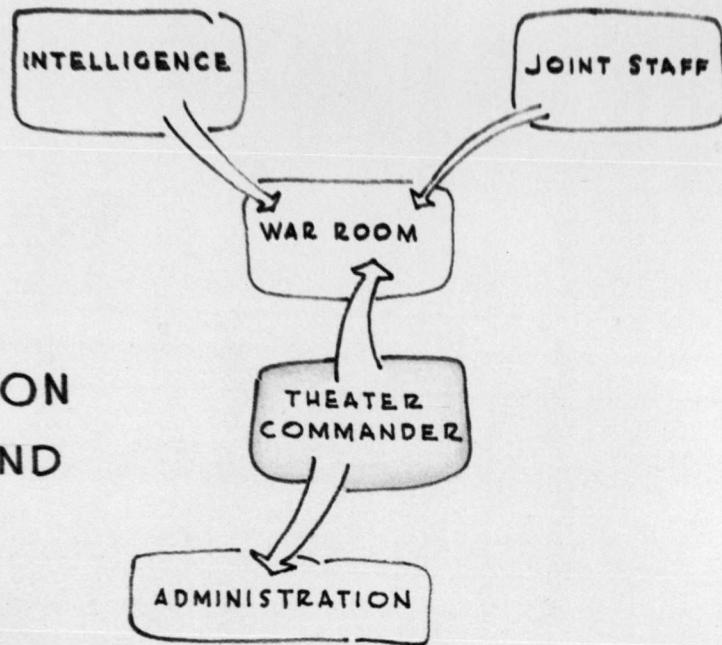
architectural, industrial, or governmental, as well as the military defense problem.

The division of the United States into defense areas will not only limit the span of control, but will firmly fix the responsibility for military actions within that area. This then is the function of the Theater Commander. He is responsible for the defense of any given area. Responsibility and accountability are impossible without authority--the power to direct. Authority depends upon a clear line of command from the top to the bottom, and a return line of responsibility and accountability from the bottom to the top. Therefore any action recommended which enables the Theater Commander to better direct or control also increases his accountability and responsibility.[1] By limiting the scope of attention and granting the authority necessary, strength and unity are developed in the Theater Commander. Strength and unity in an executive make clear who is responsible for faults in administration and the resulting actions of the organization.

Dividing the United States into defense areas should be done on the basis of a reasonable geographic area rather than on the basis of the homogeneity of the area. On this assumption the United States has been divided into eight

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[1] Hoover Commission Report.

Map labels: SEATTLE, BILLINGS, SALT LAKE, SAN FRANCISCO, DENVER, CHICAGO, NEW YORK, KANSAS CITY, LOS ANGELES, ATLANTA, SAN ANTONIO, MIAMI
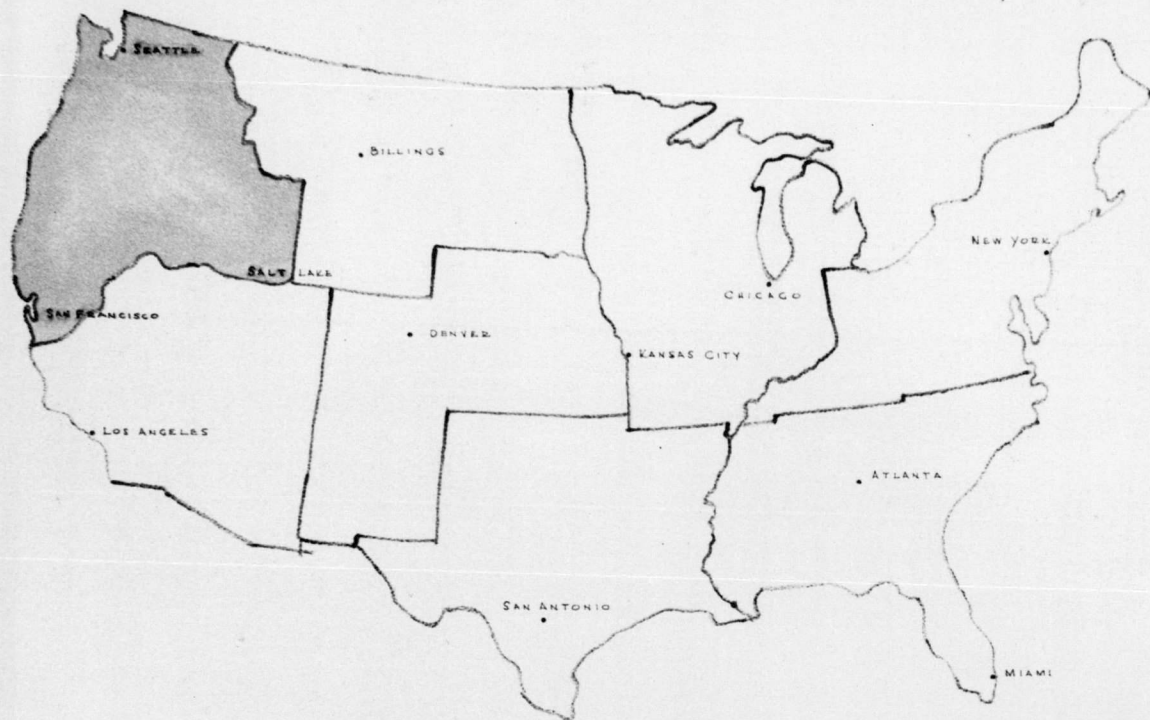
DIVISION OF THE
UNITED STATES
INTO DEFENSE
THEATERS

SEATTLE

13TH NAVAL DISTRICT
HEADQUARTERS

WASHINGTON

OREGON

IDAHO

NEVADA

UTAH

4TH AIR FORCE
HEADQUARTERS

6TH ARMY
HEADQUARTERS

12TH NAVAL DISTRICT
HEADQUARTERS

SAN FRANCISCO

CALIFORNIA

11TH NAVAL DISTRICT
HEADQUARTERS

LOS ANGELES

SURFACE PATROL

AIR PATROL 400 MI.

STUDY OF
PACFIC
NORTHWEST
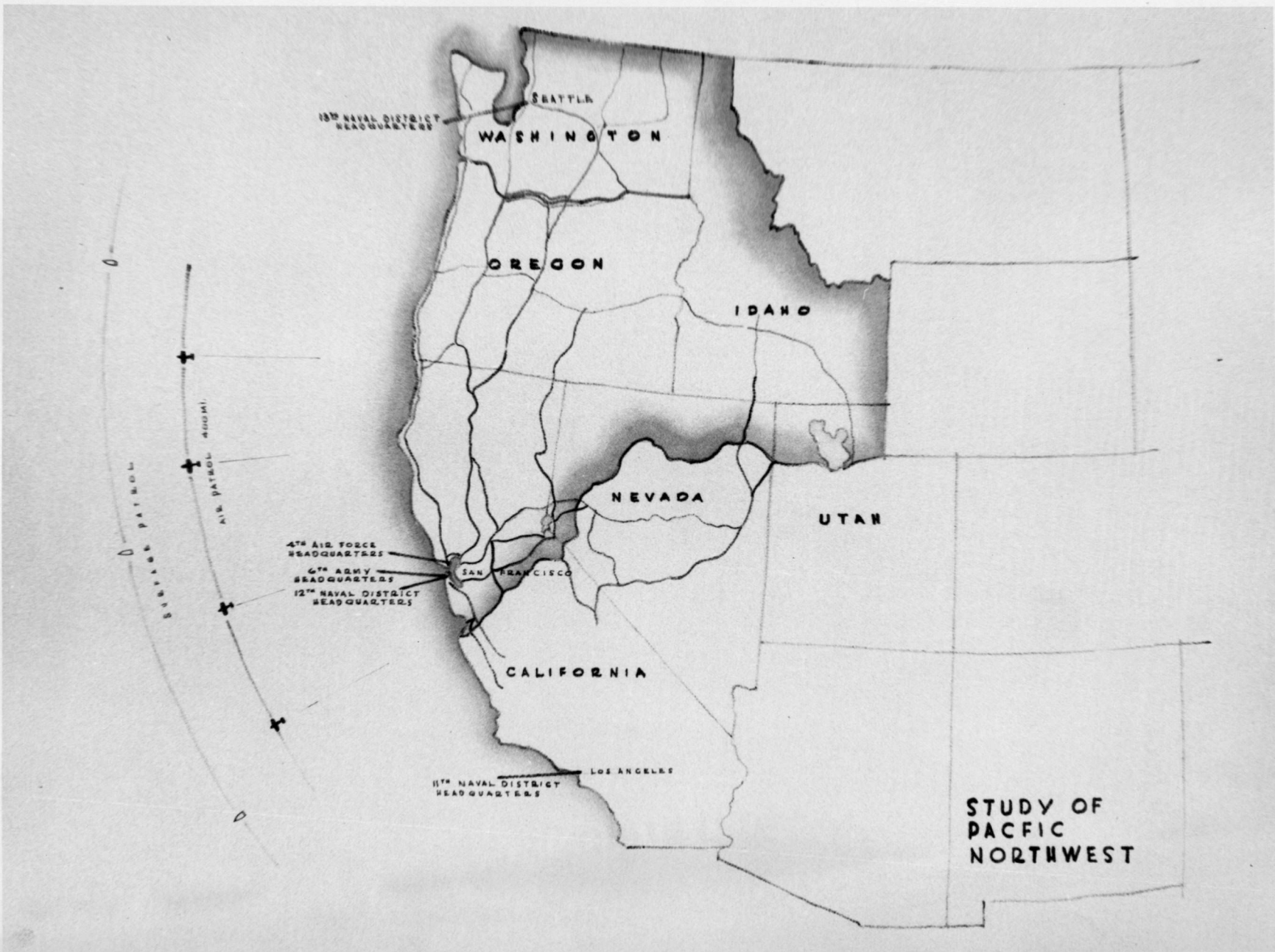
areas. This will provide areas which are of sufficient size to permit a well organized plan of defense. At the same time there would be provided internal defense areas, or hinterlands, to which, in times of need, our forces might withdraw. The defense of these in turn would be planned by commanders already familiar with the terrain and its problems.

The area chosen for this problem was the Pacific Northwest. Choice of this area permits a greater opportunity to make the problem seem authentic as it is more available for research and the conditions prevailing are better known.

The fact that the United States has not been divided into defense areas or theaters, and that such a command level does not exist in the military hierarchy is to the designer's advantage, as it permits much greater freedom in developing his own organizational ability. None the less there does exist an organizational frame of reference which will provide bounds within which the designer must operate. In addition to these existing limits, one need only conform to those standards which make for good administration...good administration being the organization of all the parts into a smooth-functioning whole.

Some of the more pertinent rules for good administration, which apply directly to this problem, are:

1. A proper chain of command from the top to the bottom

Organization chart:

THEATER COMMANDER
├── PERSONAL STAFF — JOINT STAFF
DEPUTY COMMANDER
HEADQUARTERS Co.
POST COMMANDER

Under POST COMMANDER:

MEDICS

SERVICE GROUPS
- ENGINEERS
- MAINTENENCE
- FIRE STATION
- HEATING

- Q. MASTER
- COMMISARY
- LAUNDRY
- SUPPLY
- HOUSKEEPING

- ORDINANCE
- MOTOR POOL

POST ADMINISTRATION
- HDQ. CO
- RECORDS
- HOUSING
- FINANCE

- PROVOST MARSHALL
- SECURITY
- MESS
- OPERATIONS

CIVILIAN SERVICE
- TELEPHONE EXC.
- WESTERN UNION
- POST OFFICE
- BRANCH BANK
- RED CROSS
- Y.M.C.A.
- U.S.O.

CHAPLAIN
- JEWISH
- CATHOLIC
- PROTESTANT

SPECIAL SERVICE
- POST EXCHANGE
- OFFICERS CLUB
- NON-COM. CLUB
- LIBRARY
- THEATER
- GYMN

ORGANIZATION REQUIRED FOR A NEW POST

and a line of responsibility from the bottom to the top.[1]

2. Proper control depends upon proper and adequate staffing to organize and unify the issues brought before the Commanding Officer and to offer technical advice upon those issues.[2]

3. Proper organization of work under staff members in order to keep the "span of control" within the ability of the commander to direct.[3]

4. Delegation of authority, or discretion, to the lower echelons to make minor administrative decisions and thus relieve the Commanding Officer of detail.[4]

5. Determination that all functions required to accomplish the mission of the organization should be homogeneously grouped.[5]

6. That all individuals should be respectively assigned to these groupings in accordance with their abilities and capabilities.[6]

THE SITE

Many considerations affecting the site have come to light during research. Interviews with local military authorities show that a basic premise of military control

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[1] Hoover Commission Report.   [2] Ibid.   [3] Ibid.

[4] Army Data.   [5] Ibid.   [6] Ibid.

4TH AIR FORCE HQ.
HAMILTON FIELD

CARQUINEZ BRIDGE

IN THE EVENT OF AN EMERGENCY COMMUNICATION
LINES WHICH DEPEND UPON MAJOR BRIDGES ARE
WEAK — THEY BEING SUBJECT TO ATTACK -----

FARALLON ISLANDS
(ELECTRONICS
OUTPOST)

6TH ARMY HQ.
PRESIDIO

GOLDEN GATE BRIDGE

BAY BRIDGE

12TH NAVAL
DISTRICT HQ.
SAN FRANCISCO
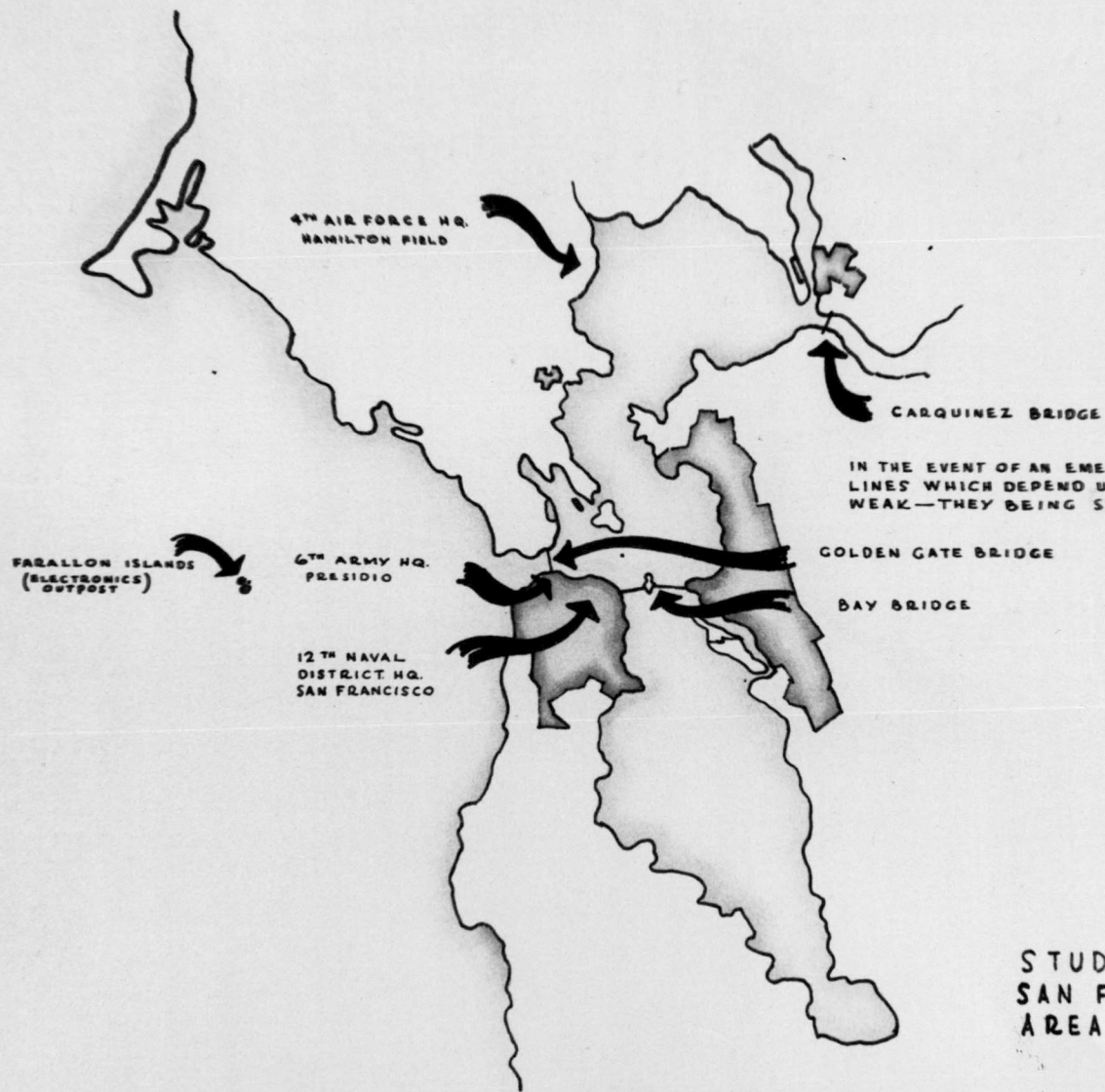
STUDY OF
SAN FRANCISCO BAY
AREA

and coordination depends upon physical contiguity. An examination of the existing operational Commands for the Pacific Northwest shows them to be centered in the San Francisco Bay area. This, then, sets the general vicinity of the site.

Personnel breakdowns, to be shown later, indicate a working force in this headquarters of approximately two hundred and eleven men. From a standpoint of economy, the construction of a new post to house this Headquarters does not seem feasible. Such a post would need to be large enough to offer all amenities to these two hundred and eleven men, plus a service force of about twelve hundred officers and men. It follows quite logically that, if possible, this duplication of effort and services should be avoided.

Since this Headquarters represents all three branches of the Military Establishment, it would be no breach of military protocol to combine this Headquarters with some already existing Operational Headquarters. A survey of the existing facilities shows that the twelfth Naval District Headquarters, located in downtown San Francisco, could not absorb this additional load. The Sixth Army Headquarters, at the Presidio, has adequate facilities, as does the fourth Air Force Headquarters at Hamilton Field.

Viewing these two installations in the light of security,

we find that, to all intents, the Sixth Army Headquarters is in a somewhat isolated position. The communication lines for this Headquarters are dependent upon two major bridges, the Golden Gate and the San Francisco Bay Bridge. This makes these communication lines weak, for bridges would obviously be primary targets for any future enemy action. Should these bridges be bombed out, communication would be forced to go fifty miles south through urban traffic to round the southern end of the bay. In case of a forced evacuation this would hinder, if not stop, any effective withdrawal of the Defense Theater Headquarters.

Hamilton Field is independent of the bridges and, in addition, has direct rail and air service. Aerial communication, in the form of courier planes, would be very important both for the movement of documents and key personnel. Hamilton Field is equipped not only with an air field, but also with existing facilities for aircraft maintenance. For these reasons, then, let us assume that the site for the Theater Headquarters shall be somewhere on, or adjacent to, Hamilton Field.

The determination of vicinity location within the bounds of Hamilton Field should be influenced by existing conditions. Every effort should be made to use the present facilities. For purposes of morale, the site should be located close to the community area of the post, and should

SERVICE AREA

BARRACKS AREA

ADMINISTRATION AREA

HANGARS AND TECHNICAL SUPPLY

AIR STRIP

BARRACKS AREA

GATE HOUSE

THE SITE

BARRACKS AREA

OFFICERS HOUSING

U.S. HIGHWAY 101
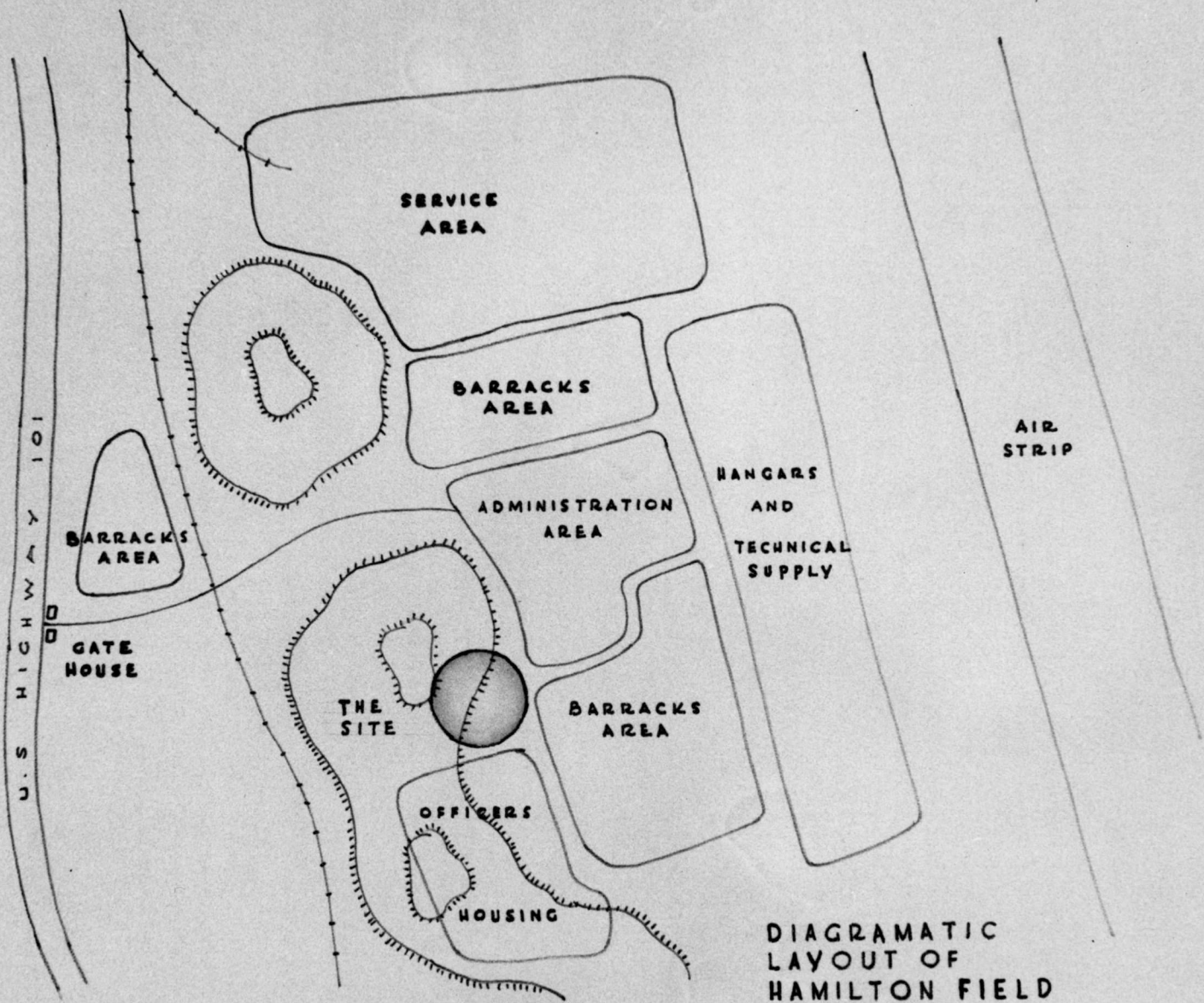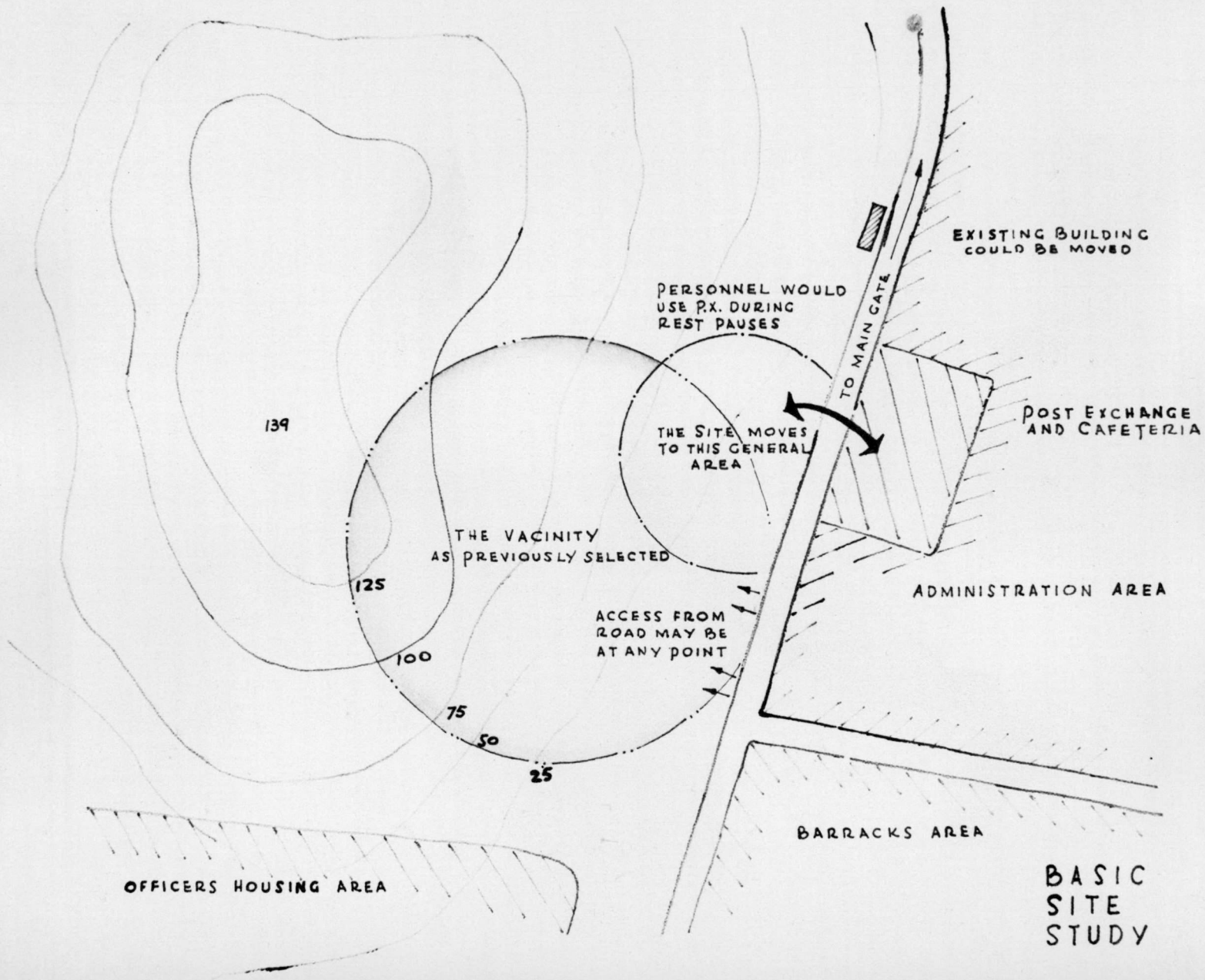
DIAGRAMATIC LAYOUT OF HAMILTON FIELD

also be adjacent to the living quarters and their accompany-
ing mess facilities.

No actual maps of Hamilton Field are available due to
present security regulations, but a reasonably accurate
diagramatic layout of the field, based on personal obser-
vations, is possible. This diagramatic study shows that
there is a possible site across the street from the Post
Cafeteria and the Post Exchange that fulfills the contiguity
requirements and is within easy walking distance of both
the officers' and Enlisted Men's living quarters.

In site planning the relationship of areas in regard
to personnel convenience is important. For instance, the
availability of the PX and Cafeteria for use during rest
pauses would greatly improve the morale of the Headquarters
Staff. It would permit them to interrupt the working hours
and give them not only variety, but a chance to escape from
the rigid supervision of the work situation.

Personnel studies made by industry in an effort to
establish a basis for better administration have shown that
consideration of the human element has been beneficial to
the organization. In general it is the failure to make
this consideration that marks one of the big differences
between the military and industrial administrations.

Topographic information concerning the Hamilton Field
area is available in the form of a contour map dated 1890,

EXISTING BUILDING
COULD BE MOVED

PERSONNEL WOULD
USE P.X. DURING
REST PAUSES

POST EXCHANGE
AND CAFETERIA

THE SITE MOVES
TO THIS GENERAL
AREA

TO MAIN GATE

139

THE VACINITY
AS PREVIOUSLY SELECTED

ADMINISTRATION AREA

125

100

ACCESS FROM
ROAD MAY BE
AT ANY POINT

75

50

25

BARRACKS AREA

OFFICERS HOUSING AREA

BASIC
SITE
STUDY

however it may be assumed to be accurate enough for the purpose. The site is at the foot of a low hill and fronts on a street running from northeast to southwest. Due to the contiguity of the living areas, parking on the site will be limited to those vehicles necessary for liaison work, and outside visitors.

PERSONAL STAFF

Staff organization is the essence of modern military organization.[1] This is another example of pure administration in that any organization has its equivalent of line and staff personnel, just as appears in military organization. As in any administrative organization, the staff officers are concerned with what is to be done and the line officers with putting it into effect. Staff officers are concerned with unifying the issues brought before the commander so as to eliminate administrative detail.

The tremendous number of details inherent in such organizations makes it virtually prohibitive for the commander himself to be encumbered with these details and accomplish his primary function of command. Apart from the fact that the mental and physical powers of one man are unequal to such a task, the general supervision of all fighting forces under his command would be seriously impaired. The commander

_____

[1] Army Data.

must, therefore, have a sufficient number of assistants to whom these details may be entrusted. These assistants form his staff. Staff officers are primarily advisers and consultants. They are invested with no military command.

Such an organization is the Commander's Personal Staff. This Staff is attached to the Commander to assist in the performance of all military duties which are not concerned with the administration of the assigned military forces. The Personal Staff is roughly organized under the headings of Public Relations, Inspector General, and Aides.

Public Relations is responsible for all relationships between the Commander and civilian life. They handle all news releases, interviews, statements and visiting civilian dignitaries.

The Inspector General reports to the Commander on the technical proficiency and the technical quality of the men and material under his command.

The Commander's Aides have no assigned area of activity. Their duties consist of assisting the Commander in any way that he might direct.

There is no set size for the Personal Staff of the Commander as the number may fluctuate, depending upon the size of the command, the type of activity, and whether war or peace-time status. However, the same type of activities would be carried on by the Personal Staff and the fluctuation

in size would not be great. For the purposes of this pro-
blem the number has been assumed to be ten officers and
enlisted men.

JOINT STAFF

The Joint Staff is comprised of officers representing
each of the branches of the service. In this way all avail-
able information is brought together to facilitate the act
of decision-making by the Theater Commander. This idea of
a joint staff is one that might well be followed by private
enterprise, as this is an answer to one of the biggest
problems of an administrator. The problem of how to get
all the available information on any one problem together.

A good staff member must be able to grasp a picture
of the whole problem and be able to evaluate the importance
and relationship of the parts, one with another. A staff
member may present different views from those of the com-
mander, and may support them in the course of discussion,
but once a decision is made, then he should accept the
decision and work toward its fulfillment.[1]

In general a staff has many varied duties but the chief
ones are as follows:

1. To unify the issues brought before the commander
so as to simplify his task and relieve him of unnecessary

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[1] Army Data.
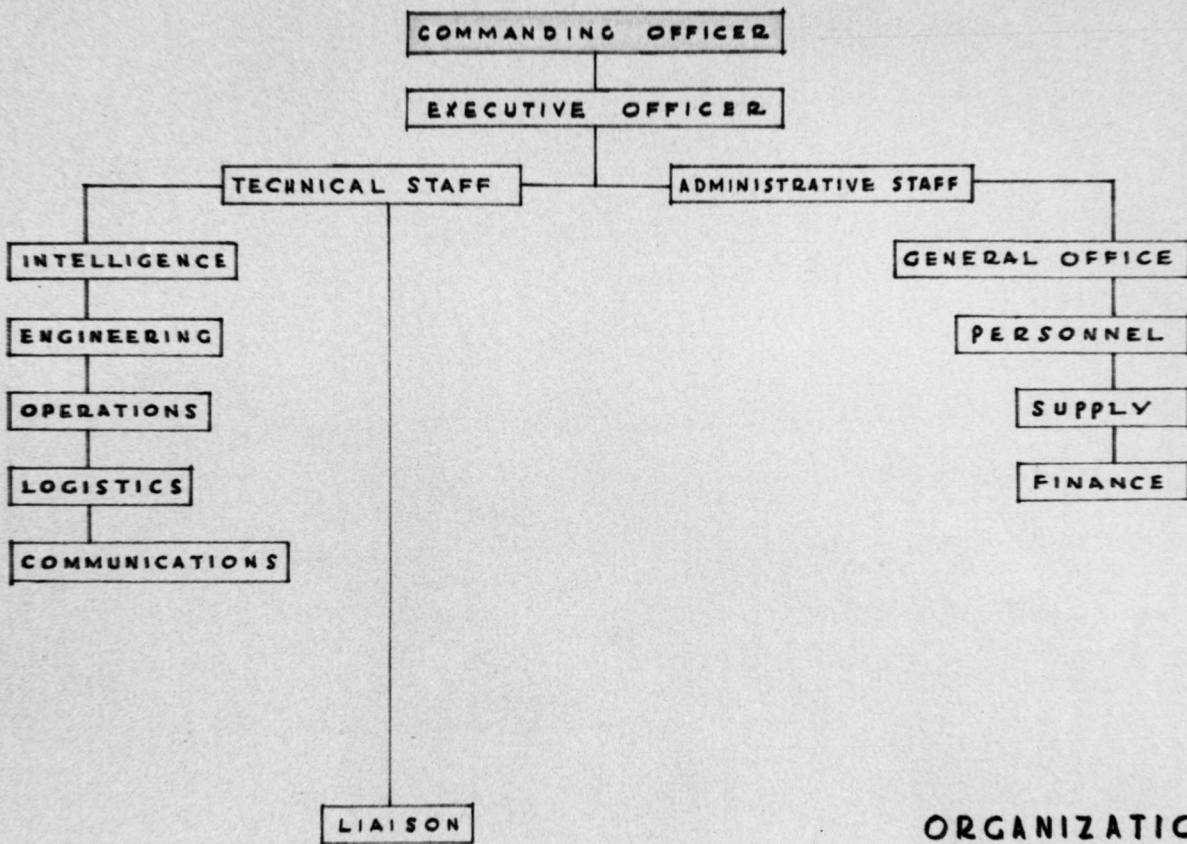
ORGANIZATION
OF A TYPICAL
JOINT STAFF
UNIT

administrative duty.

    2. Provide technical advice upon any matter in which it may be needed before a proper command decision can be made.

    3. Act as liaison between the Headquarters Command and Operational Commands. Interpret or help communication throughout the organization, and explain policy to the lower echelon.

    Each representative on the Joint Staff, such as the Army, Navy, and Air Force, must have a body of specialists working with him to assemble adequate staff reports. Each of these units of specialists might well be organized in the following manner. Within each staff member's supporting unit there would have to be a technical staff, an administrative staff, and a liaison staff.

    A personnel breakdown for such a typical unit might be as follows:

    A. Commanding Officer (the Joint Staff Representative)

    B. Executive Officer

    C. Technical Staff

        1. Intelligence
            3 Officers
            5 Enlisted Men

        2. Engineering
            1 Officer
            3 Enlisted Men

> 3. Operations
>   2 Officers
>   6 Enlisted Men
>
> 4. Logistics
>   2 Officers
>   6 Enlisted Men
>
> D. Liaison Staff
>
>   2 Officers
>   2 Enlisted Men
>
> E. Administrative Staff
>
>   1. General Office
>   2 Enlisted Men
>
>   2. Personnel
>   2 Enlisted Men
>
>   3. Supply
>   1 Enlisted Man
>
>   4. Finance
>   1 Enlisted Man

The above listed breakdown shows the major duties of the men assigned and they in addition may do such other things as the needs of the moment may dictate.

Spatial requirements of such a unit would be simple in nature. The various branches of the Technical Staff would need separate offices, but the general administrative staff could be lumped together. The commanding officer and the executive officer would, of course, require separate offices. Since many of the members of the technical staff would require the use of maps and photos in their work, a small library of these might be drawn from the intelligence section and kept on file. No special equipment or spatial

needs are required as equipment will be the usual desks, files, typewriters and telephones. As is customary in the military services, separate lavatories would be provided for the officers and the enlisted personnel.

INTELLIGENCE

Intelligence at Theater Headquarters level would be directly under the Central Intelligence Agency. This would be augmented by direct liaison with Intelligence at the Operational Command level. Its chief duty would be to advise the Theater Commander and assist in making strategy decisions. The intelligence sections of the Joint Staff units could also draw upon them for additional information.

A personnel breakdown for the intelligence section would be as follows:

    A. Commanding Officer

    B. Executive Officer

    C. Photography
            1 Officer
            4 Enlisted Men

    D. Photo Interpretation
            1 Officer
            2 Enlisted Men

    E. Bomb Damage Assessment
            1 Officer
            2 Enlisted Men

    F. Enemy Flack
            1 Officer
            1 Enlisted Man

G. Maps
      2 Officers
      6 Enlisted Men

H. General Intelligence
      3 Officers
      6 Enlisted Men

I. Document Security
      2 Officers
      6 Enlisted Men

J. Counter Intelligence
      4 Officers
      7 Enlisted Men

Provision must be made for the storage of classified material in a vault which would be theft and fire proof. Intelligence material is classified into four general groups: top secret, secret, restricted, and non-restricted. Within these four groups may be found any type of material, such as written, maps, photographs and moving picture film.

The function of the Intelligence unit would be to assemble and correlate material, maintain maps and photos in the skull practice or policy room, and to maintain and show selections from the film library. In addition this unit would route pertinent material to the various Operational Commands.

Spatial requirements for this unit would require separate offices for the commanding officer and the executive officer, and a general office space to house the rest of the intelligence functions. In addition to this, there would be required an audio-visual room for the showing of film and for use in intelligence briefings. Also a skull practice room.

HEADQUARTERS COMPANY

The Headquarters Company is the clerical branch of the Theater Headquarters. This organization does not perform clerical duties for the Joint Staff groups as this function is done by their own men. The Headquarters Company is concerned with the clerical duties pertinent to the proper administration of all the forces assigned to the Theater Commander. There is at present no material available which can be used as a basis for estimating the size of this group. It would be hard to arrive at any number as it would be dependent upon the amount of activity and the particular administrative set-up of the Headquarters. Therefore, for the purposes of this problem it has been assumed that this organization will consist of approximately forty officers and enlisted men.

Space should be provided for a general clerical area with desks, typewriters, files and an area of mimeographing. Provision should be made for the storage of office supplies. A vault for the storage of classified material and records will be required.

THE BUILDING

Since the possible site is so large there is little need to organize the building into a tight relationship.

The chief principle to be followed in the design of the structure is that of producing optimum flexibility. Since

the problem seems to indicate a continuance of the previously
mentioned type of high level command, new procedure and new
requirements are bound to evolve. This can best be provided
for if the proposed structure provides a maximum of flexi-
bility. This suggests a type of space crate which produces
bearing loads at concentrated points. By concentrating the
bearing loads at column points the intervening walls become
screens which can be removed at will. This would permit
growth or extension in almost any direction, as future needs
dictated.

Wherever possible, materials used should be those which
would demand a minimum of maintenance. Materials should be
used which will provide a maximum of safety in event of any
future enemy action. Both of these requirements suggest a
reinforced concrete structural frame. This concrete frame
might be coupled with integrally poured open web joists to
provide a roof structure.

This type of structure would permit a maximum amount of
fenestration to be used. Exterior blinds could be used
which would protect the windows from sunlight, seal them
against concussion, and could, at night, be used as blackout
curtains. These blinds should be light in color to help
reflect the heat of nuclear fission. A possible material
might be porcelain-finished steel, as is used in store fronts.
The major portion of the personnel will, by nature of their

duties, be confined to one area. The small number who move about would do so rarely. These factors point toward a loosely organized structure or group of structures. This loose organization is augmented by the mild climate of the area.
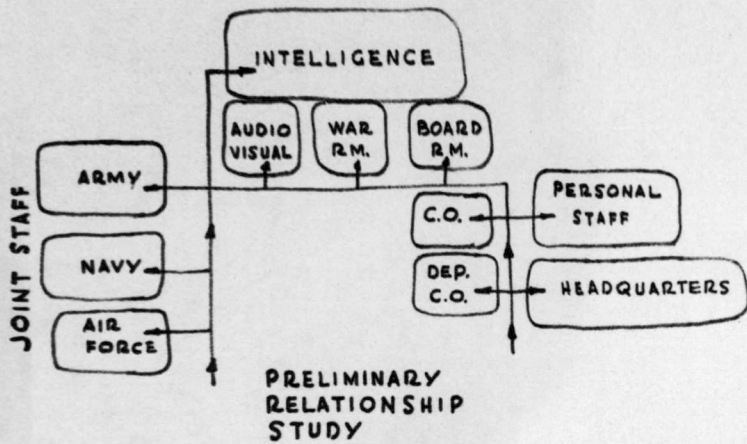
Access to and from the structure should not be confined more than necessary. The various departments will have outside visitors whose traffic need not interfere with the other departments. Demands on personnel by various activities will produce erratic pedestrian traffic which should not be routed through work areas.

In general the building design will, wherever possible, augment those policies discussed under personnel. Provision must be made to house all the units of command in a manner conducive to efficient operation and employee well-being. A loosely organized structure would permit greater opportunity for a change on focal length with a resulting decrease in visual fatigue, as well as a change of view which would be a visual relief. Attention should be paid to the elimination of employee irritations caused by such things as drafts, improper lighting, inconvenient work situations, and inadequate rest room facilities. Fenestration should be extensive so as to produce the maximum amount of natural light without glare. Interior finishes should be restful and yet warm in feeling so that the work situation will be pleasant and not

of the cold, factory, or impersonal type of atmosphere so
often found in military life.

Provision of a more friendly, cheerful work situation
would produce greater employee or personnel satisfaction
and in turn increase output. This was brought forth in
surveys and reports studied in the field of industrial ad-
ministration and could do much to help eliminate the well-
known inefficiency of military personnel.

Inter-departmental circulation might well be carried
on under a system of external covered walks. This would
be possible in such a mild climate and would eliminate the
necessity of heating and maintenance required should they
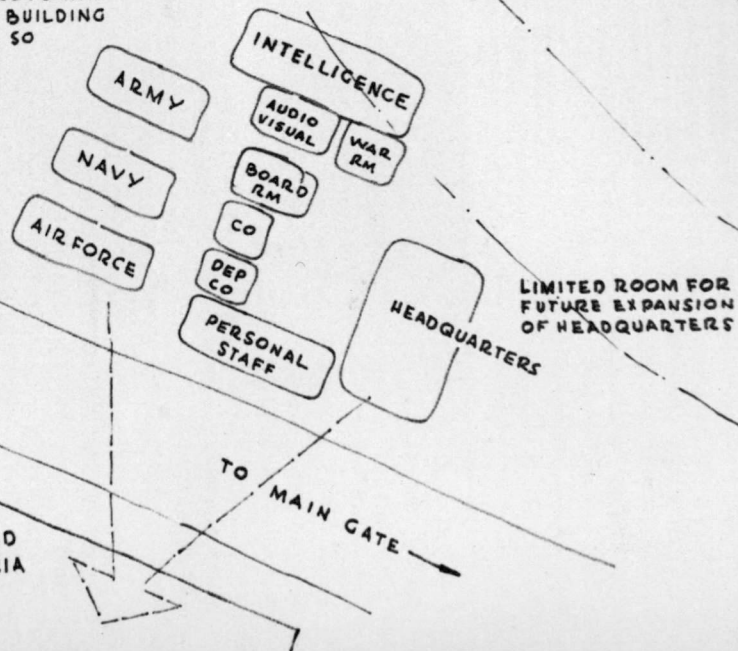be treated as interior space.

JOINT STAFF

INTELLIGENCE

AUDIO VISUAL | WAR RM. | BOARD RM.

ARMY

NAVY

AIR FORCE

C.O. | PERSONAL STAFF

DEP. C.O. | HEADQUARTERS

PRELIMINARY RELATIONSHIP STUDY

CONTOUR INTERVAL 5'

SITE IS GENEROUS......
NO NEED FOR BUILDING GROUP TO BE SO TIGHT....

INTELLIGENCE

ARMY

NAVY

AIR FORCE

AUDIO VISUAL | WAR RM

BOARD RM

CO

DEP CO

PERSONAL STAFF

HEADQUARTERS

LIMITED ROOM FOR FUTURE EXPANSION OF HEADQUARTERS

SITE AND RELATIONSHIP STUDY

TO MAIN GATE

PX AND CAFETERIA

MASS STUDY

RELATIONSHIP STUDY

FUTURE EXPANSION

PARKING

HEADQUARTERS

INTELLIGENCE

VAULT | WAR ROOM | AUDIO VISUAL

CONTOURS PERMIT SIGHTLINES OVER ADJACENT BUILDING

ARMY

BOARD RM

CO.

SEC

DEP CO

THESE UNITS HAVE MOST CONTACT WITH OUTSIDE PERSONNEL

PERSONAL STAFF

PARKING

NAVY

FUTURE EXPANSION

AIR FORCE

P.X. AND CAFETERIA
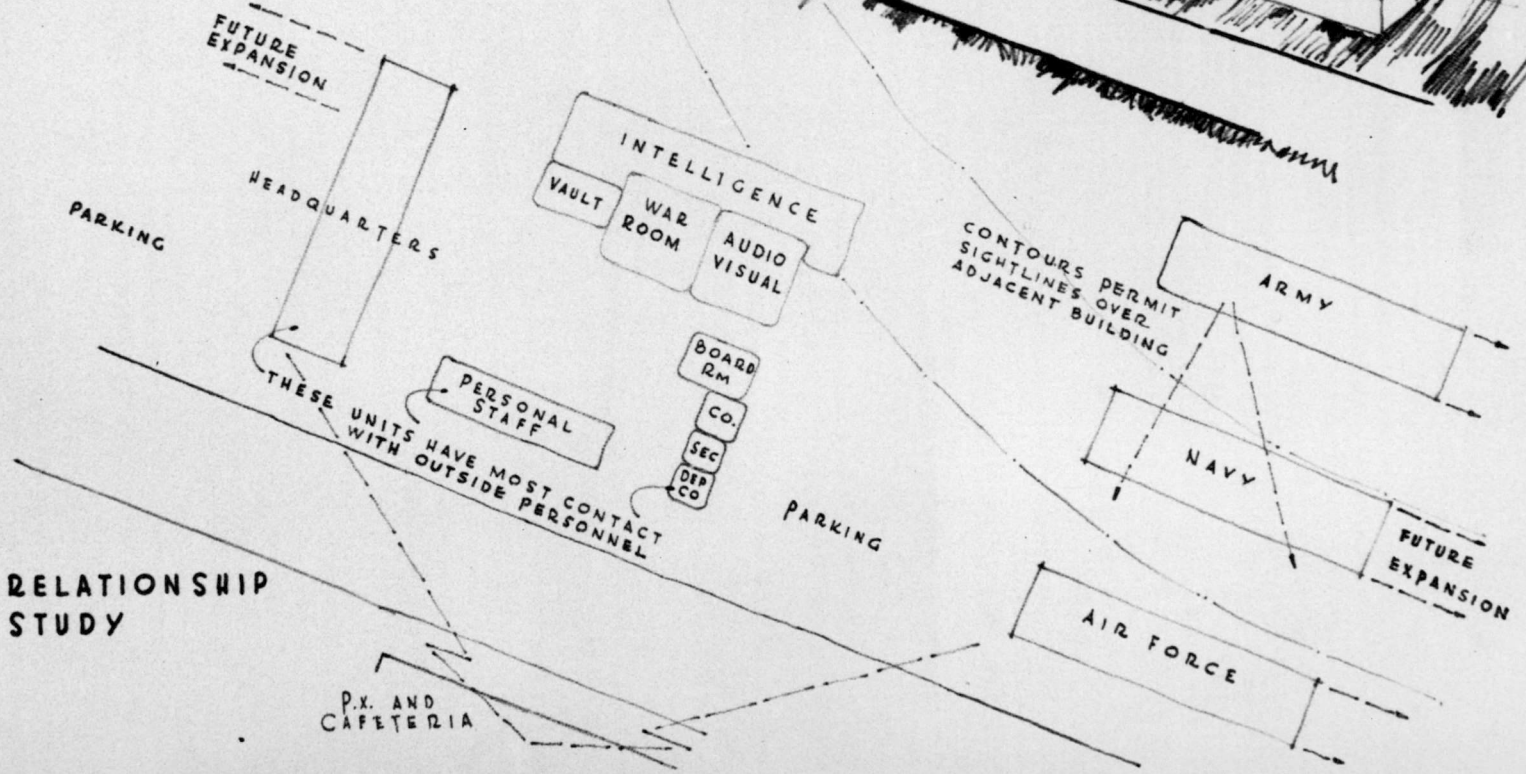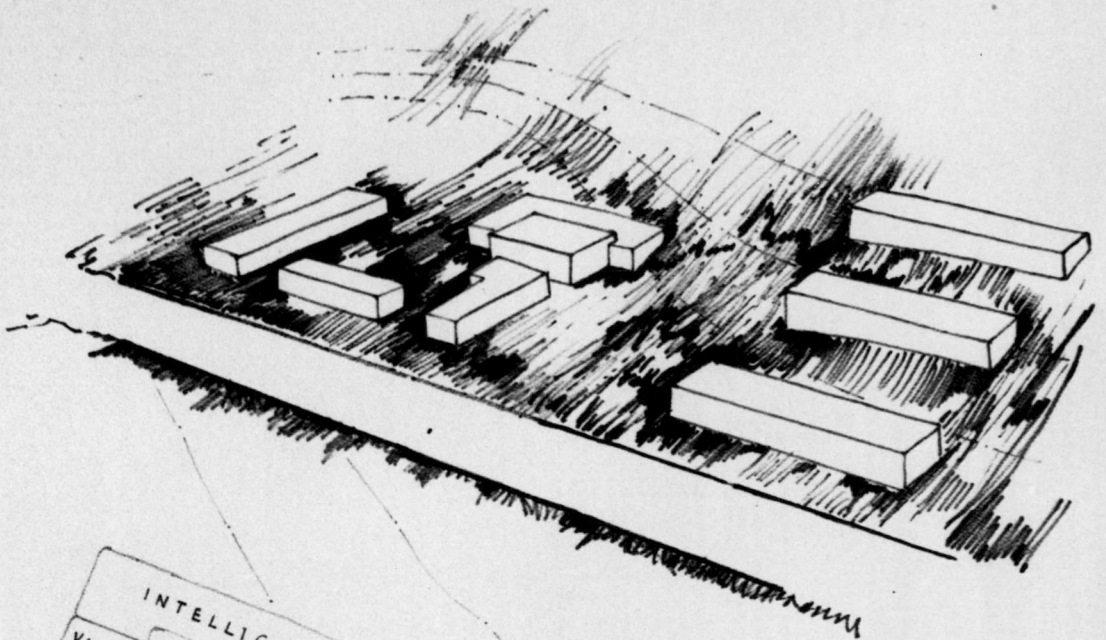
CONCLUSIONS

ON ARCHITECTURAL ADMINISTRATION

While we, for the most part, have dealt with adminis-
tration from a technical point of view, let us never for-
get that it is, among other things, a pattern of human
behavior.[1] Because administration contains so much of the
"human element" its problems are often psychological as well
as mechanical. For this reason the student of administra-
tion must, to a large extent, observe and reason like a
social scientist rather than a natural scientist. The
chemist or physicist must see a thing or touch it before
he will agree that it is there; the social scientist, on
the other hand, makes use of concepts as short-cuts in
analyzing group behavior. The student of administration
must do the same.

The importance of the role which administration can
play in the field of architecture should be more fully
realized. Every architect to more or less degree is an
administrator, but being in a creative endeavor makes a
difference in his administration. In the architect is

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[1] Glaser, Administrative Procedure.

placed the judgment sense; he evolves the broad aims and the architectural principles by which they may be achieved. It is not his task to check and measure every reveal to determine whether it should be one-half or one-quarter of an inch. All too often the architect who has no training in administration becomes so bogged down with administrative decisions of the same caliber that he loses sight of the broad picture. As a result he becomes a boss only and loses his identity with the work going on in the office.

To expect one man to master the vast range of knowledge necessary, and at the same time be proficient in all the various allied technical fields is unreasonable. Therefore it is reasonable and necessary that the architect make use of available experts in these various technical specialties such as structures and mechanics. To sublet the portion of the work that falls in these fields is necessary for the small architect but is really an unwholesome approach to the problem. The specialists can solve the problem, but too often view it only in the light of their specialty, or only have part of the total picture. This limited understanding on the part of the specialists prevents the truly integrated service that good architecture demands. Therefore, it seems that the solution is for the architect to work toward an office of sufficient volume that will support these experts as a part of the regular staff. This brings up the problem

of obtaining experts with top ability. Such qualified men would obviously be reluctant to work for someone else. The solution then seems to be the merging of talent in the form of a partnership. This would enable each field to perform that work peculiar to itself and still share their talents when needed.

The architect is in a different position from other administrators in that he cannot be versed in the language of administration alone and thereby produce the desired end product. His duties are concerned with creative tasks in which the mind and the human factor are ever present. The success of the architectural administrator rests upon the base of his professional capacity. He must first be a competent architect and secondly a proficient administrator. In any undertaking where the numbers of people grow large there must be a certain amount of dependence upon subordinates, or delegation of authority. It is a measure of the architectural administrator whether this be necessary dependence or exploitation.
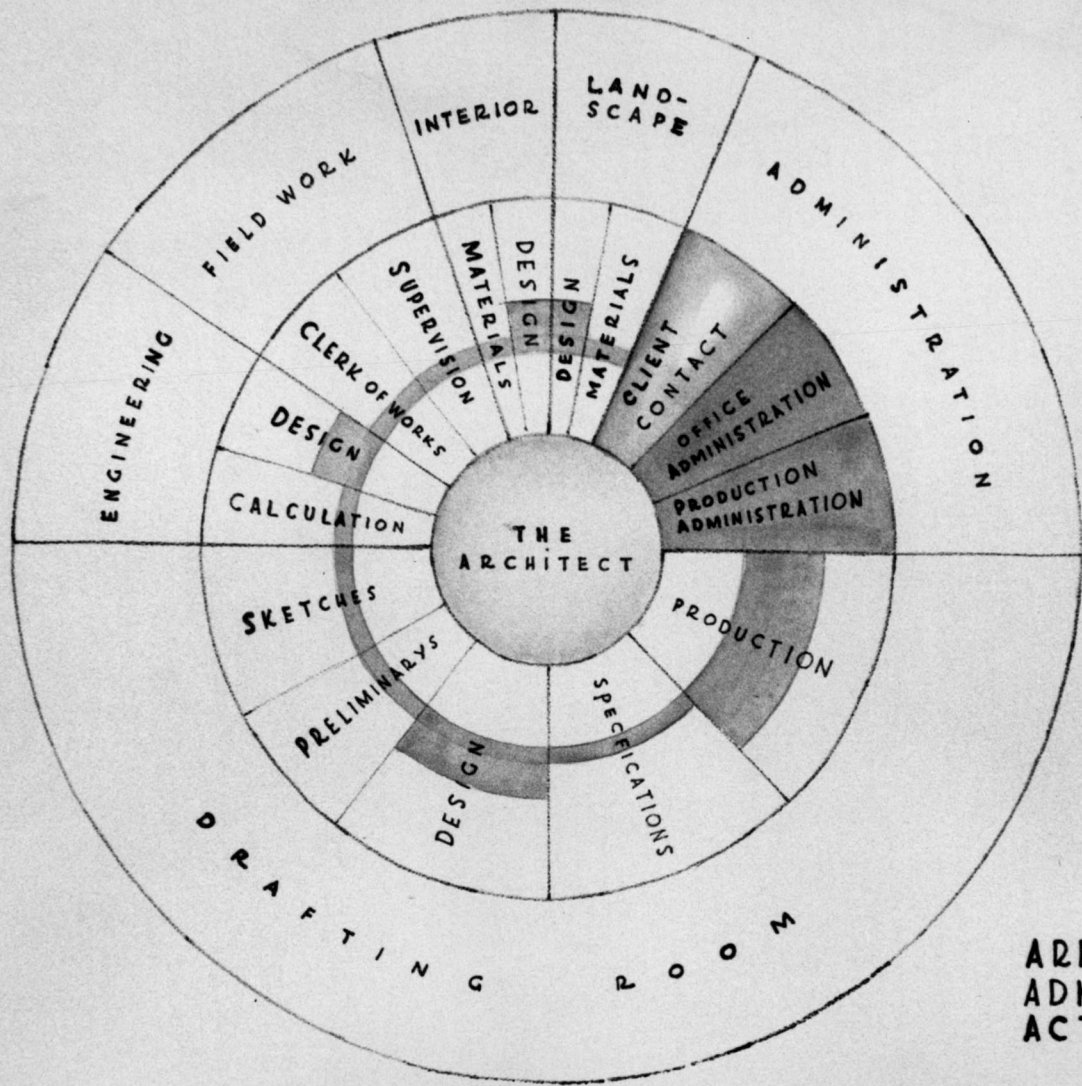
The architectural administrator is faced by problems which are outside the normal duties of production. For example he is not only faced with the normal personnel problems inherent in labor turnover, but also the problem of giving recognition to worthy subordinate personnel. A lack of such recognition or acclaim could be instrumental

in causing the employee to go elsewhere for employment. This could be a serious loss to the firm.

Another duty of the architectural administrator which is apart from normal routine is the planning for economic and seasonal fluctuations. Planning for economic cycle fluctuations would almost insist that the firm hedge against periods of recession by obtaining outside resources or assets. By spreading the economic base of the firm, slumps in a sector of the economy would still permit a reasonable income. Planning for seasonal slumps in business activity is a matter of office organization. This problem is worthy of concern. Either the firm stays to a reasonable size which can be kept busy or else it must fluctuate with the number of jobs and the season. If the firm is kept small the labor problems of expansion and contraction are minimized, but additional work and revenue are sent begging. It is a problem for experience to decide.

In attempts to produce an organic picture of the organization of an architect's office the following fact was brought out: the various functions of architecture are so closely intermingled as to be difficult to show apart. The inter-unit relationships are so complex that to show them in the usual type of organization chart is almost impossible.

Such an organization chart would fail for our purpose, which is to show the position in office organization where

INTERIOR

LAND-
SCAPE

FIELD WORK

ADMINISTRATION

ENGINEERING

SUPERVISION

MATERIALS

DESIGN

DESIGN

MATERIALS

CLIENT
CONTACT

CLERK of WORKS

OFFICE
ADMINISTRATION

DESIGN

PRODUCTION
ADMINISTRATION

CALCULATION

THE
ARCHITECT

SKETCHES

PRODUCTION

PRELIMINARYS

SPECIFICATIONS

DESIGN

DRAFTING ROOM

AREAS OF
ADMINISTRATIVE
ACTIVITY

either the architect or an architectural administrator exerts his influence. If the office organization includes an architectural administrator then his function is to coordinate activities and at the same time unify the issues to be brought before the architect.

ON THE CURRICULUM

The complexity of modern architecture shows an increasing need for administrators in the field of architecture. For this reason this program of study was undertaken. This being the first time such a program has been tried, there was no set curriculum. For this reason a good deal of trial and error was necessary in finding adequate subject matter. Some courses which were tried were abandoned because the subject matter was too detailed and not broad enough in scope. It is for the administrator to know that there are psychological tests to be used in personnel management and what personnel management can do for him rather than to be able to construct one of these tests. The most helpful courses were found in the school of Political Science, but there, due to the strong influence of the major subject, all information concerning administration was from the viewpoint of government. Two courses worthy of note were Municipal Administration and Introduction to Public Administration. Municipal administration was valuable for two reasons. First it demonstrated the idea of "span of control" through the City Manager plan,

and second because it gave a picture of municipal government
with which the architectural administrator is always coming
in contact. The second course, Introduction to Public Ad-
ministration, was probably the best source of information
found. This course approached administration from many of
its basic problems, such as the place of the expert in ad-
ministration, the limits of the administrators ability to
administrate, and the problems of organizing human activities
on paper. This course could be the basis for a new course
in administration. Dr. Wengert brought great insight into
the problems of administration to this course. If a new
course based upon such insight were to be formed, with
Claser's Principles of Administration used for a text, the
result would be a course pertaining to the problems of
administration as pure administration and not as the problems
of government. Succeeding terms might be devoted to the
importance of personnel problems based upon the discoveries
brought out in such texts as Management and the Worker by
Roethlisberger and The Industrial Problems of an Industrial
Civilization by Mayo. These books bring out many factors
of personnel behavior which would be particularly per-
tinent background material for any architectural student.
It is understood that the next school year will see the
start of a course in semantics which might prove valuable to
the administrator. The importance of the problem of communi-

cation has already been discussed, and a study of semantics might help eliminate some of the "gobbledegook" of technical language, as it has been called in governmental circles.

The writing of this report makes apparent the need for further training in the writing of administrative reports. Should the role of architectural administrator come into general usage, the writing of such a report would become a regular part of his duties. The architect in his relationships with the public could also benefit from such training. Architects, such as Ernest Kump of San Francisco, who make programming of future activities a separate function, worthy of a separate fee, could also use such training. An administrative report could also become a definite part of the activities of City Planning.

An administrative report bears a great resemblance to the reports prepared by staff officers in the military services. The military services conduct special schools which teach, among other subjects, the proper way to write staff studies. A college course could be based upon information similar to that used in the military schools. Such information could be obtained either from military sources or from personal observations of local people who have attended such a school.

In the future it would seem that the architectural department should offer, through its special studies pro-

gram, a course dealing with some of the more general administrative problems which occur in architectural practice. It might be hoped that the bulk of the material need not be sought outside the school of Architecture and that the multitude of experience which the various staff members have had could be contributed.

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