

**SPANS OF RESPONSIBILITY**

**An Evaluation of the Organization  
of Selected Institutions of Higher Education**

**by**

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of the University of Maryland in partial  
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of Selected Institutions of Higher Education**

<b>Chapter One</b>	<b>Introductory</b>
<b>Chapter Two</b>	<b>Review and Statements of Principles</b>
<b>Chapter Three</b>	<b>The Study of Spans of Control</b>
<b>Chapter Four</b>	<b>Summary and Conclusions</b>

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## PREFACE

The major objective of this study is to present a picture of the organization of institutions of higher education in the United States.

The organizational plans of most institutions show a generally consistent pattern but vary widely in the details of relationships among the components of specific colleges and universities. An effort is made in this dissertation to discover organizational principles and factors which are common to most of our stronger universities and to evaluate the deviations from this common pattern. An attempt is also made to measure effectiveness of various organizational plans developed at specific institutions of advanced education.

My view-point is one of impartial curiosity rather than critical judgment or judicial evaluation. I believe, furthermore, that such a study will give valuable insight into the organization of universities.

I accept the proposition that any complex organizational structure is made up of small groups, each supervised, for a time at least, by a single individual. Such a complex organization will have a specific mission or objective. The groups which are components of this complex organization in turn may have varying missions and objectives, but all missions support the overall objective of the complex organization. In addition, as these small groups are integrated into larger groups, a next higher level is constituted, made up of the leaders of the basic groups. The responsible heads of these groups of leaders in turn form a third level of responsibility. Thus a pattern of small groups, each with its



responsible leader may be integrated into a complex organizational structure, but this complex organization retains throughout the principle of small groups each with clear and non-overlapping missions.

Many of the statements and conclusions arrived at in this study will be obviously colored by my experience with educational institutions and projects connected with the Armed Forces. In some thirty-five years of experience with various components of the Armed Forces, about three-fourths of my time was spent at educational institutions. My experience was almost equally divided between educational institutions under the supervision of the Army or the combined arms and those which were civilian colleges and universities. Almost as much time was spent in teaching as was spent in some student capacity, research, or the writing of textbooks or articles for the Armed Forces.

Recently I spent six years at the Command and General Staff College at Fort Leavenworth, both during and after the War years. The wholesale education of some fifteen thousand Reserve and Regular officers, called in from theaters from Africa to the Philippines and from Oslo to Okinawa, offered an opportunity to evaluate the effectiveness of the educational backgrounds of these specially selected students. They averaged about thirty years old. They ranged from high school graduates to Ph. D's., with the mode at two years of college. There were many reasons to question the effectiveness of our institutions of higher education in training these specially selected military leaders when measured by their advancement in collegiate credit hours

or years of study at our universities. It almost seemed that, measured by leadership in and during war operations, peak effectiveness was reached before the students achieved their degrees from college.

More recently my experience as an assistant to the Dean of the College of Education at the University of Maryland, as a representative for the United Nations Information Center, and subsequently as Assistant to the Dean of the College of Special and Continuation Studies, have changed materially my views on the functioning of institutions of advanced education: My experience with the College of Special and Continuation Studies included frequent conferences and coordination with most of the other deans of the University and their department heads as well as the two hundred instructors and professors teaching the off-campus courses each semester. Included in this task were most of the administrative functions pertaining to the Dean's office but augmented by such practical and basic work as the actual advising and enrolling of students at off-campus centers, the designing and adjusting of programs of courses at some forty off-campus centers, and the coordination of these courses with the Information and Education personnel at centers pertaining to the Armed Forces.

Problems connected with these off-campus programs included the initiation of measures tending to safeguard such essentials as academic student advising, maintenance of academic standards, the preparation and justification of budgetary data to support these

extensive programs and the coordination of details of the program with the President and his principal staff members, including the Dean of the Faculty, the Director of Admissions, the Registrar, the Comptroller, the Personnel and Placement Officer, and others. To their friendly advice and official assistance as well as their unfailing good humor are due many of the mellowed reservations and limiting statements contained in this study.

I take pleasure in acknowledging the assistance and guidance of a number of persons who helped in the preparation of this study. Without Dean Harold Benjamin's stimulating advice and personal guidance, both on and off the campus, this study probably would have remained in note form. To Professor Clarence A. Newell is due my gratitude for his discussions on school administration, including primary, secondary and advanced educational institutions, and the legal structures which govern and support such institutions. Professor James A. Van Zwoil contributed valuable materials on the financial structure and support of educational institutions. His discussions on the principles of public relations as applied to advanced education were especially stimulating. To Professor Gladys A. Wiggin I am indebted for her seminar and discussions on the techniques of research and historical writings. Professor Alvin W. Schindler's inspiring talks on educational leadership, both from the historic and the current and practical view-points, did much toward explaining many of the variations amongst our leading colleges and universities.

And, finally, to my wife, Enriette, goes my heart-felt gratitude for her understanding in providing a quiet place to work and study.

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May 1950

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## CHAPTER I

### INTRODUCTION

#### 1. THE PROBLEM.

The purpose of this dissertation is to study current practices and trends in the organization of institutions of higher education, with the objective of indicating some methods of implementing such organizational and control patterns as will conform to generally accepted principles of organization and control. The need for a study of this type is indicated in the brief review of some of the organizational problems which universities and colleges have encountered during the past decade. Some of these problems are outlined in the paragraphs following.

Institutions of higher education have grown rapidly in number and in size during the past half century. The ten years from 1940 to 1950 present a particularly disturbing pattern. During 1940-45 students and instructors were lost to the War effort. During 1945-50 classes were swollen by students delayed because of their absence in the Armed Forces, by veterans programs and benefits, and by a general turning toward more education as a panacea for national and world-wide disturbances and unrest. The situation in 1950 was made worse by the tendency of teachers of all levels to be held in or attracted to Federal or commercial employment.

Organization and leadership in higher education and the corresponding control of our colleges and universities have fluctuated correspondingly. Before and during the war years, institutions of advanced

education trimmed expenditures, reduced staffs and faculty to meet the shrinking student bodies, and tried in other ways to adjust to decreasing returns from investments and the accelerating devaluation of the dollar.

After the war, with the return of the veterans, the suspension of the draft, and the rise of unemployment, institutions of higher education were asked to do an about face almost over night and to absorb somehow these vast numbers of students. This absorption of the veterans was accomplished in a fairly orderly fashion, but at an obvious loss of control, and with a growing confusion among university staff and faculty because of overloads.

The current wave of large classes and increasingly complex curricula was accompanied by little or no changes in the organization or control of the universities. Top administrators and faculty deans had little time to reorganize and decentralize so that they could provide for the adequate supervision of the swelling hordes of students and instructors and pay reasonable attention to many new, practical problems.

Whatever may have been the contributing causes and factors, many presidents, administrators, and faculty members at the universities and colleges have extended the scope of their personal supervision and responsible control beyond good practice and often beyond human endurance. Some have grown accustomed to the gradually increasing loads because of necessity when the student enrollment mushroomed far faster than the return of the younger faculty members from their war assignments. Many have accepted and continue to retain spans of control beyond their own or anyone else's ability. Too many fail to demonstrate in practice the vision, the tolerance, and the flexibility which they have been teaching in their classrooms.

Fortunately, not all institutions of advanced education are suffering in this way or to this degree. Most organizations are stretched to the limit of elasticity, even to the breaking point; a few show only slight strain. Many retain their organizations, but add assistance on each level; an insignificant number are being analyzed, changed frequently, and made to meet the actual fluctuating loads and missions.

Before discussing possible solutions to the situation, as reorganization, decentralization, and proper spans for control purposes, it seems desirable to examine the functions of control itself.

The problem then is to study practices and trends in organizational patterns at institutions of advanced education, to evaluate these actual practices against accepted principles of organization and control, and to seek a practical plan for implementing more effective organizational and control patterns. This problem includes the constant evaluation of such plans for reorganization with due regard to the student view-point, to such personnel problems as faculty morale, and to the vital necessity for maintaining academic standards during the proposed reorganization. An essential component of any acceptable plan for reorganization must be its acceptance of the democratic methods of control and the exercise of authority. Any plan for organization must be founded on the objective of teaching democracy in a democratic fashion, with due regard to the inclusion of social studies and studies in the humanities. This study accepts without further discussion the basic principle that democratic education seeks the betterment of the individual and through him the betterment of society and social conditions which in turn lead to improved political conditions on the local, national, and eventually the global, levels.



## TWO TYPICAL EXAMPLES OF ORGANIZATIONAL PATTERNS.

Perhaps the problem is more specifically expressed by two examples of universities, one of which has a planned organization, and the other which has developed by casual additions as the need therefor arose without much planning for the future nor thought on the efficiency of the organization and the leadership. Let us visualize two universities, each with about 10,000 students. One of these has given careful thought each year to improvements in its organization. It has made the basic assumption that decentralization of authority is essential to good operation. Accordingly the president of the university has gathered around him five experienced educators and administrators. These five heads each direct the activities of a division such as the activities of the lower division college, the upper division college, the planning and public relations division, the administrative division and the business and finance division. To allow himself the maximum of freedom, the president has designated an assistant or vice-president to coordinate the activities of the five division heads on routine matters or on matters on which policies have been established. This organization permits the president the maximum of free time to become acquainted with the personnel of his university, both faculty and student, and to be absent on extended visits, on missions of good will and for the promotion of better public relations.

In contrast to this simplified organization at the top level, many of our oldest and strongest universities still show little evidence of affecting changes in organization to meet new conditions and situations. Too many of our universities have their presidents surrounded by an impossibly large number of assistants and leaders directly responsible

to the president. A typical example of this type of university organization would have some twelve college deans reporting directly to the college president. In addition the president would have daily or frequent conferences with each of the administrative heads in his faculty. These might number as many as fifteen. These two divisions with their twenty-seven group chiefs would account for the internal affairs of the university. In addition to these, the president would deal with some ten community leaders, business and banking representatives and many political chiefs of varying importance and stature. If there were ten of these outside chiefs, the president would be dealing frequently and habitually with some thirty-seven persons, each feeling a certain responsibility toward him or having definite claims on his time, or looking to him for leadership and guidance. Such a situation would keep the president constantly preoccupied with routine problems and leave him little or no time and energy for the necessary planning and major decisions on problems of far-reaching importance.

It is not unusual with this second type of university organization for the president to designate in fact several assistants who in name have responsibility for executive action and decision in routine matters, but almost invariably they too have no fixed or specifically defined missions but bear the burden equally with the president for dealing with the entire thirty-seven leaders and chiefs who deal with the president. The result is that these assistants to the president in turn become equally harassed and confused for lack of definition of responsibility. They deal with so many different matters that they tend to confuse each other by intermittently making decisions in matters previously passed on by another of their group. How many of us have attended administrative

board meetings of thirty to fifty members and listened to the president or a group of his staff members debating minor matters with groups or factions in the assembled deans and department heads.

The above hypothetical example of two differently organized universities immediately raises the question as to how the third levels of the two organizations would be constituted. It is apparent that in the first university with five division heads looking to the president for guidance, that there must be many deans of colleges and administrative chiefs who would seldom consult with the president. Whereas in the second university, with thirty-seven chiefs reporting directly to the president, each of the deans and administrative heads, as well as community and political leaders, would feel free to demand audience with the president at any time. Perhaps the answer is already apparent. With five division heads reporting to the president, the division heads will have adjusted and coordinated all of the routine matters, leaving only special and urgent problems for the president's personal attention. In this type of university organization the president will habitually have the time and the energy to deal briefly and effectively with such problems, particularly if the college dean or department head who has the problem confers with the president, with the division head concerned present to brief and advise the president on the background and merits of the problem at issue.

In the second type of organization, the president with his thirty-seven heads reporting directly to him with all of their problems, is usually so completely engaged with the entire academic and administrative load that he has little or no time to deal with anything except the routine problems and such only briefly.

In well-organized universities the small span of authority is usually repeated on the various levels from the president and his personal staff down to the division chiefs and thence from the division chiefs down to the deans of the colleges or schools. In the example cited, the lower division college usually will have about five schools or departments, each with its academic field or major lower level instructional area. The upper division college similarly would have five or six departments each specializing in a major academic subject. The head of the administrative division would deal with the conventional heads or deans of such activities as the Admissions office, the Registrar's office, the Cashier's office and the Personnel office. In like manner the planning and public relations division would be principally concerned with long range plans for the future and with public relations contacts which would coordinate and support such plans. Finally the business division might itself contain a fiscal planning section, plant maintenance section, a current expenditure section, and an audit section.

In the second type of unorganized university, the thirty-seven heads reporting directly to the president might by chance only have a varying number of department heads, some as low as two, others as high as twenty, a situation which is not unusual in many of our universities. The result of the situation is that some capable deans and department heads have too little responsibility or activity to fully engage their high ability while others may be in almost the same situation as the university president with fifteen or twenty department heads reporting directly to their college dean.

The comparison between the above two types of university organization could be carried on down to the level of the classroom instructor or to

the varied number of students in different classes. In the well-planned university, careful attention is given to preventing the over-crowding of each class by limiting enrollments or by setting up additional sections of the more popular classes. Where such classroom planning is not given adequate attention, there is a tendency to find many instructors carrying classes with enrollments in excess of one hundred, particularly if they are effective teachers, and other instructors carrying a lesser number of classes and small enrollments of five to ten in the classes they do have.

To summarize the above comparison between the two universities, it would seem that organization requires frequent review and careful planning. That without such constant evaluation and adjustments, universities drift into organizations which are highly inefficient from the view-point of making most effective use of the abilities of the individual members of the faculty and more important in the effectiveness in the classroom instruction, advising and counseling of students.

It is admitted without argument that local conditions, customs, and historical precedent have a great influence on the organization of our larger and stronger universities. However it is equally apparent that the cultured sapling which is carefully watched, trimmed, guided and nourished, tends to grow into a well-rounded, symmetrical and integrated tree. On the other hand, the sapling which is at the mercy of storms and drought and the chance injury from neighboring trees is likely to eventually grow into an unbalanced and inefficient member of the grove. The problem seems to be one of long-range planning rather than short-time expediency. In the case of the two universities described above, it will be shown later that the number of persons required to staff each of the two universities

will be approximately the same. However in one instance, each of the higher level heads or leaders will have a specific mission and will control the activities of a relatively small number of chiefs on the next lower level. In the second type university, there is an atmosphere of overwork, of insufficient time, of long hours, of overlapping of missions and responsibilities with a resultant feeling of confusion and futility.

As in any organization dealing with social problems and projects, universities tend to be influenced greatly by personalities. Some strong leaders tend to attract to them men of ability and stature, others with leadership ability tend to discourage subordinates and eventually find themselves surrounded by an ever-growing group of subordinates in whom the leader has little confidence and trust. In the first instance, the leader has organizing ability and personal magnetism. In the second instance, there is an atmosphere of drive and clashing personalities. It is not unusual to find that the second situation could have been avoided by the careful selection of assistants on all levels with a view to their long-range leadership potentiality.

The next section will indicate a method of evaluating organization with a view to establishing the desirable composition and attributes of the organization of a small group. In turn the small groups will be shown susceptible of integration following the same organizational principles, into complex organization structures, particularly as they apply to colleges and universities.

## 2. THE TREATMENT OF THE PROBLEM.

The arrangement of the parts of this dissertation follows generally its purpose, which is to study current practices and trends in the organization of universities and colleges with a view to indicating methods of implementing and adopting generally accepted principles of organization and control. Chapter II reviews the more generally accepted principles of organization, leadership and control. Chapter III outlines the actual organizational patterns at some typical institutions, and presents a proposed implementation of the principles presented in Chapter II to one of the institutions. The treatment of the problem is outlined in more detail below.

This study, then, reviews in Chapter II the commonly accepted principles governing organization for any large scale activity and the network of control agencies. It also establishes relationships, missions, and objectives within the organization. The study presents a list of principles of leadership as applied specifically to education at institutions of advanced learning, and discusses the influence of leaders on the control of educational organization. As a measure of evaluation of leadership the study develops the subject of desirable sizes in spans of control; that is, the number of persons whose activities can be efficiently directed by one person designated as the leader.

Chapter III develops the theory of spans of control, both theoretical and practical. It presents certain mathematical principles and tables which show trends resulting from various sizes of groups controlled

by one leader and extends these principles to the six levels commonly encountered in the complex organizations of our larger universities.

The above theoretical spans of control and their trends are compared with some national trends and evaluations as applied to colleges and universities.

Chapter III continues with a detailed study of a group of selected colleges and universities with particular reference to their organization rather than spans of control utilized and the type of leadership directing or controlling the institution.

Finally, Chapter IV gives a brief summary of the study with specific recommendations and suggestions for further research.

This study deals with spans of responsibility, as the title indicates. However, the term "spans of control" is used more frequently in the dissertation than "spans of responsibility". It should be noted that for the purposes of this study, the two terms have been treated as practically synonymous. Control may be considered a desirable element of responsibility, or a prerequisite for the proper fulfillment of the obligations of responsibility. Furthermore, it was hoped that any autocratic connotations which might be found in the word "control", would be dissipated by the more democratic implications of the word "responsibility".



### 3. LIMITATIONS

The limitations of a study of this type are obviously many. The principles governing the organization and administration of colleges and universities have been set forth in general terms in many references, texts, and critical writings. Unfortunately the application of these principles is more difficult to find in the writings of educational administrators. Local situations and problems appear to have greater influence in the application of organizational principles than do the objectives implied by the principles. Surveys of specific universities frequently indicate that while it would be desirable to implement certain accepted principles of organization, local conditions involving personalities and tradition delay the immediate and direct activation of these principles.<sup>1</sup> There is often an atmosphere of compromise, expediency, and patience which appears to hinder any clear-cut establishment of recognized and commonly accepted principles of organization and spans of responsibility. The clear-cut decisiveness of business and military reorganization appears to be less practical when applied to educational institutions.

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<sup>1</sup>Examples include:

Kent, Raymond A., e.a. Louisiana State University. (Washington: American Council on Education, 1940).

Capen, Samuel P., e.a. Public Higher Education in Utah. (Washington: American Council on Education, 1940).

Marbury, William L., e.a. Higher Education in Maryland. (Washington: American Council on Education, 1947).

Hammond, Harold P. Report on Engineering Education in the University System of Georgia. (Atlanta: Georgia School of Technology, 1942).

In contrast to these apparent difficulties in implementing accepted organizational principles at leading institutions of advanced education, are the rapid changes made in the organization of armed forces colleges. Because of the urgent life and death nature of military operations, the organization of their advanced educational institutions affects their effectiveness and may be changed rapidly to achieve efficiency regardless of the personal feelings and traditional prestige of the individuals concerned. As expressed by a distinguished civilian educator<sup>2</sup> who was on war time active duty at the Command and General Staff College, radical changes in military instructional procedures may be implemented almost overnight, while commensurate changes at civilian universities might require years to consummate.

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<sup>2</sup>Jacob Orleans, educational advisor to the Commandant, Command and General Staff College, Fort Leavenworth, Kansas, about 1945.

#### 4. VALUE OR USES OF THIS STUDY

From the foregoing it is apparent that this study is directed more toward the implementation of principles of organization, leadership and control rather than the exploitation of any one most effective pattern of organization and control for institutions of advanced learning. The study attempts to show the benefits of efficient organization and provide some practical methods of converting existing organizational patterns to simpler and more effective organizational structures.

Finally, this study should provoke further research in the many special areas not touched on in this writing, such as the detailed total reorganization of our larger universities on a functional pattern rather than on the traditionally academic frame-work. If this study does no more than show some of the advantages of decentralization of both mission and authority it will have achieved its purpose.

In these days of expanding power and empire building, there is the possibility that in many minds the purpose and objective of our democratic institutions of advanced education may be entirely forgotten. The view-point of the student is after all the predominating influence. Organization and control are but the frame-work or ladder by which he climbs toward a fuller and richer life. Where the student achieves his educational goal with a minimum of interference from his instructors, faculty members, and administrators and with maximum of growth to himself, there the organizational pattern and control principles will have been most effective. Other measures for the evaluation of organization and control in

our universities such as the rate of growth of the student body and the building of extensive classrooms, laboratories and athletic stadia are usually transient and superficial unless supported by an earnest, hard-working and satisfied student body.

## CHAPTER II

### REVIEW AND STATEMENT OF PRINCIPLES

This chapter seeks to develop a concept of organization with its implementing leadership, both seeking to exercise control. Generally accepted principles of control, of organization, and of leadership are presented, with special consideration to the applicability of these principles to universities and colleges. The fourth section of this chapter deals with spans of control, because the implementation of control requires the definite grouping of personnel and the establishment of areas of responsibility and of authority.

#### CONTROL

Control has at least two connotations, one positive, the other negative. The positive view of control visualizes a pattern or guide for a line of conduct or activity such as the control sheet of a budget or the written curricula of college courses specifying the educational pattern to be followed by students in their advance toward degrees. The negative concept of control implies restriction or the prohibition of free activity. As will be shown later, most organizations find it necessary to recognize both definitions of control. The positive meaning of control implies inspiration, encouragement and guidance toward an objective. The negative meaning of control implies coercion and penalties for deviations from prescribed lines of conduct.<sup>1</sup>

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<sup>1</sup> Jerome Dowd, Control in Human Societies (New York: D. Appleton--Century Company, 1936) pp. 2-8.

Examples of the two concepts of control are constantly before us. The positive or constructive concept of control is found in the influence of public opinion toward the amelioration of unsatisfactory conditions or unjust laws. Public opinion implemented through organization thus leads to constructive and progressive corrective action. The penalizing connotation of control is probably best illustrated by police action, court fines, and imprisonment for violations of laws and ordinances. Applying these two thoughts of control to institutions of higher education, control is exercised positively by the staff and faculty in encouraging the student body in their studies and academic advancement. Similarly, control is exercised in a negative sense by the same group, over the students who fail to meet academic standards and are dismissed from the university.

One basic function of control may be summarized about as follows: control is essentially the exercise of authority. As such it may be implemented by individuals such as the university president, the college dean or the classroom instructor. Such control is customarily based on some code, law or set of rules founded on the expressed opinions of the community, on past experience, tradition, or legislative action. The implied impersonal basis for control is in direct contrast to the exercise of authority which is personal and results from positive action by duly authorized individuals.

A second function of control is formally to set forth the purpose, objective, or goal of a group of activities. For example, the university is guided administratively and academically by duly announced missions of the university, by objectives to be reached each semester, and by the underlying democratic principles which support educational efforts

in our colleges and universities. Public opinion enters into this type of control in establishing methods for achieving the educational objectives. This function of control is largely impersonal and guides those exercising authority as outlined in the preceding paragraph.

A third function of control has to do with setting forth ways and means of achieving objectives. This function of control generally follows the pattern of most of our laws in that it sets forth the methods and procedures to be followed, relationships between individuals and groups and prescribes usual time limits in achieving intermediate and ultimate objectives. This concept of control almost invariably carries with it penalty clauses if its provisions are to be followed and be practically effective.

The last item in the above paragraph, that is the penalty function of control, itself may be a major function of control. Most university students are spurred on toward achieving their educational objectives, usually leading to a degree, by their natural desire to benefit from the advantages of education. In this they are sustained by their ambition and inspired by their faculty advisors and classroom professors. Unfortunately, many are equally motivated by their fear of failure and dismissal from the university.

Control which has as its sole objective the devising of systems of discipline is rare in colleges and universities. Admittedly, in a sense, all instruction and education is disciplinary in part, in that it teaches mental control and both mental and physical disciplinary efficiency. However, education controls through inspiration and encouragement rather than through coercion and fear.

Two different categories of control are implied by the expressions, paternal control and social control, the first being typified by the attitude of the father to the young child or the dictator to the slave. Social control implies the voluntary and considered assignment of control to a gifted or efficient leader. This second type of control is typified in our democratic society by the free election of our political leaders and in a sense by the voluntary submission on the part of the students of our universities to some of the arbitrary rules and regulations governing these institutions. In a slightly different sense paternal control is typical of the strong leader, whereas social control is usually democratic control as expressed by public opinion or through the free electorate.<sup>2</sup>

In our institutions of advanced education, paternal control probably was typical of the early colleges of the United States. This domineering and intolerant attitude was the accepted pattern well through the colonial period and still persists in some of our church institutions of higher education. The social control of our colleges generally commenced its ascendancy with the early conceptions of freedom of the times of the Revolutionary War. However, social control of colleges in general lagged far behind social control in political institutions, in religion and in economic practices, probably because of the pre-occupation of the universities with history and historical precedent and tradition. Obviously this trend away from paternal control of our colleges and universities toward social control would not

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<sup>2</sup> Ibid., pp. 14-19.



proceed everywhere at the same pace. Some of our largest colleges of the early colonial days encouraged freedom of self-determination. However, the trend toward liberalism, particularly in the smaller colleges appeared to lag noticeably behind social advancement in other activities.<sup>3</sup>

Control then visualizes four tasks: the exercising of authority, setting up of an objective, prescribing standards, and influencing discipline. The trend from paternalistic control toward a democratic or social control was facilitated in our colleges and universities largely by ambition, by seeking increased individual opportunities, by the incentive toward social advancement and by the desire to achieve personal wealth, power and leadership. Social control has always been attractive in that it appears to offer greater opportunity for individual advancement and a lessening of the restraint of discipline. It is only in recent times that we find the processes of a pseudo type of social control leading to disasters and chaos more devastating than those wrought by our most oppressive tyrants and dictators of history. The controlling forces of the Soviet Union profess to be following all of the principles of social control, yet have achieved terror and privation within their own boundaries beyond anything in recorded history. They have utilized the frame-work of social control to establish a despotic bureaucracy.<sup>4</sup>

Specific examples of the two types of control are found in the differences between our democratic community and state supported schools

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<sup>3</sup> Ibid., pp. 136-147.

<sup>4</sup> Ibid., pp. 136-175.

as compared to some of our church supported schools. The state supported schools are presumed to express the free opinions of the citizens of the community which they serve whereas there is a trend toward prescribing fixed curricula and closely controlled lines of conduct and even thought in some of our church colleges and universities. The fact that most of the church colleges and universities are a benign influence and generally follow democratic principles still leaves the distinction but without much practical difference.<sup>5</sup>

Control has other connotations such as the control or command exercised by the military leader which is usually tolerated because of the urgency of the business at hand. Control however, may be equally effective if it partakes of the nature of supervision with suggestions, discussion and coordination leading to specific elements of control.<sup>6</sup> A still milder form of control is implied in the submission to authority or conformance to social custom, ways, and tradition, such as is the commonly accepted practice at most of our colleges and universities. Whatever the view-point, however, control in institutions of advanced education has some background of the power to exact or require performance or conformity.<sup>7</sup>

In a more complicated endeavor, control implies a scheme of positions with the designation of leaders and those who follow. Such a view-point of control is obviously flexible and dynamic rather than static, particularly in a social democracy. The theory of designated

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<sup>5</sup> Ibid., pp. 184 & 190.

<sup>6</sup> Alvin Brown, Organization (New York: Hibbert Printing Co., 1945) pp. 103-111.

<sup>7</sup> Ibid., pp. 114-115.

positions is usually applicable to the structural control at our colleges and universities, but persist more through history and tradition than because of the force of public opinion as applied to our political and economic control processes.<sup>8</sup>

Control can be quantitative as well as qualitative. The integration of many of our economic, social and educational institutions have created a demand for more control and more effective or skillful control. The control of small colleges with a few hundred students is obviously a much simpler matter than the control of some of our giant institutions of advanced education such as the University of California with its forty thousand students distributed geographically over thousands of square miles. Complex control or control of complex institutions tends to show less and less the concept of social control except perhaps in highly decentralized institutions where the principles of social control may be implemented in relatively small groups on the various levels.<sup>9</sup>

One of the functions of our institutions of advanced education is the study and development of effective control methods. The structure of control, the implementation of control, control relationships, and the exercise of control and authority become matters of growing importance and concern to our colleges and universities as they increase in size and academic stature. These colleges and universities offer courses in control, principles and techniques to prospective leaders in social, political, and economic fields, yet many of them neglect to evaluate and improve their own internal control principles and systems.<sup>10</sup>

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<sup>8</sup> Chester I. Barnard, Organization and Management (Cambridge: Harvard University Press, 1949) pp. 39-50.

<sup>9</sup> Ibid., pp. 80-110.

<sup>10</sup> Ibid., pp. 194-206.

However, even social control is not necessarily peaceful control. It is seldom the lethargic and complacent subservience to the majority vote or the current popular opinion. Control should be dynamic and progressive if it is to be efficient and effective. The negative and repressive features of control are secondary in a democratic society, and are particularly unsuited to educational leadership. This is probably more true in our colleges and universities than elsewhere because inefficient control in economic and political activities changes quickly under the spur of competition and the drastic vacillations of the laws of supply and demand. In our universities, however, progress in control is frequently the result of challenge, of competition, or of adversity. Quite frequently universities improve in their organizational control because of depressions or radically new problems and instructional loads, or attacks from special groups or subversive interests. Some universities improve their control methods because of pressures from nearby institutions or a crowding of institutions in the same field.<sup>11</sup>

In a converse sense, an effort to control by harsh restrictions may promote reactions and constructive discussions, and thereby may achieve the elimination of any causes for the imposition of the objectionable control measures. For example, increasing pressures are being exerted to require university and college teachers and staffs to sign loyalty oaths and pledges of various kinds. Some teacher groups feel that political factions are seeking to impose special controls over the

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<sup>11</sup> Roybee, Arnold J. A Study of History (D.C. Somerville Abridgement). (New York: Oxford University Press, 1947) pp. 570-574.

thoughts and beliefs of university faculty members and are thereby threatening their academic freedom. This threat to their academic freedom has awakened and strengthened a sense of responsibility amongst the teachers for the proper academic conduct of the members of their profession. Faculty members have been aroused to a keener appreciation of the value of the academic freedoms which they now enjoy. They have sought to evaluate the reported threats of an invasion of communistic ideologies, and are endeavoring to remove subversive individuals from their ranks. Thus the threats of negative and restrictive controls have strengthened in faculty groups, positive feelings of responsibility for their own proper academic conduct, both as individuals and as groups, and have given them a keener appreciation of the value of their traditional academic freedoms. In the ensuing discussions and the resultant clarification of the principles involved, the members of the teaching profession are gaining in unity, strength, and stature. They are achieving a positive organization and control concept which may result in the elimination of dangerous individuals, and with them, any necessity for the restrictive controls.<sup>12</sup>

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<sup>12</sup>McDonald, Ralph E., Editor, Current Trends in Higher Education 1949. Charles W. McKenzie, "Interpreting Academic Freedom" (Washington: National Education Association -- Department of Higher Education, 1949) pp. 120-123.

## 2. ORGANIZATION

The foregoing discussion of control presupposes some recognition of organization, of scopes of supervision, of areas of organization, of direction, and their implied restrictions. A system of control requires an organizational plan defining limits of responsibility, of duties, and of higher, coordinate, and subordinate status. An organization tends to define itself by defining responsibility, areas of control, and by designating decisive authorities among and for colleagues in a prescribed activity or group of projects. Organization in its final analysis is established for the achievement of goals and objectives, both with relation to time and with relation to echelons of responsibility. Conventional organization tends to discuss endlessly the relationships between its constituent elements and thus becomes vague and impersonal. In operation, it takes on life and fire from the human beings who man its various control stations.

In a broader sense our democratic society strives to foster the maximum degree of freedom for the individual citizen consistent with the general welfare. This has a meaning for educational organization. Just as there is no single mold into which children and youth should be fitted,<sup>13</sup> so there is no fixed mold into which schools, colleges and institutions of higher education should be fitted. Therefore no single form of organization is presumed to be basic for all educational institutions. The dominant character of educational organization in a

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<sup>13</sup> Harold Benjamin, The Cultivation of Idiosyncrasy (Cambridge: Harvard University Press, 1949)

democracy is flexibility, not rigidity. Uniformity, the fetish of totalitarianism, has no place in a democracy, where variation is the accepted pattern.<sup>14</sup>

#### EFFECT OF CONTROL ON ORGANIZATION

Some 1700 institutions of higher education are distributed over the length and the breadth of the United States, are variously controlled, were established at widely different periods in the history of the American democracy and satisfy a great number of different educational needs. It is obvious that their organizational pattern will and should vary widely. 45% of the total are recognized as colleges and universities, 16% are separately maintained professional schools, 14% are teachers' colleges and normal schools and 25% are junior colleges. As to control, 364 are under the direct supervision of the State, 199 of a city or district, 445 of self-perpetuating boards of private corporations, 480 of more or less Protestant control and 212 are controlled by the Roman Catholic Church. 223 institutions are maintained for men only, 275 for women only and 1202 are coeducational. 52 are Land-Grant colleges for white, 17 for colored students.<sup>15</sup>

In general, institutions of higher education tend to be academically autonomous. They derive their support from a variety of sources. They may be directly responsible to city, district, state and Federal control in legal and financial questions or unusual problems. For example, except for the various military service schools, and in a very limited

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<sup>14</sup> \_\_\_\_\_, Higher Education for American Democracy, Volume III, Organizing Higher Education (Washington, D. C.: Government Printing Office, 1947), pp. 1, 2.

<sup>15</sup> Ibid., p. 2.

sense the Land-Grant colleges, there is no legally established Federal system of higher education in the United States. Similarly, except for the professional schools requiring State licenses, such as medicine, law and teaching, the States prescribe only very general programs of requirements and avoid prescribing any fixed system of supervision of higher education.

While the above discussion might be construed as pointing to a lack of organization and of system in higher education in the United States, there are other agencies which constitute a powerful influence toward standardizing and systematizing higher education. These agencies are the various educational and professional societies and the accrediting associations, with their various periodicals, conferences and published research projects. The effort of these agencies is toward establishing minimum standards, educational goals and objectives. They favor the free exercise of initiative and self-direction by educational leaders and institutions under their own direction. Federal and State influence is asserted by such leadership only as it is voluntarily recognized by each institution because of its acceptance of the soundness and practicability of such leadership, rather than by any legal or implied authority.<sup>16</sup>

There are however, certain basic principles underlying the organizational pattern in all of the stronger institutions of higher education.

In the administration of an American college the following general principles are considered fundamental:

1. The aims and objectives of each area and activity should be clearly formulated and understood.
2. Widespread participation by all concerned should characterize policy making.
3. Authority and responsibility must go hand in hand.

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<sup>16</sup> Ibid., p. 3.



4. Administration implies responsibility for leadership and coordination, rather than the giving of orders.
5. There should be a continuing program for the development of capacity and understanding by faculty and students for the assumption of ever increasing responsibility.
6. Progress and change should be evolutionary rather than revolutionary.
7. Truly democratic principles and procedures should characterize all phases of college administration.

It will be found that these principles apply equally well to all areas of college administration and organization. It is believed that their application will result in a more effective program of higher education in any institution.<sup>17</sup>

It is thus seen that organization may be more than an impersonal device utilized by the leader or chief to define and prescribe the duties, responsibilities and objectives of his subordinate managers or executives over whom he exercises immediate and personal control. Organization when expressed in terms of principles and objectives tends to unite all levels in achieving a common goal and is quite different from the organizational chart which sets up the chief, requires results from his subordinates, and is intolerant or indifferent as to methods employed by those subordinates in dealing in turn with their own subordinate groups.

Organization can imply decentralization from the top down through various levels of responsibility and direction until eventually the actual worker or doer stands on the spot and must deliver. The classic

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<sup>17</sup> Enoch C. Lyrness, "Educational Organization and Administration". Current Trends in Higher Education 1949, Part I, Basic Principles, Chapter 23 (Washington, D. C.: Department of Higher Education, National Education of the U. S., 1949), p. 152.

example is best described by the well known expression, "passing the buck". The converse of this concept is decentralization of responsibility with the necessary authority, but with all elements of the organization imbued with a sense of duty and a spirit of mutual cooperation. Such organization requires a minimum of charts but does necessitate well understood objectives and principles of operation. Thus,

effective organization and administration for institutions of higher learning can be achieved by

- a. adopting a sound organizational plan
- b. establishing good administrative procedures
- c. assembling competent personnel who are in accord with the broad objectives and policies of the institution
- d. developing through effective leadership a loyal and cooperative staff that works for the best interests of the institution
- e. providing for periodic appraisal of both plans and procedures.<sup>18</sup>

Just as institutions of higher education have had their growing pains, so modern business has had difficulties in adjusting itself to conditions imposed by modern technological developments. Business and industry have expanded in size and into geographical areas to an extent as to require detailed studies of the principles of organization and reorganization. They have sought the application of those organizational structures and principles best suited to specific administrative functions, tasks and geographical dispositions, because of the highly competitive nature of business and the immediate and direct evaluation of

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<sup>18</sup>Herbert C. Matthews. "Educational Organization and Administration". Current Trends in Higher Education 1949. Part II. Practices and Trends. (Washington: National Education Association of the U.S., 1949). p. 158.

its organizational structure and operation as portrayed by profit and loss sheets. In the main, business has been able to select and maintain flexible, efficient, and up-to-date systems of organization for the operation and control of its interests and activities. Those enterprises which have not availed themselves of modern organizational principles tended to be disintegrated or liquidated. It may be safely said that the organizational practices employed by successful business enterprises have been developed because of their practical effectiveness.

On the other hand, institutions of higher education have not felt to the same degree the immediate pressure of competition nor the spur of profit and loss. Through inertia, or preoccupation with their expansion problems, they have permitted obsolete systems of organization to endure beyond their justifiable and useful life spans, even though they may have realized that efficiency of operation and clarity of educational objectives require changes in organization to meet the changing conditions. Perhaps expansions and changes to meet rapidly varying loads and objectives have always been a constant source of concern. In their own classrooms, the universities have taught that as institutions grow, modern principles of organization require changes in such items as spans of control, delegation of responsibility, and decentralization of executive authority, and planning for future missions and student loads.

#### RESISTANCE TO REORGANIZATION AND TO CHANGE

However, universities tend to act slowly and to change cautiously. Tradition, age, size, and veneration for precedent, encourage this inertia. In spite of the multiplicity of services in institutions of higher education, any long range planning as was undertaken, has demonstrated

little immediate or apparent effect toward reorganization, whether administratively or educationally, to anticipate the present and future student loads, to adapt curricula to post war conditions and the future requirements of industry and finance, not to mention the teaching profession. Thus a college of agriculture may have changed in fact into a university, but hesitates to change its name or title and organization until long after the change in educational objectives and courses has been firmly established. Similarly, a university may have become a group of universities with programs suitable to an institute of technology or to a group of the various professions with courses in general education in support, yet continues to function administratively and educationally as a small college.

This reluctance to declare its changed mission and educational objective, causes the university to confuse its students and those seeking information about the institution. It is misleading to the public on whom the institution depends for its educational and financial support. All too frequently it leaves its own faculty members without a true appreciation of the educational and administrative objectives, and the relationships within the institution.

Planning and forecasting tend to develop desirable changes and to foresee the inevitable consequences of the aftermath of World War II and the continued Cold War. When such long range planning is undertaken well in advance, necessary changes can be implemented at the time when they are most effective and will do the most good. Such planning and testing initially implemented on a small scale, facilitate reorganization and the exact timing for such reorganization. They permit the exact organization to become effective at the time it will be most useful and efficient. They permit such practical details as the naming of educational

departments by fields of study and degrees granted. They facilitate early orientation of students and the planning of their courses. They assist students in adjusting their plans as they progress through the courses and guide them to specific employment after graduation.

The realistic designation of educational objectives with appropriate administrative and faculty organization promote a better understanding between faculty departments, a clearer appreciation of guidance, responsibility and specific objectives, and an adjustment by the administrative staff to meet these changing educational goals. Above all, these periodic reorganizations, with their attendant publicity, guide the newer students and the staff and faculty in a better appreciation of their missions and responsibilities.

Modern social and industrial organizations will become even more competitive than they are now. They will demand more exact and specific education and experience from their leaders and their assistants. Institutions of higher education will be better able to train these leaders if they adjust their curricula and courses and methods of education and their announced objectives to the future needs of society rather than present or past needs. This constant adjustment in the organization of our universities will be more effective if it proceeds and leads in these social trends rather than follows eventually and reluctantly.

The current overloading of university facilities, due largely to the educational gap opened during the recent War and the subsequent hump of veterans after the War have retarded planning because of the absence of university planners in military service during the War, and because of the present overloading of the staff and faculty of the universities. At the same time, the present overloading has forced,

at the demand of the more mature students, the introduction of more practical and realistic courses. Many universities, therefore, find themselves providing large programs of education more applicable to other types of institutions such as institutes of technology or professional schools. Yet they continue to function administratively and organizationally as small universities or even colleges. They may have been forced or persuaded to establish all of the courses and facilities usually found in larger universities or specialized institutions but have not reorganized to meet the changed situation. Some have not admitted to themselves their changed objectives, as shown by their failure to adopt such easy changes as more applicable curricula, the more exact description and naming of courses and a re-evaluation of the degrees granted.

Reorganization may be relatively simple. It may require only the re-arranging of existing personnel and facilities. During the past four years, universities have drifted into a highly flexible but make-shift organization. Their administrative agencies have absorbed function after function as necessitated by rapid growth and more practical canalized education. The impact of these factors of change have broken the shell of traditional organization and have promoted a flexible but improvised organization and procedure outside the experience of traditionally trained educators and administrators.

In most instances formal reorganization, planned and tested, duly announced and explained, would require little actual change in the number and qualifications of personnel, the size of the campus and plant, and in the routine operating procedures. Such deliberate and formal reorganization would, however, clarify enormously in the minds of the students

and the faculty the spheres of faculty responsibility, the actual educational objectives of the various courses and the positions to be filled from the courses by the students after graduation. On the lowest level, the required courses are almost always established and staffed in the proportions required by student needs as evidenced by their enrollments. The shifting and re-assignment of subjects, courses and departments are equally feasible.

In recent years organization has received careful study on all levels and for all types of activities. The two fields where study of organization has had particular emphasis is in the areas of public administration and business administration. As indicated previously, the size and geographical extent of the operating agencies in these two fields has made it imperative that every effort be exerted to function in accordance with best practices. An effort is being made to establish the subject of organization on the level of an exact science, with a development of the necessary scientific principles governing organization.

The following is a quotation from the introduction to Catheryn Seckler-Hudson's "Papers on Organization and Management" of "the four principles of organization":

1. Co-ordination by direct contact of the responsible people concerned.
2. Co-ordination in the early stages.
3. Co-ordination as a reciprocal relating of all the features in a situation.
4. Co-ordination as a continuing process.

The following corollaries, from the same reference, extend these principles:

1. Specialization in all administration is increasing and deepening.
2. Coordination of all specialized effort is

imperative if administration is to be effective.

3. Since coordination is but a method, there must exist a central policy or objective toward which specialization and coordination can be directed.
4. All aspects of administration take place in, and must respond to, a dynamic social setting. This dynamic setting is one of the distinguishing characteristics of administration -- intensified by (1) modern technological advances, (2) war, (3) economic turbulence, (4) politics, (5) public opinion, and (6) human personalities. Hence administration cannot operate in a vacuum. 'It must operate in terms of its cultural setting'.<sup>19</sup>

Limitations on the application of principles of organization are indicated by the following:

1. The principles may be applicable to the great majority of cases, but not to all, and their limitations have not been clearly determined.
2. There is a lack of agreement on the meaning of the words used in expressing the principles, which leads to confusion in thought about them and their application.
3. There are factors not yet covered by general principles which are often of more importance than those already covered.
4. In an individual case various principles must often be balanced against one another, and it may be that there is no general principle which will indicate where the balance should lie.<sup>20</sup>

The following principles of organization are useful when establishing a new activity or when analyzing and re-organizing an old one:

1. Goals or objectives should be clearly defined, understood, accepted and considered worthwhile.

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<sup>19</sup> Catheryn Seckler-Hudson, Editor of Papers on Organization and Management (Washington, D. C.: The American University School of Social Sciences and Public Affairs, 1946), pp. 5 and 6.

<sup>20</sup> Ibid., Henry E. Miles, "Principles or Factors in Organization", pp. 8 and 9.



2. Responsibility for attaining objectives should be allocated with a minimum of overlapping and cross-relationships.
3. Responsibility should be explicitly delegated, clearly defined and points of decision easily determined.
4. Decisions or their solutions of problems should be made at low levels consistent with full coordination, that is, as close to the point of action as possible.
5. An officer or senior supervisor should have a small number of personnel reporting to him directly, usually not over five, but sometimes more.
6. An increase in the size of the organization or in the complexity of its purposes brings more than proportionate increases in:
  - (a) specialization and subdivision;
  - (b) organizational problems of human relationships;
  - (c) the importance of coordination.
7. Generalists are at least as important as specialists.
8. Morale is more important than structure, or the informal organization is more important than the formal organization.
9. Fair measures of effectiveness are almost sure to increase effectiveness.
10. Prompt handling of work and low cost generally go together.<sup>21</sup>

In the last twenty years organization has given increasing attention to "multiple management". The commonly accepted interpretation of the name is "management by many". In its practical operation, multiple management is management by suggestion, information, recommendation

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<sup>21</sup> Ibid., pp. 10-15.

and advice from the scenes of action. Multiple management makes recommendations from the field for the consideration of higher levels but in itself does not implement its recommendations until confirming instructions or approval has been had from the upper levels of control. Multiple management is but one phase of organization, the informational phase from the field to the controlling planners and directors.<sup>22</sup>

Organization from a practical view-point embodies a variety of concepts. In smaller organizations, the emphasis is on the individual and individual relationships. As the number of persons involved increases, there is a growing tendency to emphasize cooperation and the cooperative systems. With still further increases in the number of persons engaged in a single activity, formal organizations are established, usually in elaborate charts, with functions and job descriptions supporting such charts. With still further growth, such as large national and international organizations, a complex form of organization may be established. With this last there is a tendency to establish informal organizations at the top levels and for the basic levels similarly to break down into informal organizations emphasizing individual relationships.<sup>23</sup>

The foregoing is in the nature of a structural and functional concept of organization. It emphasizes relationships of individuals and groups in a more or less static situation. It assumes that the various groups are performing a set group of duties or functions without material change or adjustment.

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<sup>22</sup> Ibid., Thomas R. Reid, "Multiple Management and Democracy in Business", pp. 18 to 22.

<sup>23</sup> Chester I. Barnard, Organization and Management, Selected Papers (Cambridge, Massachusetts: Harvard University Press, 1949), p. 132.

A second concept of organization deals with changing functions or dynamic operations. This concept emphasizes the importance of instilling the spirit of "free will". It stresses cooperation as a matter of individual initiative. It deals with communications between individuals and groups. The dynamic concept endeavors to relegate authority and the power of decision, consistent with responsibilities placed on individuals and groups. This concept strives to visualize some of the static principles of the preceding "structural" concepts under the phrase "dynamic equilibrium," and is perhaps best expressed by the principle adaptation to changing conditions. It seeks to instill a sense of preparedness for growth, change, and the ability to deal with the unusual and unexpected.<sup>24</sup>

Dynamic equilibrium as an organizational concept is perhaps better understood in practice than described, just as a whirlpool is readily visualized by those who have seen one, yet is difficult to describe.<sup>25</sup>

Both of the above concepts of organization, both structural and dynamic, imply a basic acknowledgement of the following as being essential to any organization:

- a. Will to collaborate
- b. Welfare plans in personnel relations
- c. Economic motives in personnel relations
- d. The elements of bargaining in all cooperation.<sup>26</sup>

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<sup>24</sup> Ibid. p. 133.

<sup>25</sup> Ibid. p. 115.

<sup>26</sup> Ibid. pp. 9-23.

Applying the concept of organization to institutions of higher education, there is a marked variation in patterns with respect to size and control of the institutions. The thirty-three Land-Grant colleges, with enrollments over 5,000, show a ratio of faculty to students of 27,692 faculty members to 377,744 students. This is a ratio of one faculty member to 13.66 students. If the comparative ratio is taken for other accredited institutions with enrollments over 5,000, the 35,728 faculty members instruct 541,361 students, or one faculty member to 15.14 students. The weighted mean of the two ratios, 13.66 and 15.14, is 14.5.

Departures from this mean are found at Southern Methodist, with a faculty-student ratio of 28.2, in the Catholic institutions with a ratio of 23.8. The state and city colleges and universities which are not under land-grant benefits show a ratio of faculty to students of 19.3. The so-called private institutions and those private institutions receiving some small share of state assistance show a faculty-student ratio of 10.9. The average of these four ratios is 20.55 but the weighted mean of course is 15.4.

Of the thirty-three Land-Grant colleges with enrollments over 5,000, seventeen of them or approximately one-half, have enrollments under 9,000, sixteen of them have enrollments above 9,000. Of this latter group, eleven have enrollments between 9,000 and 15,000, the five others show enrollments of 22,000 (University of Wisconsin), 23,000 (Ohio State University), 25,000 (University of Illinois), 29,000 (University of Minnesota), and 41,000 (University of California).

Of the fifty-six universities having enrollments over 5,000 and not receiving Land-Grant benefits, twenty-nine have enrollments under

8,000 and the other twenty-seven over 8,000. In the latter group seventeen have enrollments between 8,000 and 13,000. The other ten lie between 14,000 and 27,000 (Columbia University).

Among the largest universities, there is a marked difference in organizational structure. The University of California at Berkeley includes a number of State universities and colleges quite widely separated from each other but administered from the central offices at Berkeley. Thus the Berkeley campus has about 22,000 students, the Los Angeles campus 14,000, the Santa Barbara campus 2,400, San Fernando 1,200, Davis, 1,600, the Marine School at La Jola 24, Riverside 6, and Mt. Hamilton 1. The largest college in this group of university centers is the College of Letters and Science at Berkeley with an enrollment of 12,000. The same named college at Los Angeles is about one-half this size.

On the other hand, the University of Minnesota, with an enrollment of over 29,000 has most of its students at the campus in Minneapolis, with only small groups at the various experimental stations, the Teachers' College, the Mayo Foundation and one or two others.

The largest private institution of advanced education is Columbia University in New York City with an enrollment of over 27,000. Columbia University shows an undergraduate enrollment of about 5,000 compared to a graduate and professional enrollment of 17,000. It too is a group of colleges with Teachers' College of 7,500, Graduate faculties with 4,000 and Columbia College with 2,500. Geographically they are practically all fairly close together in New York City.

Considering both groups of universities together, forty-four of the eighty-nine have enrollments below 8,000, with three-fourths of

them having enrollments under 12,000. Among the Land-Grant colleges, if the very large institutions be omitted, most of the balance will fall in the bracket between five and ten thousand. Putting this another way, if the five large universities of California, Illinois, Minnesota, Ohio State and Wisconsin, all above 22,000, be omitted, practically all of the rest lie between five and ten thousand enrollment.

### 3. LEADERSHIP

This section deals with leadership because a study of organization and control practices in universities and colleges would be incomplete without an evaluation of the leadership which initiated, and directed changes in, their organizational patterns. These organizational patterns of institutions of higher education have a specific historical evolution which still influences current trends to a marked degree.

Since colonial times, education has played an ever increasingly important part in the development of our American democracy. However, too often education has followed almost reluctantly the changes demanded by our social needs and advances in technology. Too many of our educational advances were based on local expediency, were poorly planned, inadequately coordinated, and lacked popular understanding and support. How often have sociological trends and changes been ignored or erroneously appraised by our schools with a resultant lack of synchronism of education with the social and economic needs of our democracy.

The tempo of social, economic and political change is ever increasing. Education tends to proceed at its methodical pace, surveying, appraising, evaluating, testing and eventually approving changes in its curricula and procedures. Is education actually dropping behind and becoming archaic in comparison with our rapidly changing sociological trends, or is this another version of the tortoise racing the hare, with education proceeding deliberately to its goal by the most direct route?

All sociological changes have had their instigators and leaders. Political parties have their national, state and local leaders; economic interests and labor groups are organized nationally, regionally, and by activity, each with appropriate representatives and bosses; religion has its parishes, districts, and national headquarters; manufacturers, transportation, petroleum, communication, distributors, and chain stores are all organized with directors at various levels of control. The philosophy of technology is based on the assembly line, the precision built part, uniformity, and a mechanical functional relationship of the components of the assembled machine, be it a vacuum tube or a trans-atlantic strato-liner. The world is becoming so competitive that the nations are endeavoring to organize and establish a directing leadership on a global scale. Education, which is charged with the training of our youth for life in this highly organized society, has its local, regional and national societies and association, but does it have recognized and empowered national leaders? If there are recognized national leaders in education, where are they found? On what levels do they function? Are they adequately trained, and fully aware of their responsibilities? What should be the qualifications of real leaders in a nation's education? How would they exercise leadership? What would be their mission?

More than any other group of education agencies, institutions of advanced education are self-perpetuating in the sense and to the degree that they are able to develop leadership in advanced education. If they are to subsist, universities are forced to evaluate the effects of the impact of modern sociological and scientific trends of our democratic society and to educate and train, perhaps inspire, the educational



leadership which will foresee and plan for future changes and requirements. It is fundamental that leadership in education and the study and evaluation of sociological trends are mutually inter-dependent; however, they are not concurrent but should be synchronized after a definite pattern. Due to the time lag between the educational years of our youth and the exercise of the subsequent active official responsibilities, it would appear that educators require vision and foresight to anticipate future sociological trends in establishing curricula and educational plans. Leaders of our universities should be thinking of the needs and demands of society at least ten to thirty years in advance and even longer, so that the pupils in the primary schools will be adequately prepared for their education in secondary schools and institutions of advanced education, and after their resultant graduation from universities and colleges, will be inculcated with an appreciation of the problems which they are to face some ten or fifteen years after graduation when such graduates will have arrived at mature responsibility, and will exercise leadership in the solution of the problems of their time.

#### INFLUENCES OF THE CHURCH

One of the major influences in retarding the prompt recognition of the higher educational needs of the future generations, springs from the influence of the church on our colleges and universities. Educational leadership in our early colonial times followed the same patterns as those developed in the mother countries from which the colonists came. For example, the English colonies on the North Atlantic coast, retained educational leadership in the church Elders; the Pilgrims transplanted their system of education by private school, church schools and by private tutors. The church assumed that education was the responsibility

of the parent or the head of the family, with the primary objective of teaching children to read the Bible. As small communities and towns developed, it became more convenient and effective to employ a teacher to act for a group of parents, and the children were gathered at common school buildings for instruction. However, initially, the responsibility rested with the parents, the state and church disclaimed all duty toward educating children. The church colleges for the training of the clergy predominated until well after the Civil War, and their leadership was generally acknowledged.

As the burden of supporting schools grew heavier, parents, acting also as voting citizens, cast about for means of converting part of the natural wealth of their new country to the support of their local schools. The Massachusetts Ordinances of 1642 and 1647 established the principle of community schools. The Federal Ordinances of 1785 and 1787 converted the income from public lands to the support of education, and established the principle that the Federal Government was interested in encouraging education, but was not concerned with federal leadership of education.

#### INFLUENCE OF TRADE

The development of the Mississippi Basin and the drive toward the Pacific coastal areas emphasized the need for political governors, trading post managers and banking representatives who could write coherent and intelligible reports. Thus a third social group evidenced a vital interest in education. This group included our political leaders, our transportation interests and our trade, manufacturing, and banking agencies. This third group with the possible addition of certain technological and professional interests have tended to dominate educational planning, particularly in institutions of higher education, up

to our own times. Thus a diverse group of economic and political interests exercise an indirect but very practical leadership in advanced educational institutions by virtue of the positions they offer graduates and the relative salaries they are willing to pay.

One of the major forces to challenge recently the domination of advanced education by business, professional and political interests has been the Federal Government itself. The perfection of rapid means of transportation and communication of the 1920's and '30's made all nations of the world close neighbors and brought into sharp relief their historical differences, political distrusts, and economic jealousies. These differences were perhaps some of the causes for World War II, which in turn placed on higher education burdens and responsibilities of entirely new and perhaps unforeseen natures.

World War II was essentially a war of science and technology. The Federal Government placed with our colleges and universities vast sums for the solution of problems in technical research and developments, beyond the wildest dreams of the average college professor of 1930. After the depression years of 1930, the colleges and universities were poorly situated financially to undertake these research and educational loads without Federal assistance, and munificent appropriations were made available to them for these war projects.

The so-called "G. I. Bill" tended to continue the flow of Federal funds to institutions of advanced education and at a time when inflationary prices and low interest rates made Federal support very attractive to our universities.

Thus, to review, leadership for universities and colleges is found resting first upon a basic foundation of medieval church policy for the

perpetuation of church orders and leaders of the clergy. Then, with the discovery of the new world and the consequent travel and exploitation of vast natural resources, came the need for trained agents and administrators for these new world projects, imposing a second guiding objective on higher education. With the advent of technology, the lessons of World War I culminated in the scientific war machines of World War II; there developed a controlling interest on the part of business and banking in the research and development laboratories of our universities and colleges. The Federal Government developed a similar interest in its effort to counteract, or at least keep abreast of, the highly technical military devices developed by the European nations.

It is only in recent years that an unselfish interest or group has shown any strong inclination toward national leadership in higher education. This group is probably best represented by our leading educators of the nation going into political positions, but includes those statesmen and political leaders who have been driven to distraction or despair because of the unsettled world situation, and because the potentially catastrophic or cataclysmic destructive agencies are now being developed in our university laboratories and by our own national educational leaders in the fields of science and technology.

Educational leadership as exercised by individuals tends to express itself less selfishly than the leadership imposed by business, financial and technical interests. Often individual educational leadership has been exercised because of strong convictions on the part of specific professional educators. They have become leaders because of their force and determination to better the educational situation in their communities and because of their ability to express themselves forcefully and to gain

the attention of both professional educators and the disinterested leaders on the community, county, state and national levels. Their leadership has been exercised by popular consent rather than by force of law. Their educational leadership recognized the innate dignity and worth of the individual. Such leaders relied on the intelligent analysis of man's educational problems and were guided by the cooperative use of intelligence in the solution of the problems common to the groups over which they exercised leadership.

The view-points and principles announced by some of these beneficent educational leaders appear idealistic and sometimes impractical in our modern democratic world. They have had to face the practical politicians, the hard-headed bankers and traders, and ambitious statesmen seeking expanding power and empire. They have been able to overcome this practical opposition only when they have a solid support in their own community and when they have convinced the opposition of the danger of the present confusion of sociological trends dominated by economic ambitions and power politics. In most instances the educational leaders have departed too widely from the practical view-point. Their influence has been temporary and local. On the other hand, where they have been able to reconcile the urgent need for adequate educational policies and programs with the practical requirements to support such programs, their influence has increased progressively from the community to the national level.

Such benign educational leadership is more than the ability to inspire confidence, a pleasing voice, a gracious manner and similar attributes. True and effective educational leadership requires a strong and expressive motivation toward true democratic principles supported

by a number of corollaries. These educational leaders teach that the welfare of the group can be assured only through the welfare of each individual. They demonstrate flexibility and cooperation as being essential toward any lasting solution of educational problems. They question decisions made by political leaders unless founded on educational experience or advice from trained educators, and support the theory that true educational leadership encourages a fair hearing of all ideas and judgment on merit. They are convinced that every person can make unique and important contributions to the advancement of education, and they encourage individuality rather than uniformity in exploring educational problems. They take the philosophy that growth in educational matters is rooted from within the group rather than without; that is, communities must be allowed to discover for themselves the proper paths in education by taking part in the determination of educational objectives.

True educational leadership requires the conviction that democracy is a way of life rather than a faction or party. Democratic educational leaders believe that democracy includes the development of initiative to test changes and suggest improvements. They encourage democratic methods in discussions, planning and the execution of plans. Their attitude is never static nor indifferent but is based on efficient methods, the best plans of action, the development of individual creative power and the group use of all available ideas, intelligence and resources in solving problems. It has been said that the essential component of great personal leadership in education in our democratic society is a devout love for all

mankind and its essential component, the individual.<sup>27</sup>

Efficient educational leadership is based on initiative and cooperation. It seeks the improvement of the community in which it functions and the training and improvement of educational leadership itself. Practically all educational leadership commences with leading the group or community toward a determination of its educational wants and needs as demonstrated in the community life. Educational leadership then proceeds toward group evolution of plans of action, proceeds toward the implementation of such group planning and eventually undertakes an appraisal and evaluation of the results of the plans implemented.

As an individual, the educational leader identifies himself with the problems of the people and of the community with a view to inviting confidence. He develops an organization for collecting the cooperative expressions, the wants and needs. He stimulates group appraisal of the present situation and the possibilities of reasonable solutions and objectives. He is, of course, familiar with the techniques of educational service, inventories, public relations, modern personnel policies, and procedures for directing discussion and group action. Above all, he must work in harmony with both the political educational governing bodies, with lay advisory committees and with his own educational colleagues.

The requirements for true democratic leadership in education, particularly advanced education are probably the most exacting of any in our community and national society. The educational leader requires a broad and practical general education touching on every element of

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<sup>27</sup> William S. Vincent, Clarence A. Newell and John Lund, Educational Leaders--Their Function and Preparation (New York: Teachers' College, Columbia University, 1948), pp. 8 & 9.

our cultural and social heritage. He must be well-informed on current events and understand their historical background, present effect and future implications. He must be informed and have a practical working knowledge of the facts and techniques of our social sciences including government, politics, and economics. In addition, he must be versed in the major philosophies of education, in teaching techniques, in school administration, guidance, personnel management and related subjects.

Summarizing the truly effective leader in democratic education, he must be a person with vision, force and adaptability. He must be skilled in the employment of democratic techniques of group action in providing organizational machinery which will facilitate the implementation of educational plans. He must foster a psychological atmosphere which will encourage the support of democratic leadership. He must demonstrate practically and by example his conviction in democratic educational ideals and objectives. His educational leadership is measured almost entirely by the success he achieves in influencing groups to support and implement more effective educational facilities. He is assisted by all persons in the community who are seeking the enlargement of democratic educational principles and facilities, but selects as his specific assistants those whose ideas, special skills, talents and abilities most favor the attainment of his objectives.<sup>28</sup>

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<sup>28</sup> Ibid., pp. 11-51.



#### 4. THE SPAN OF CONTROL

The term "span of control" may be applied to a university or college, but may not be generally accepted as a useful concept in that it implies a leader with subordinate followers. However, the alternative is usually group discussion and deliberation, followed by action by a delegate or agent acting for the group to implement or carry out the conclusions or decisions of the group. The principal difference in the two concepts appears to be control by a designated and responsible leader as compared to an impersonal and transient leadership exercised by an agent with a specific but limited mission. Both concepts have their place in the organizational practices of universities. However, after policies have been determined, positive action and results are usually achieved by experienced and accepted leaders of demonstrated authority and ability.

Thus in sports, the captain of a baseball team exercises a span of control of nine during a game. The span of control of the football captain is eleven, while that of the football coach may be over one hundred if he is working for an ambitious university, although he too usually decentralizes to his assistant coaches for the line, ends, back-field and the like. The span of control of the president of an automobile sales agency may be the five executives or managers of his departments.

The span of control of a specific individual may change or vary with his changing spheres of activity. The bank president may exercise a span of control of seven over his vice presidents, a span of nine at board meetings, and a span of zero when he gets home to his family. The state manager of a chain store system may exercise a span of control of

two or three in the principal cities and of one or two in the towns and rural areas; his state wide span of control may at the same time be twenty or more.

The leader or chief usually determines his span of control by appointing a specific number of immediate subordinates or assistants, each with defined duties and responsibilities. The number of such subordinates which a leader can effectively supervise is a matter of opinion and controversy. A leader readily guides the activities of two or three section chiefs. A manager easily controls and guides the activities of four department heads; the five make a conveniently sized group for deliberation and planning. As the number of subordinates increases above four, effective supervision by their chief becomes increasingly difficult; there may be insufficient time for all members to be heard, to discuss their problems, and to receive instructions from their chief.

As the number of subordinates increases above six or seven in an expanding enterprise, the trained leader usually prefers to split them into two or three groups and place a subordinate in charge of each of these groups. The leader then deals with these two or three group chiefs; they in turn supervise the activities of their group members. Should the leader fail to so decentralize and permit his span of control to run up to ten or more, then his subordinates receive less and less of the leader's guidance and personal direction and they tend to take matters into their own hands or become inactive for lack of instructions. In either event, the leader loses direction even though his span of control is greater.

Practically all studies of organization eventually depend on spans of control, that is the question of the proper number of delegations which each group chief makes to his subordinates. Various leaders have expressed themselves decisively on the proper number for the ideal span of control. For example, A. P. Wavell, famous Commander of the British Forces in Africa, in speaking of military organizations and operations has the following concept:

Generally speaking, the number of units grouped in a formation should not be less than three nor more than six. In a formation composed of two units only, the influence of the commander of the formation is small; while it has been found by experience that six units is the maximum that can conveniently be commanded and administered by one headquarters.<sup>29</sup>

Other military leaders have held equally emphatic opinions, but vary between wider limits. For example, Clausewitz in his treatise "On War" cites that while corps and smaller units should be divided into small components with spans of control of two or three, yet believes that the field commander may control an army of eight corps or even nine or ten and should do so in the interests of flexibility of operation.<sup>30</sup>

Another military leader, Ian Hamilton, in his book "The Soul and Body of an Army" is more specific. He favors a span of control of six and gives his reasons as follows:

If a man divides the whole of his work into two branches and delegates his responsibility, freely and properly, to two experienced heads of branches he will not have enough to do.

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<sup>29</sup> Alvin Brown, Organization, A Formulation of Principle (New York: Hibbert Printing Company, 1945). p. 123.

<sup>30</sup> Ibid., p. 124.

The occasions when they would have to refer to him would be too few to keep him fully occupied. If he delegates to three heads he will be kept fairly busy whilst six heads of branches will give most bosses a ten hours' day. Those data are the results of centuries of the experiences of soldiers.<sup>31</sup>

The two opinions above from Wavell and Hamilton, both British military leaders who held wide powers over vast and complex organizations, favor spans of control between three and six, and preferably nearer six. The same spans of control of about five are endlessly applied by leaders of the armed forces of the United States. The German war forces and the French field armies established similar sizes of spans of control. Business and industry recommends and practices spans of control of about five in the organization and direction of their complex organizations.

Spans of control for organizations and institutions devoted to educational activities are not so definitely recognized by educational writers. Perhaps spans of control have not been recognized as having a significant influence on the effectiveness of the organization and direction of the educational institutions of the nation.

Moehlman visualizes the board of education as being concerned with four major functions: instruction, plant, text books and supplies, and finance. The superintendent acts as the secretary to the board and as its executive agent in carrying out its decisions. This system would correspond to a span of control of four. However, in practice many deviations from the span of control of four are encountered. The span of control is increased to five to allow for an auditor, or decreased to three by combining plant and finance.<sup>32</sup>

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<sup>31</sup> Ibid., p. 125.

<sup>32</sup> Arthur B. Moehlman, School Administration (Cambridge: Houghton Mifflin Company, 1940), pp. 245, 250-256.

In larger educational organizations and institutions, spans of control vary within wide limits. Principals and teachers may be grouped by geographical areas, or by types of instruction, with little apparent regard for the resultant spans of control. Responsibility and authority overlap in many activities because of the complexity of organizational structures. Specifically, spans of control of from "5 to 20" are cited as common in colleges and universities. No mention is found of the principle of the desirability of small spans of control. No discussion is presented of the resultant stress on a university president or a college dean who attempts to personally guide and control the activities of twenty, forty, or more assistants and subordinates.<sup>33</sup>

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<sup>33</sup> Ibid., pp. 286-323, 391-397, 767-785.

## CHAPTER III

### THE STUDY OF SPANS OF CONTROL

This chapter deals with the variations in spans of control. It presents, first, certain theoretical considerations for spans of control which are uniformly applied on a number of levels in a complex organization. This theoretical treatment is developed mathematically by the author to show trends in personnel overhead as compared to the number of active classroom instructors and possible student totals. Following this theoretical introduction are found some trends indicated by summarizing organizational structures and control groupings as presented in statistical summaries on institutions of higher learning. The chapter closes with studies of specific institutions of higher education with the purpose of evaluating practice by the principles and theoretical trends previously developed. The chapter includes a practical example of the application of the theoretical considerations on spans of control.

#### 1. MODES IN SPANS OF CONTROL.

##### THEORETICAL TREATMENT

The theoretical implications of spans of control, progressively increased, but uniformly applied to various subordinate levels, are probably best shown in tabular form. Table 1<sup>1</sup> shows in the vertical columns, the geometrically increasing faculty members as the number of levels is increased. Each vertical column gives the personnel on each level for the span of control pertaining to that column. Personnel

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<sup>1</sup> Developed by the author.

TABLE 1.--PERCENT OVERHEAD FOR SEVERAL SPANS OF CONTROL UNIFORMLY APPLIED.

<u>a</u>	Level	Span of Control									Faculty	
		1	2	3	4	5	6	7	8	9		
P	1	1	1	1	1	1	1	1	1	1	1	President
OH	1	0	0	0	0	0	0	0	0	0	0	
P	2	1	2	3	4	5	6	7	8	9		Division
OH	2	50	33	25	20	17	14	13	11	10		Heads
P	3	1	4	9	16	25	36	49	64	81		College
OH	3	67	43	32	24	19	16	14	12	11		Deans
P	4	1	8	27	64	125	216	343	512	729		Department
OH	4	75	47	33	25	20	17	14	13	11		Heads
P	5	1	16	81	256	625	1,296	2,401	4,096	6,561		Section
OH	5	80	49	33	25	20	17	14	13	11		Chiefs
S @ 12.5	5	13	200	1,013	3,200	7,812	16,200	30,013				
P	6	1	32	243	1,024	3,125	7,776	16,807				Instructors
OH	6	83	49	33	25	20	17	14				
S @ 12.5	6	13	400	3,038	12,800	39,063	97,200					

a P is number of faculty members at level indicated.

OH is percent overhead at that level.

S @ 12.5 is total number of students at 12.5 students per faculty member at the level indicated.

data is shown for spans of control increasing from one to nine inclusive.

For example, if the span of control is five, the president of a small college on level one might have five department heads on level two over whom he exercised supervision. Each of these department heads in turn would have five instructors on level three over whom each exercised supervision. Thus for a span of control of five uniformly applied, there would be one person, the president, on level one, five persons on level two, and twenty-five persons on level three,— a total faculty of thirty-one.

For progressively larger institutions, one hundred twenty-five persons would be needed on level four, six hundred and twenty-five persons on level five, and three thousand one hundred and twenty-five persons on level six. The overhead is used in this study to mean all persons above the lowest level in the institution.

For spans of control less than five, the number of persons on each level would be obviously less, and for spans of control of greater than five, the corresponding numbers of persons on each level would be greater.

For the fifth level, the total numbers of students are given for each span of control, based on 12.5 students for each instructor shown on the fifth level. For larger universities with a sixth level, similar student totals are shown, based on the same student-instructor ratio.



## OVERHEAD

Various sizes of spans of control have a direct bearing on the overhead, and on the number of students taught. The term "overhead" as used in this study, denotes the ratio of the number of faculty members above the instructors on the lowest level which the institution utilizes, to the total number of faculty members on all levels.

Referring again to table 1, a series of total numbers of faculty members could be prepared for spans of control from one to nine, and for levels from the president on the first level down through the various levels to level six. For example, the chart shows, for a span of control of five, that, in a small two level institution, the president would have five instructors. The overhead in that institution would be one-sixth, or about seventeen per cent. Similarly for a span of control of six, and with three levels, the president might have six department heads, each with six instructors. In this institution the overhead would be seven-thirty-sixths or sixteen per cent.

Furthermore, the last lines for levels five and six indicate the number of students who would be taught by the instructor shown on the fifth and sixth levels. A large university having a uniform span of control of seven, with six levels, would have one president, seven heads of divisions, 49 deans of colleges, 343 heads of departments, 2,401 chiefs of academic sections and 16,807 instructors. These 16,807 instructors would teach 150,065 students as indicated in the last figure in the last line of the chart.

The overhead of course decreases with the increase of the span of control, and increases with the number of levels established in the institution. For example, a small college, having a span of control of four and three levels, would have a staff of twenty-one, with a president, four department heads and sixteen instructors. The overhead would be  $5/21$  or about 24%. The number of students at  $12\frac{1}{2}$  per instructor would be 200 for the sixteen instructors.

As this college grew and added one additional level, but maintained the same span of control of four, it would have 64 instructors teaching 800 students, and an overhead of 25%. This is an overhead increase of about 1%, but a student increase of 300%. As additional levels are added, the percent overhead remains about 25% as indicated on levels five and six, but the numbers of students increase to 3200 and 12,800 respectively. Each of these numbers of students represent increases of 300% over the preceding levels.

It is interesting to note that as the span of control increases from one to nine, the percent overhead decreases from 50% to 9% on the second level, and from 83% to 11% on the sixth level. It is apparent that as the number of levels increases and the span of control increases, the percent of faculty overhead tends to level off at about 10%.

## PRACTICAL VARIATIONS IN SPANS OF CONTROL

With the present trend toward increasing the number of specialized courses in our larger universities, there is a tendency for most of them to operate on six levels. The same consistency is not found in any uniformly applied span of control either as to universities as a whole nor in the same university. Considering the larger universities as a group, a wide variation in spans of control is found in practically all of them. It is not unusual to find presidents exercising spans of control over their immediate subordinates from anywhere between two and forty.

Spans of control of the president's immediate subordinates (usually heads of divisions or deans of colleges) show a wide variation. This variation is usually based on the number of colleges which compose the university. When this number of colleges reaches about eight, there is a tendency to divide them into two or more divisions with a head of each division. Where this division has not been made, the span of control becomes awkwardly large.

The spans of control of deans of colleges is readily determined from current lists of accredited institutions of higher education.<sup>2</sup> For practically all universities and colleges, the subject matter and number of personnel in each department are carefully listed.\*

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<sup>2</sup> A. J. Brumbaugh, American Universities and Colleges, Fifth Edition (Washington, D. C.: American Council on Education, 1948).

\* (Exceptions are made for the larger universities or university systems, such as maintained in Minnesota and California where the number of instructors in a school and sometimes a college is the lowest breakdown.)

If these departments are considered to have one department head with all of the instructors reporting to him, the spans of control of most of the departments would average well over ten. It is probable that the larger departments will be divided into several sections with the senior instructor of each section as section chief, but probably carrying a full time teaching load in addition to his functions as assistant to the department head.

Referring back to table 1, it is obvious that few institutions will apply any one span of control uniformly on any level nor uniformly to all levels. From the above discussion it is apparent that presidents of the larger universities have a tendency toward a very high span of control, such as ten, twenty and even higher. These high spans of control usually are a result of long custom and tradition, of adding another head reporting directly to the president as each new staff section and educational department is added to the university. There appears to be a reluctance on the part of presidents to relinquish their direct personal supervision over new projects which is perhaps justified until the project is firmly established. After the new project has been firmly established and gets to be old, there is a marked tendency on the part of presidents to neglect to assign these new activities to the supervision of their subordinate assistants. For this reason and others, spans of control in universities tend to increase directly with the age of the university, unless some president periodically analyzes the organization and establishes a more realistic and workable span of control.

## SOME APPLICATIONS OF TABLE 1.

Another interesting factor of table 1 is the relationship of spans of control to overhead in an institution of a given number of students. For example, a college with about 3,000 students could be organized in a variety of spans of control and academic levels. With a span of control of three, there would be required six levels to build up the necessary 243 instructors teaching 3,038 students. In the same way, with a span of control of four, five levels would present 256 instructors teaching 3,200 students. With a span of control of five, four levels would give 125 instructors teaching some 1,563 students, but five levels would give 625 instructors and 7,812 students.

To build up the number of instructors to the required 240 for a 3,000 student university, a second column of instructor and overhead figures of equal size would build the number of instructors to 250. This situation is frequently encountered where the university has two major groupings of colleges, such as engineering and liberal arts or general studies and the professions. In this situation the president of the university would probably appoint a vice president for the liberal arts college and another vice president for the professional schools, thus giving himself academically a span of control of two. The two vice presidents in turn could set up spans of control of five and on the fourth level would find themselves with 125 instructors each serving a combined student enrollment of 3,000.

The chart could be elaborated in several ways. One variation could show changes in spans of control with different levels. This situation is practically always encountered in all universities and

practically all colleges. Another application of the chart could be found in varying the ratio of instructor to student. The national average is currently between twelve and thirteen for all faculty members and probably between fifteen and twenty when only departmental staffs are considered. However applying the factor of class size to the chart it is obvious that if the ratio of instructor to student were one to twenty-five in place of one to twelve and one-half as on the chart, the enrollment or size of the university could be doubled without any change in the number of faculty members. This swelling of enrollments without increasing the faculty has been a common experience in practically all institutions during the past five years and has lead to some unfortunate situations both as regards the overload on the instructor and the quality of instruction.

Another interpretation of table 1 is shown graphically in figure 1, which shows variations in the per cent overhead with changes in levels for varying spans of control from one to ten. By overhead, again, is meant the number of the faculty above the instructor level as a per cent of the total faculty. The family of curves for varying spans of control indicate that there is a marked tendency of the per cent overhead to level off at the third level for spans of control from three to ten. It is noted also that the per cent overhead tends to reach an almost constant figure at lower levels as the span of control increases. Thus for a span of control of four, the per cent overhead is twenty-four on the third level, twenty-five on the fourth level and remains close to twenty-five thereafter. For a span of control of ten, the per cent overhead is appreciably lower, about

Per Cent  
Overhead

Span of  
Control

100

80

60

40

20

1

2

3

4

5

7

9

1

2

3

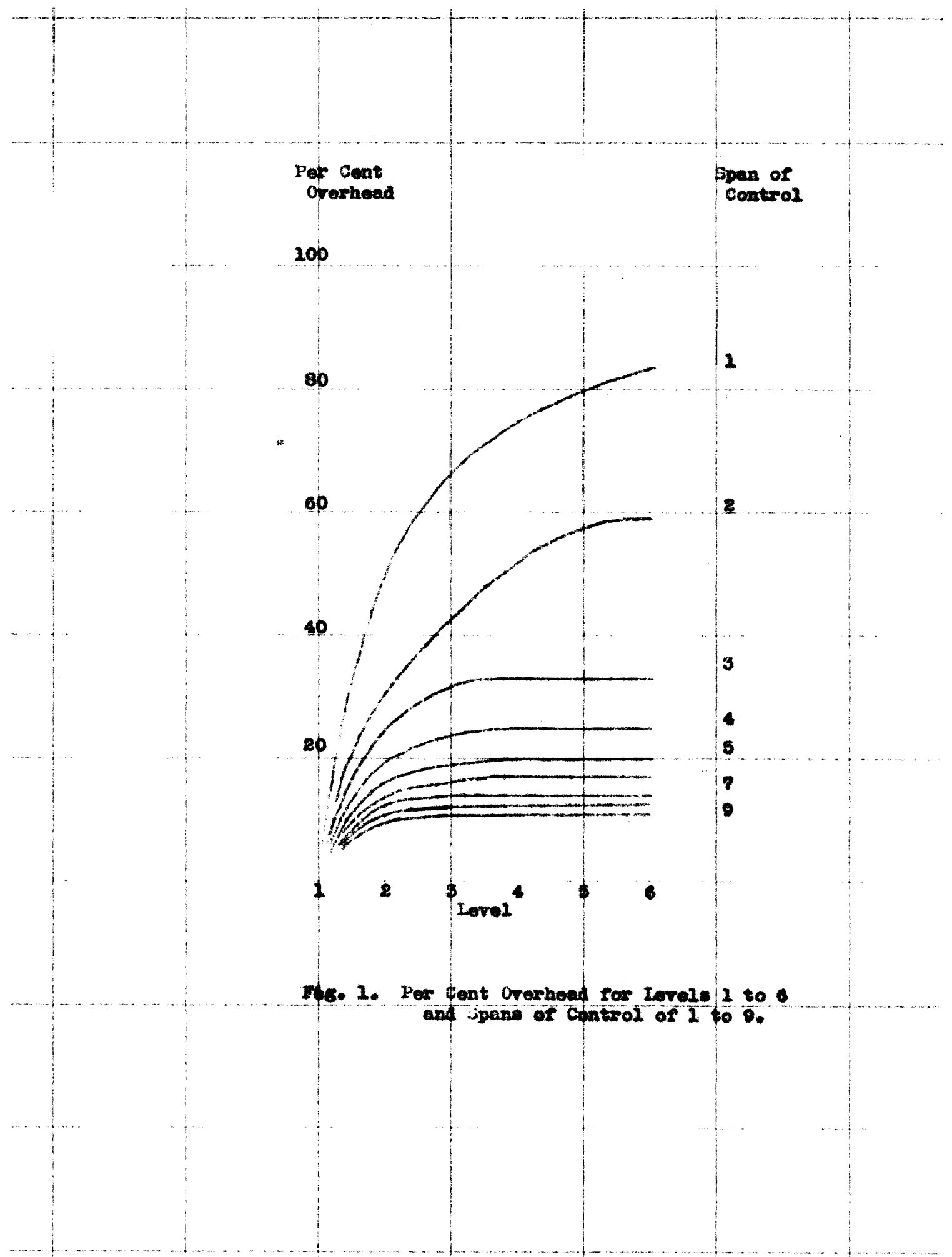
4

5

6

Level

Fig. 1. Per Cent Overhead for Levels 1 to 6  
and Spans of Control of 1 to 9.



ten at the second level, eleven at the third level and almost constant thereafter. Similarly for the optimum span of control of five the per cent overhead has reached almost its maximum at the third level and remains about twenty for higher levels.

One of the deductions from the above is that from about the third or fourth levels and higher, the per cent of overhead tends to remain constant regardless of how many levels are added to the institution. However, as shown previously, the numbers of students increases by several hundred per cent for each level added.



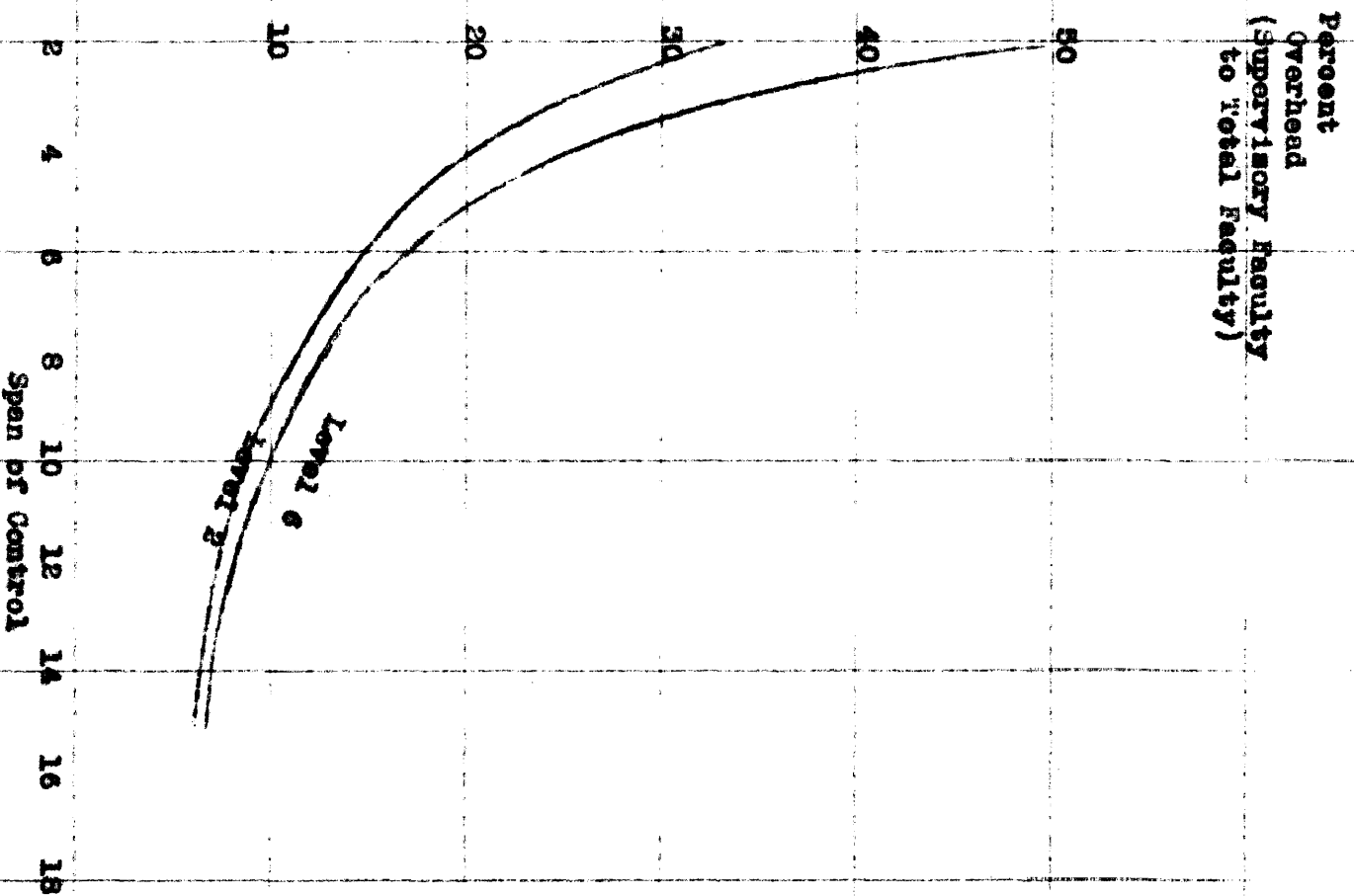


Fig. 2. Percent Overhead in Faculty for Spans of Control from 2 to 18, and Levels 2 and 6.

Another analysis of table 1 is shown in figure 2 which portrays graphically the per cent overhead in faculty for spans of control from two to fifteen. The two curves indicate values for the second level and the sixth level. The curves for the intermediate levels, three to five, lie between the two curves shown in figure 2.

It is apparent that for a span of control of five the overhead on the second level is about seventeen and on the sixth level is twenty with the intervening curves of the family lying closer to the sixth level curve than the second level curve.

The family of curves appears to approach some minimum value in the neighborhood of five per cent at spans of control above fifteen. However, for spans of control between five and ten, the per cent overhead decreases at a fairly constant but slightly decreasing rate with the span of control.

TABLE 2. RESULTANT SIZE OF CLASSES BASED ON 12.5 STUDENTS PER FACULTY MEMBER.

a	Level	Span of Control									
		1	2	3	4	5	6	7	8	9	10
TS	1	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
C	1	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
TS	2	25.0	38.0	50.0	63.0	75.0	88.0	100.0	113.0	125.0	138.0
C	2	25.0	18.8	16.7	15.8	15.0	14.6	14.3	14.1	13.9	13.8
TS	3	38.0	88.0	163.0	263.0	388.0	538.0				
C	3	37.5	21.9	18.0	16.4	15.5	14.9				
TS	4	50.0		500.0		1,950.0					
C	4	50.0		18.5		15.6					
TS	5	63.0	386.0	1,510.0	4,260.0	9,750.0	19,410.0	35,000.0	92,200.0		
C	5	62.5	24.0	18.7	16.7	15.6	15.0	14.6	13.9		
TS	6	75.0	787.0	4,550.0	17,050.0	48,700.0	116,700.0				
C	6	75.0	24.6	18.8	16.7	15.6	15.0				

a TS is total number of students.

C is size of classes, based on ratio of TS to instructors in lowest level.

Table 2 shows the size of classes for spans of control from one to ten and levels one to six. The student body is arrived at by taking the national average of about  $12\frac{1}{2}$  students per faculty member. The size of classes is this product divided by the number of instructors on the lowest level. For example in table 2, with a span of control of five and three levels, there would be thirty-one faculty members (see table 1); these should supervise a student body of 31 times  $12\frac{1}{2}$  or 388 (see table 2). However, there would be only 25 instructors in this group to teach the 388 students or an average of 15.5 students per class. Similarly for a span of control of six and five levels, there would result 19,410 students with average classes of 15.0.

In the above discussion, it is assumed for purposes of simplicity that students and instructors all carry the same number of class hours, thus making the same number applicable to both sizes of classes and student-instructor ratios. The same assumption is continued in subsequent discussions. In actual practice, however, instructors may carry an average load of twelve semester hours, while the students carry an estimated average of eighteen. This difference in loads would increase the sizes of the classes given in the tables and charts by 50%. However, the basic considerations would be proportionate and are more readily comparable to published statistical data on student-instructor ratios.

Students  
per Class

24

20

16

12

8

4

1

2

3

4

5

6

7

8

9

Span of Control

Fig. 3. Size of Classes, or Ratio of Students per Instructor, at Levels 2 and 6. (Based on 12.5 Students per Faculty Member)

The data from table 2 is shown graphically in figure 3. Referring to figure 3, the size of the class for a span of control of six, and six levels, would be about 15. Similarly for a span of control of four, but two levels, the size of the class would be 15.8.

The family of curves between the second and the sixth level are bunched toward the fifth and sixth levels, there being very little difference in the sizes of the classes as the number of levels is increased beyond three.

From the shape of the curves, it would appear that as the span of control increases that the size of the classes would approach some minimum limit of about 13 students per class within any reasonable span of control. Probably it could be shown theoretically that the limit is  $12\frac{1}{2}$  students per class but would be reached only after an impossibly large span of control.

Summarizing the foregoing data, it is apparent that while the supervision of instruction and of the instructors may be more effective with spans of control in the neighborhood of five, that the per cent overhead is relatively high but is decreasing markedly as the span of control approached ten (figure 2). On the other hand, the size of classes for a span of control of five has decreased from  $15\frac{1}{2}$  to 15 and decreases only slowly as the span of control increases thereafter (figure 3). Similarly for spans of control below five, the size of classes increases sharply, particularly for spans of control of two (figure 3). The range of per cent overhead for the various levels is comparatively small for spans of control above five, being 16.7 for two levels and 20 for six at a span of control of five and 6.25 per cent, 6.7 per cent at a span of control of 15.

An analysis of the national totals of 1,768 colleges and universities<sup>3</sup> shows an average ratio of students per staff and faculty members of 12.3, and an average staff and faculty of 566 per institution. The administrative staff averages about one-eighth of the staff and faculty. This gives a ratio of about 16 students per instructional faculty member. Applying these averages to figure 3, it is apparent that the average class size of 16 would fit almost exactly a span of control of five, that is, classes of 15 on the second level, and 15.6 from the fourth levels and higher.

Of course, practical data applicable to figures 1 and 2 concerning per cent overhead, are not directly applicable to the national averages cited above, because of the practice of department heads and deans to carry some of the instructional loads themselves and to delegate a certain portion of their supervisory duties to their instructors.

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<sup>3</sup> Statistics of Higher Education 1945-46, Biennial Survey of Education in the U. S. (Washington, D. C.: Federal Security Agency, U. S. Office of Education, Government Printing Office, 1949), pp 42, 50, and 58.



## SOME ACTUAL TRENDS.

Spans of control vary widely between institutions of higher education and may change rapidly from time to time in any specific college or university. Typical spans of control are difficult to determine and define because of this difference between many of our leading universities. An average span of control would be readily determined for any level of responsibility in a number of representative institutions, however the standard deviation from that average would be large.

Various national publications give ratios of leader to immediate subordinates, which approach the implications of spans of control. For example, of the 1,768 institutions of higher education in 1946, some 136,000 staff members were employed on a full time equivalency basis. It might be said that the head of the average institution controls of a staff of 77 members. However, the number of staff members per institution varies within very wide limits. In universities, colleges and professional schools, the 165 publicly controlled institutions had a total staff of 54,800, or an average of 3,320. On the other hand the 886 privately controlled institutions had a total staff of 61,500, or an average of 694. The 217 teachers' colleges and normal schools had a total staff of 9,500, an average of 44. The 36 privately controlled teachers' colleges had a total staff of 709, an average of about 20. The 242 publicly controlled junior colleges and the 222 privately controlled junior colleges each had an average staff of about 20. It would not be too difficult to find among our giant institutions of higher education such as the State University system of California, the University of Minnesota and others, a staff and faculty running into

3,000 and more.<sup>4</sup> At the opposite extreme could be cited certain small colleges having staff and faculty well under 20, such as Brandeis University at Waltham, Massachusetts, established in 1849 with a faculty of 9 and a student body of 135.<sup>5</sup>

The above averages indicate little, other than that some institutions are larger than others and some presidents have larger personnel problems than others. To determine spans of control, it is necessary to examine organizational patterns in detail, to study groupings of personnel on different levels of responsibility and in the many areas of competence. That is, the above staff and faculty must be separated into staff groups and faculty groups. The faculty in turn must be separated into staff groups of classroom instructors, department heads, college deans and division chairmen, with perhaps a dean of the faculty in over all supervision. Then the span of control exercised by the various department heads and deans would have specific significance.

A span of control more easily understood and more readily obtainable is roughly explained by the ratio of students per instructor. Using national totals, if the 136,000 faculty members teach 1,677,000 students the average span of control of the instructor is about 12. This ratio or span of control is repeated in a surprisingly large number of instances, taken from different institutional groupings by geographic areas and academic subjects or fields.<sup>6</sup>

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<sup>4</sup> John Kieran, Information Please Almanac (New York: Farrar, Straus & Co., 1949), p. 262.

<sup>5</sup> Ibid, p. 255.

<sup>6</sup> \_\_\_\_\_, Statistics of Land-Grant Colleges and Universities, Year Ended June 30, 1948, Bulletin #8 (Washington, D. C.)

Other spans of control, taken from Circular 256, U. S. Office of Education of instructor over student, are 11.2 for public and 12.8 for private senior colleges and universities; public normal schools yield 11.6, the privately controlled, 12.4. The junior colleges show classes of 22.6 in publicly controlled institutions compared to 10.1 in privately controlled colleges. The publicly controlled junior colleges appear to differ greatly from the other groups of institutions, (see table 3).

A further summary of practices in organization and spans of control was developed for accredited institutions of advanced education having enrollments above five thousand. These institutions numbered about 89, including 33 of the 52 white land-grant colleges and 56 of the colleges and universities not receiving land-grant benefits.

Table 4 shows that the ratio of student to instructor for land-grant colleges is about 13.7 and for non land-grant colleges is about 13.1. Of the non land-grant, however, there is a wide variation in this ratio for certain types of institutions, the highest being at Southern Methodist with a ratio of 28.2 students per faculty member. The Catholic institutions yield a ratio of 23.8. The State controlled institutions show 19.3 and the private institutions being lowest with 10.9. The average for all is 13.1 as stated above.

TABLE 3. CONTROL AND PERSONNEL IN THREE MAJOR GROUPS OF INSTITUTIONS.

<u>Institutional Group and Type of Control</u>	<u>Number of Institutions</u>	<u>Staff</u>	<u>Enrollment</u>
Universities, Colleges and Professional Schools	1,051	116,280	1,400,583
Public Control	165	54,823	613,193
Private Control	886	61,457	787,390
Teachers Colleges and Normal Schools	253	10,257	119,812
Public Control	217	9,548	110,970
Private Control	36	709	8,842
Junior Colleges	464	9,495	156,456
Public Control	242	4,852	109,640
Private Control	222	4,643	46,816
Totals	1,768	136,032	1,676,851
Total Public Control	624	69,223	833,803
Total Private Control	1,144	66,809	843,048

Similarly the ratio of faculty members per department is 14.9 for the land-grant colleges and 13.5 for the non land-grant institutions.

Another ratio indicating a span of control is obtained by dividing the total number of departments by the total number of schools or colleges. This ratio yields 4.4 departments per college in the land-grant institutions and 5.1 in the non land-grant institutions. Because of the complex organizations in the larger universities, not readily susceptible to enumeration or evaluation these ratios of departments per college are subject to serious question. For the medium sized colleges, where the upper level organization is usually readily available, this ratio of about 4.4 to 5.1 shows a wide variation, the lowest calculated being 1.8 at the State University of Iowa with an enrollment of around 10,000, and the highest being 14.3 at Miami University in Oxford, Ohio. It is assumed in this last case that intermediate levels probably obtain between the college deans and the department heads.

TABLE 4. STATISTICAL DATA ON ACCREDITED COLLEGES AND UNIVERSITIES  
WITH ENROLLMENTS OVER 5,000

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	<u>Land-Grant</u>	<u>Non Land-Grant</u>
Institutions	33	56
Students	378,000	541,000
Faculty	27,700	35,700
Departments (Estimated)	1,800	3,300
Schools or Colleges	400	640

## 2. SPANS OF CONTROL AT SELECTED INSTITUTIONS OF HIGHER EDUCATION

The specific applications of spans of control require a study of the organizational patterns and principles of particular institutions of higher education. The institutions selected were chosen because of their availability and as being typical of the kind of field or area covered. For example, the University of Maryland was chosen as being a typical State supported Land-Grant university. The Georgia Institute of Technology at Atlanta was chosen because of its relatively high standing in the field of technology. Washington College at Chestertown, Maryland is a good example of a rather small but representative institution whose history runs back to colonial times. The State Teachers' College at Frostburg, Maryland serves an agricultural and mining community in a sparsely populated and mountainous region on the Eastern Seaboard. A number of service schools pertaining to the Armed Forces were included in the study because of the more definite information available from an organizational view point and because of the writer's experience with such educational institutions.

The organizational patterns of these institutions is compared to the national modes in spans of control developed in section 1 of this chapter, to the organizational principles developed in Chapter II, and certain conclusions are presented with respect to the leadership at the institutions studied as compared to the leadership principles developed in section 3 of Chapter II. In section 3 of this chapter is presented a proposed application of the organizational principles to one of the typical institutions studied.

The institutions studied include the following:

1. The Command and General Staff College, Fort Leavenworth, Kansas
2. U. S. Military Academy, West Point, New York
3. Air University, Maxwell Air Force Base, Montgomery, Alabama
4. Georgia Institute of Technology, Atlanta, Georgia
5. Washington College, Chestertown, Maryland
6. Frostburg Teachers College, Frostburg, Maryland
7. University of Maryland, College Park and Baltimore, Maryland



## 1. THE COMMAND AND GENERAL STAFF COLLEGE, FORT LEAVENWORTH, KANSAS

Of the various service schools of the Armed Forces comparable to institutions of higher education, probably the best example is the Command and General Staff College at Fort Leavenworth, Kansas. It is one of our oldest service schools and its history is well documented in readily available publications. Its curricula and objectives have remained reasonably unchanged throughout the years except as developments in arms and weapons have prescribed corresponding changes in the tactics and technique of warfare.

Currently the Command and General Staff College presents a nine months course each year for about 500 officers of average age 30, and rank of major. The course is comparable to upper level undergraduate study but with certain specialized subjects on the higher graduate levels. The course is prescribed but permits electives during two of the nine months, during which the class is grouped into four sections, devoted to instruction in personnel administration, in intelligence, in plans and operations, or in logistics.

The background and educational experience of the students vary widely. About 450 are United States officers representing all of the various arms and services of the Army, exchange students from the Navy and Air Forces, and a few officers from the Reserve components. About ten per cent of the student body are officers from foreign armies, representing some twenty countries, and are especially selected

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<sup>7</sup> Personal visits by author, and conferences.

because of their professional and academic attainments.

The faculty include about 150 instructors who present the various subjects of the curriculum. They are assigned to the five schools of the college; that is, the general course school, the personnel school, the intelligence school, the plans and operation school, and the logistics school. They are selected from the graduating classes for three additional years at the Command and General Staff College. In addition to their class room instructional loads, the faculty members are expected to participate in research projects, to assist in special instruction, to prepare articles for publication in service periodicals and to attend preparatory courses in speech and classroom techniques. During the summer months, most of the instructors are ordered to participate in field maneuvers or to attendance at refresher and observer courses at other schools.

The organization of the activities at the Post of Fort Leavenworth is relatively simple. The Commandant is in over all command of the Command and General Staff College, of the Post activities, of the U. S. Disciplinary Barracks, and coordinating adviser to the service schools throughout the United States on the next lower level. These lower level schools are the highest level schools for the various arms and services, such as the Infantry School at Fort Benning, Georgia, the Field Artillery School at Fort Sill, Oklahoma, and the many others. The span of control of the Commandant is thus three, with an assistant to coordinate the instruction at the other branch service schools.

The Assistant Commandant is responsible to the Commandant and exercises direct control and supervision over the Command and General

Staff College. His span of control is five, with a director in charge of each of the five subdivisions or schools.

The five school directors for the general course and for the personnel, intelligence, operation and training, and logistics courses, each have a specific responsibility for the ten weeks specialized instruction, and assist with the courses pertaining to their field, presented during the seven months of common instruction.

The organization of the five schools is fairly uniform. Each school director has approximately thirty instructors, grouped into five departments, each department under a department chief with an average of five instructors under him.

The ratio of students to faculty members is approximately 5, that is 500 students and roughly 100 classroom instructors. This detailed decentralization of students to specific instructors is seldom utilized practically. The students habitually attend classes in groups of about thirty or forty during the introductory phases of the various subject presentations. For seminar discussions, map maneuvers and staff practice, instructors are made available in the ratio of about 1 instructor to 5 students.

Students are assigned to faculty advisors for briefing, orientation and for special instruction. Each faculty advisor has assigned to him an average of five students for several months at a time.

The simplicity of this organizational pattern, the use of uniform spans of control of 5 at the different levels, the uniform orientation and training of the instructors in school policies and classroom techniques, and the ready access of five students to a designated faculty

advisor, all promote the rapid integration of the students into the college program. These organizational patterns and control devices facilitate discussions between students, and with faculty members, and promote the free exchange of information and experiences among students, and with faculty members. Perhaps equally important is the flexibility achieved by this decentralization to permit changes in the curricula and course content to meet new developments in weapons and war techniques. For example, during the war years, the surprise development of more powerful weapons, of more efficient aircraft and the surprise release of the Atom Bomb were integrated readily into the instructional program at a time when the urgency of the training mission would not permit any recess between the end of one semester and the beginning of the next.

## 2. THE UNITED STATES MILITARY ACADEMY, WEST POINT, NEW YORK<sup>8, 9</sup>

The service school most comparable to the older medium-sized college is perhaps the United States Military Academy at West Point, New York. It was founded in 1802 and has grown yearly in the size of student body and faculty in direct proportion to the population increase in the United States. Its student body is selected from all States of the Union and in proportion to the number of Congressmen from each State.

The courses follow a fixed curriculum except for minor electives in Language. The four year prescribed course leads to the degree of Bachelor of Science. Some emphasis is placed on physical training and on field and laboratory work in connection with military specialties of the Armed Forces. However, these subjects are covered during times when the student of the average liberal arts college would be away from school on vacation.

Currently the Military Academy has some 2,300 students under the instruction and guidance of some 300 instructors, a ratio of 8 to 1. Most classes or sections attend recitations in the major subjects each day. Classes average about ten cadets, each section under the direct leadership of an instructor. Practically all classes are conducted on the individual recitation or group discussion basis with periodic assemblies or lectures by national authorities on the various fields covered.

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<sup>8</sup> \_\_\_\_\_, Bulletin of the United States Military Academy 1949-50 (West Point, New York, United States Military Academy Press, 1949).

<sup>9</sup> \_\_\_\_\_, Official Register of the Officers and Cadets, United States Military Academy (West Point, New York, A. G. Printing Office, 1949).

The cadets are housed in barracks type dormitories. Their activities, both in and out of classes, are closely prescribed and supervised for the twenty-four hours of each day. They have about thirty days leave of absence each year.

The administrative and housekeeping requirements of the Military Academy are separate and distinct from the academic program. The athletic and physical training activities follow a rather complete prescribed curriculum as do the miscellaneous recreational projects for the Saturday afternoon and Sunday periods.

Organizationally, general control and responsibility for the Military Academy rest in its Superintendent. His immediate responsible subordinates include the Dean of the Academic Board for the academic courses, the Commandant of Cadets for discipline and field training, and the Post Commander for the housekeeping and administrative areas including the Post Hospital. The Superintendent's span of control is thus seen to be about three, but with a number of minor but important activities usually governed under his immediate supervision.

The Dean of the Academic Board is responsible for the academic instructional program. This instructional program is conducted by twelve department heads so grouped as to give the Dean of the Academic Board six major department heads and a miscellaneous group of six departments having small responsibility for instruction. Each of the six major department heads control an average of four instructional groups, each group averaging about six instructors. The sizes of the departments and of the instructional groups vary widely with the emphasis placed on the subjects taught. The largest departments are the

English, Mathematics, Foreign Language and the Science Department. One of the smallest departments presents Military Hygiene with two instructors, they and the department head being on part time duty from their major assignment with the Post Hospital. The largest department teaches the Foreign Languages with 33 instructors, divided into five groups.

### 3. THE AIR UNIVERSITY, MAXWELL AIR FORCE BASE, MONTGOMERY, ALABAMA<sup>10</sup>

The Air University at Maxwell Field near Montgomery, Alabama has supervision over the various service schools of the Air Forces at Maxwell Field as well as at other school centers. Its mission is similar to that which the Command and General Staff College at Fort Leavenworth, Kansas, performs for the Army, but is enlarged to include certain instruction more applicable to long range strategic operations, and to training and refresher courses in certain specialties peculiar to the Air Forces. The Air University is quite young, was founded about 1945, but has grown rapidly. It had the advantage of the lessons learned by the other service schools during their long histories, and was guided in its organizational patterns by some of the leading educators and administrators from our best universities and colleges of the country. Many of these were members of the Armed Forces as participants in the War effort. If their advice was followed, the Air University should be an outstanding example of the university best meeting the recommendations of the nation's most talented educators.

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<sup>10</sup> The Air University Catalog, 1949-50 (Maxwell Air Force Base, Book Department, 1949).



The Air University announced 6,090 graduates during its 1947-48 school year. Its twenty-six courses of varying lengths and wide diversity of levels of instruction, were assigned to six major subdivisions. These subdivisions and the number of graduates are as follows:

Air War College	96	1 Course
Air Command and Staff School	332	2 Courses
Air Tactical School	1,726	2
AF Special Staff School	1,188	7
AF School of Aviation Medicine	2,352	8
Instructor Training Course	<u>396</u>	<u>6</u>
Totals	6,090	26

The Special Staff School is located at Craig Air Force Base, Selma, Alabama; the Air Tactical School is at Tyndall AFB, Panama City, Florida; the School of Aviation Medicine is at Randolph AFB, San Antonio, Texas.

At the Air University education and administration are separated whenever and wherever possible. Parallel echelons have responsibilities and duties which permit the educators and instructors to devote their entire time and attention to teaching, without concern for the administrative and housekeeping problems.

A Board of Visitors, composed of eleven leading civilian educators and university administrators of the United States, meets yearly to examine into the status, progress, and changes in education at the Air University, and to make recommendations to the higher authorities in Washington.

The nine members of the Faculty Board meet every other week to plan for and direct the detailed operation of the various elements of the Air University. The members of the Faculty Board are the responsible heads of the six colleges, schools and courses making up the Air University. The Air University concerns itself with educational plans at other armed forces schools through the exchange of liaison instructors; it plans for the education of Air Forces officers at over 100 civilian universities; it examines critically all Air Force problems with a view to coordinating education with practical needs.

The Air War College conducts top level air forces instruction for about 100 students in a nine months course each year. Lectures, conferences, and seminars lead the nine student groups to coordinated solutions to specific problems in nine areas, progressively more difficult. Seven instructor groups averaging three instructors each, supervise the various phases of instruction, the many guest speakers and lecturers, and the evaluation of the students and their work. An administrative group of 14 officers, with their services and facilities, support the educational effort. Extensive library facilities and an educational advisory staff of civilian educators favor research and comparative studies.

The spans of control for the Air University vary, but are consistently low. Its commanding general has six schools and colleges under his immediate control. The head of the Air War College has seven instructional groups under his immediate supervision. Each group averages three members. About twenty instructors coordinate the instruction of one hundred students, a ratio of one to five,

and an average span of control of five, or less when the many visiting speakers are taken into consideration.

The Air Command and Staff School graduates some three hundred student officers annually from a nine months prescribed course at Maxwell AFB, utilizing some sixty-four instructors, a ratio of one instructor to five students. The sixty-four instructors are assigned to seven divisions varying in size from four to eighteen instructors each. With formal subdivisions in the larger divisions, the spans of control are less than five. The Commandant of the school has an apparent span of control of eight, seven instructional and one administrative; however, because of the tendency of the Army and Navy divisions to associate themselves with the operations division, and new developments division with logistics division, the resultant span of control practically is nearer four or five. A large number and variety of guest speakers support the curriculum; administrative problems are the concern of some twenty officers with their facilities and assistants, specifically assigned for such functions. The span of control for the administrative group averages four.

The Air Tactical School of the Air University presents three sixteen week courses annually to classes of about five hundred each. One hundred fifty instructors in seven instructional divisions, each with an average of three subdivisions, suggest a pattern for spans of control of seven. The instructor-student ratio is about one to three per sixteen week course.

The AF Special Staff School and the AF School of Aviation Medicine present a variety of courses of varying lengths and to specialists of different age and educational levels, (as well as ranks from

Colonels to privates or airmen). At first inspection, the instructor assignment and the grouping would indicate a very low span of control in practically all elements of this system of schools and courses. However, because of the interlocking staffs and the double duty performed by many instructors, the average span of control is estimated to be about four to five. The consistent separation of administrative functions from instructor duties makes for smaller spans of control over homogeneous groupings.

#### 4. THE GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, GEORGIA

The Georgia Institute of Technology was authorized by the State in 1882 and commenced instruction about 1888. Its campus is located in the center of Atlanta, comprises about 130 acres, and with its buildings and other improvements, has a current plant value of eighteen million dollars. It ranks near the top among the institutions offering courses in technology. Its announced aims are the promoting of scientific and economic research and instruction for the development of the resources of the Southern States, to participate in the national leadership both in man power and industrial developments, to cooperate with industry in both research and human leadership.

The Georgia Institute of Technology is a part of the State University system of Georgia. The control of the University System of Georgia is vested in the twenty members of the Board of Regents, each representing specific geographic areas of the State.<sup>11</sup>

The Georgia Institute of Technology has an approximate enrollment of 5,000 students. Its twenty-four instructional departments are about equally divided between the Engineering College and the general college. The programs of these two colleges are utilized by the Dean of the Graduate Division, by the Head of the Armed Forces Division, and by the Director of the Cooperative Division. The Institute has a faculty of about 300 with 11/4 on the Engineering

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<sup>11</sup> \_\_\_\_\_, Georgia Institute of Technology Announcements 1948-1949 (Atlanta, Georgia: The University System of Georgia, 1948) p. 5.

faculty and 186 on the General Studies faculty.<sup>12</sup>

In 1948, the President of the Georgia Institute of Technology reduced the number of departments reporting directly to him from twenty-two to eleven. These eleven are the Comptroller, Alumni Relations, Research and Planning, the University Broadcasting Station, the Executive Dean, the Dean of Students, the Registrar, Librarian, Dean of Faculty, Director of Public Relations, and Athletics. In practice, these eleven are reduced to five major heads reporting to the President, including the Comptroller, the Vice President in Charge of Research and Planning, the Dean of Students, the Registrar, and the Dean of the Faculty.<sup>13</sup>

In spite of this reorganization, the committees and councils remain unwieldy. The Administrative Council has nineteen members, the Standing Committees of the faculty number twenty, with a membership varying from three to nine each. The special committees of the faculty number fourteen with memberships between three and ten each.

The enrollments in 1947-48 were 6,424 in regular attendance, 4,706 in the Engineering Extension Division, with 1,518 more in both day classes and the Extension Division and a combined total of 10,274.

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<sup>12</sup> Blake R. Van Leer, A Digest of the Report of the President 1947-48 (Atlanta, Georgia: Georgia Institute of Technology, 1948), p. 29.

<sup>13</sup> \_\_\_\_\_, "Extensive Reorganization Plans for Georgia Tech Announced." The Georgia Tech Alumnus, Vol. XXVII, #1, Sept. - Oct., 1948 (Atlanta, Georgia: Office of Publications, Georgia Institute of Technology, 1948), pp. 12-13.

In 1947, 619 baccalaureate degrees were granted and 34 masters.<sup>14,15</sup>  
The division of Graduate Studies was organized in 1941 and the degree  
of Ph. D. in Chemical Engineering was authorized in 1946.

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<sup>14</sup> Ibid, pp. 221, 222.

<sup>15</sup> Blake R. Van Leer, op. cit. pp. 24-29.

The educational policies of the Georgia Institute of Technology may be inferred from the objectives set up by the Georgia Tech Alumni Foundation for the Graduate School as follows:

1. To make possible the scientific and economic research and investigation necessary for the development of the resources of the South, and to utilize human and natural resources so as to make the South an economically rich and profitable part of the United States and the World.
2. To develop material tests in the laboratories of the Georgia Institute of Technology for the use of American Industry.
3. To train scientific and engineering leaders who will make possible the efficient utilization of manpower in the manufacture of new and better commodities for use in the South and throughout the United States.
4. To foster the continuous coordination of effort between the educational facilities of universities, and the productive facilities of industry.
5. To provide modern equipment and up-to-date facilities at the Georgia Institute of Technology for utilization by small and large industries, and for the training of scientific and engineering leaders.

Academically the freshman course for all engineering students is common and includes three hours of composition and rhetoric and three hours of a modern language or a social science. During the sophomore year most courses require three hours in the humanities and some public speaking. Most other subjects in the various curricula are scientific or technical. For control, the Administrative Council of the Georgia Institute of Technology has about nineteen members as follows: President, Executive Dean, Dean of Graduate Studies (Acting), Dean of Engineering, Dean of General Studies, Dean of Students, Registrar, Comptroller, Director of Engineering Experiment Station, Director of Cooperation Department, Director of Engineering Extension Division, Librarian, Director of Public Relations, Professor of Naval Science, Professor of Military Science



and Tactics, Athletic Director, Professor of Aeronautical Engineering, Professor of Mechanical Engineering, and Associate Professor of Mathematics.

In addition to this Council, there are twenty Standing Committees of the faculty, ranging in size from three to seven members and dealing with the following subjects: Admission, Attendance, Ceremonies, Curriculum, Executive, Honors and Prizes, Infirmary, Library, Professional Degrees, Public Relations, Radio Broadcasting WGST, Rules and Regulations, Schedule, Standing, State Residence, Student Activities, Student-Faculty Honor, Student Loan and Scholarship, Tenure and Advancement, University Center.

Fourteen special committees of the faculty are engaged with study and planning in the following areas: Advanced Planning, Employee Training, Fire Protection, Foreign Students, Guidance and Testing, Insurance, Mailing Permits for Publications, Parking, Public Works, Student Lecture and Entertainment, Student Regulations, Veteran's Affairs, Visual Aids to Education, Vocational-Technical Institutes.

## 5. WASHINGTON COLLEGE, CHESTERTOWN, MARYLAND.

Washington College is located at the northern end of the Eastern Shore of Maryland in a small country town of some three thousand population. It is privately controlled but has received Federal and State support at various times in its long history.

Washington College is essentially a small Liberal Arts institution. It offers curricula for training of secondary school teachers and a variety of professional courses. It is accredited by the Maryland State Department of Education and the Middle States Association of Colleges and Secondary Schools.

Washington College dates back to 1706 when it was known as the Kent County School. It was endowed by Colonial Land-Grant in 1723. It received its Charter as Washington College in 1782, being named for George Washington. About 1800 it was recognized by the State of Maryland as the first University of Maryland but only briefly. It has received State funds in varying amounts from time to time during its long history, and currently receives sixty thousand dollars annually in return for a number of scholarships (seventy undergraduate scholarships valued from \$50 to \$400 were awarded in 1946-47).<sup>16</sup>

The college is currently governed by a "Board of Visitors and Governors" of twenty-five members holding six-year terms, twelve of these members are elected by the Alumni and twelve are appointed by the Governor of Maryland. The twenty-fifth member is elected by the Board and becomes President of the college.

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<sup>16</sup> William L. Marbury, Higher Education in Maryland, (Washington, D. C.: American Council on Education, 1947), pp. 79-80.

The college is organized with nineteen instructional departments staffed by thirty professors of varying ranks, including fifteen on the doctorate level, thirteen masters, four bachelors and two professional. Academically the college is organized on the divisional rather than the department system, with upper and lower level distinctions in courses and curricula. The 1946-47 enrollment was 470 undergraduates, including 314 men and 156 women. Of these 211 were veterans. In addition the college has an extension enrollment of 12.

The college is located on a campus of some twenty-five acres and with buildings, grounds and equipment is valued at about one million dollars, the 1947-48 budget was two hundred ninety thousand dollars. About seventy per cent of the students are housed in dormitories on the campus, the balance being quartered in selected residences in Chestertown. The administrative staff includes the Dean of College, Dean of Men, Dean of Women, Registrar, Director of Admissions and the Business Manager.<sup>17</sup>

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<sup>17</sup> A. J. Brumbaugh, Editor, American Universities and Colleges, (Washington, D. C.: American Council on Education, 1948), pp. 909-910.

## 6. FROSTBURG STATE TEACHERS COLLEGE, FROSTBURG, MARYLAND

Frostburg Teachers College is located about twelve miles west of Cumberland, in the mountain regions of Western Maryland. Its purpose is announced as an institution for providing an educational program for the young men and women of Western Maryland which will train them to teach in the elementary or in junior high schools. It seeks to provide annually one-fourth of the five hundred new teachers required each year by the State of Maryland. The college provides also two years of junior college required for preliminary professional training. It invites those who are not interested in teaching to enroll for their first two years of college training with a view to transferring to other Liberal Arts or professional colleges. The college encourages student nurses for preliminary academic training during their work at the School of Nursing at the Memorial Hospital in Cumberland. It has conducted summer workshops for experienced teachers in such areas as Conservation, Visual Education, Child Study, Music, Art, Social Studies, Reading, Arithmetic, Psychology, and related fields.

The college was established in 1902 as a State Normal School with a twenty thousand dollar building and a five thousand dollar annual maintenance fund voted by the General Assembly. The Gymnasium and a campus were added in 1913. Dormitories were opened in 1919 and 1925. In 1927 an Auditorium-Gymnasium was built and central heating installed. A six-room elementary practice school was established in 1930. A Science Department building was added in 1947 by a joint project, State Funds being used for the foundation and forty

thousand dollars being supplied by the Federal Government for the building. The current plant is valued at about one-half million dollars and after alterations were made in 1948 at a cost of about one hundred thousand dollars. The campus lies along the main highway and currently has six buildings, the Old-Main Building, and buildings for administration, science, gymnasium, library, dormitories and the College Elementary School.

Students' fees are \$100 for the school year in the junior college with additional fees for social activities and athletics. For students who promise to teach two years after graduation, the tuition fees are waived. Out-of-State students pay an additional \$100 tuition fees. Curricula offered are Business Administration, English, Romance Languages, Health and Physical Education, Music and Art, Science, Mathematics, and Social Science as well as the professional curricula for professional teachers. The college faculty numbers about twenty and the college elementary school faculty about seven. There are seven faculty committees on Admission and Standards, Guidance, Catalog, Varsity Shop, Athletics, Public Relations, Assembly, Talent, Library, and Visual Education. The 1944 graduating class numbered 54. The succeeding three years saw the graduation of 24, 30 and 17. In 1948 the enrollment was about 200 with 25 student nurses from Memorial Hospital in addition.

The college grants a B. S. degree in Education for four full years of work totaling some 128 hours. Suggested curricula and sequences are announced for elementary school education and junior high school education.<sup>18</sup>

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18  
State Teachers College, Frostburg, Maryland,  
Bulletin (Baltimore, Md.: State Board of Education, 1948).

Maryland has four State Teachers Colleges, the other three being located at Salisburg, Towson and Bowie (negro). In addition, Coppin Teachers College, supported by the City of Baltimore, prepares teachers for the Negro elementary schools of that city.

The Frostburg Teachers College has the usual accreditation by the State Department of Education of Maryland but does not qualify for accreditation by the American Association of Teachers Colleges nor by the Middle States Association of Colleges and Secondary Schools.<sup>19</sup>

Frostburg Teachers College is under the State Board of Education and Trustees as a governing body having seven members. The State Superintendent of Education is "ex-officio" Secretary-Treasurer of the Board. The college has twelve "Officers of Administration". The college is State supported with periodic grants from Federal funds. The per student expenditure for library books was about \$16.00 in 1947. This rate was exceeded in the State Colleges of Maryland only by St. Johns College. It ranked high for its size in the quality of library books and periodicals as compared to the other State institutions.<sup>20</sup>

The Marbury Report indicated the need for such extensive plant and ground additions to bring the Frostburg Teachers College up to the level of other State Teachers Colleges that a recommendation was made that the institution be moved from its present site to a location closer to the town of Cumberland where a larger and more suitable campus could be provided and more adequate buildings could

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<sup>19</sup> William L. Marbury, Chairman, Higher Education in Maryland, (Washington, D. C.: American Council on Education, 1947), p. 76.

<sup>20</sup> Ibid, p. 230.

be constructed.<sup>21</sup> This recommendation was disregarded and instead alterations in the amount of one hundred thousand dollars were provided by the General Assembly to improve the present site and the existing buildings. This fund was twenty per cent of the book value of the plant.

The Marbury report in 1947 comments on the small output of qualified teachers from the State Teachers College in general and the high cost of operation of these teachers colleges. The report does admit the lack of incentive toward entering the teaching profession as being one of the factors responsible for this condition but goes on to say "the number of teachers being trained at that institution (Frostburg) is certainly very small in relation to the amount of money which the State is investing. This is in part due to the unfortunate location of the fiscal plant.....".<sup>22</sup> The recommendation went so far as to recommend the abandonment of the Frostburg Teachers College as an institution for teacher training and the establishment of a junior college in nearby Cumberland in conjunction with the high school system there, but the report frankly favored the training of teachers at the University of Maryland as being more productive of teachers and requiring no additional outlay or expenditure out of State funds.<sup>23</sup>

In spite of these drastic recommendations and the difficulties that Frostburg Teachers College has had with inadequate grounds and buildings, the institution continues to flourish as an educational center primarily for the young people of Western Maryland.

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<sup>21</sup> Ibid, pp. 257-259.

<sup>22</sup> Ibid, p. 349.

<sup>23</sup> Ibid, p. 364.

## 7. THE UNIVERSITY OF MARYLAND, COLLEGE PARK AND BALTIMORE, MARYLAND

The University of Maryland is centered at College Park, with the professional schools located in Baltimore. The Agricultural College for colored students at Princess Anne is part of the University of Maryland primarily because of its participation in Land-Grant benefits.

The University has a long and varied history. The first Charter for a University of Maryland was granted in 1807 and recognized Washington College at Chestertown, on the Eastern Shore, as the State University. The following year St. Johns College at Annapolis was designated as part of the University of Maryland. In 1812 the Medical School at Baltimore was chartered as the University of Maryland.

During the hundred years thereafter various educational institutions were integrated into the University of Maryland and others were dropped. St. Johns College at Annapolis appears to have been part of the University of Maryland around 1807 and again in 1912. Similarly various schools and colleges in Baltimore were recognized as part of the University of Maryland from time to time. About 1916 the State Agricultural College at College Park was combined with the professional schools in Baltimore to form the present greater University of Maryland.

In Maryland, administrative control of higher education is exercised by the State Legislature and the Governor, in their appointing authority of the governing Boards of the institution, and their rather detailed supervision of the appropriation and expenditure of funds for each institution.



The State exercises further restriction and control over the functioning of higher education by the supervisory and approving powers of many of its State bureaus over the detailed expenditure of funds and the appointing of staff and faculty members. Such control by the bureaus is exercised indirectly but fairly influentially by such agencies as the State Budget Director, the Board of Public Works, the Improvement Commission, the State Planning Commission, and others. A recent survey of the University of Maryland remarks "as might be expected, some confusion and conflict results from the controls that operate through these indirect channels, because of actions which seem to contravene the authority and responsibility established through the direct control by the various institutional policies".<sup>24</sup>

In practice, leadership and control of the University of Maryland are actually implemented by the President as the administrator for the Board of Regents. This Board has eleven members, appointed for nine year terms<sup>25</sup> and considered appointees of the State Governor.

The President of the University of Maryland has under his immediate control some nineteen schools, colleges and educational divisions. Some twenty-nine administrative officers report to him more or less directly for instructions and leadership. The President reviews the actions of a great variety of Boards, Committees and Councils. He is assisted by the conventional staff sections and by the Dean of the Faculty. The Deans of the twelve colleges habitually report directly to the President and consider themselves as co-equal colleagues. The University recognizes about 106 academic departments,

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<sup>24</sup> William L. Marbury, e. a., Higher Education in Maryland (Washington, D. C.: American Council on Education, 1947), 113-124.

<sup>25</sup> Ibid, p. 103.

staffed by some 800 faculty members who are responsible for the instruction of some 11,000 regularly enrolled students.<sup>26</sup> The greater University has a combined enrollment with special courses, of about double this number.

The University presents four major divisions of instruction, Liberal Arts, Engineering and Technical Subjects, Agriculture and Agricultural Engineering, and the Professional Curricula of the Baltimore Schools. These corresponding curricula are under the supervision of the Colleges of Agriculture, Arts and Science, Business and Public Administration, Education, Engineering, Home Economics, Military Science, Physical Education and Recreation, and Special and Continuation Studies. Graduate courses are supervised by the Dean of the Graduate School. Extensive courses are presented during the summer session, both on and off campus. At Baltimore, the professional courses are presented by the Schools of Dentistry, Law, Medicine, Nursing, and Pharmacy. These Schools are centered in the general area of the University Hospital.

A variety of research and extension courses are presented in conjunction with the Agricultural Experimental Staff, in extension services in Agriculture, Home Economics and other specialties. An increasing number of cooperative projects are arranged with Federal experimental and educational agencies, such as the Forestry Department, the Department of Mines, the Department of Agriculture Experimental Farms, the Department of Fisheries and others. Most of these special

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<sup>26</sup> A. J. Brumbaugh, e. a., American Universities and Colleges (Fifty Edition) (Washington, D. C.: American Council on Education, 1943), pp. 521 and 522.

projects have been assigned more or less definitely to specific colleges, schools or departments of the University.

The enrollment for 1946-1947 was about 11,000 for the regular session but has increased to a grand total of over 20,000 if the special courses and curricula are taken into account. In 1947 about 450 students received degrees. The 1951 graduates total over 2,000. About three-fourths of the students are natives of Maryland or the adjacent District of Washington. The bulk of the students are drawn from Baltimore City, the District of Washington, Prince George's County, Montgomery County, and Baltimore County, in that order. A relatively small per cent come from the other counties.<sup>27</sup>

#### FACTORS FAVORING GROWTH & REORGANIZATION OF HIGHER EDUCATION IN MARYLAND

The population of Maryland in 1940 was about 1,800,000. About 79% were native born white, 4½% were foreign born white and 16½% were negro. The population of Maryland has increased about 12% each ten years for the past nine decades. About one-third of Maryland's population is under 20 years of age, but 42% of the total population constitute its labor force. Among the States of the nation, including the District of Columbia, Maryland ranks 18th in the national wealth, 24th in State tax collections, 15th in Federal tax collections, 15th in total value of manufactured products and 14th in total salaries and wages in manufacture. Among the States Maryland ranks 45th in the per cent of its 18 to 20 year olds in school, 45th in its 16 to 24 year olds in school, and 40th in its 5 to 24 year olds in school. In the ten years, from 1936 to 1946, 8,852 white students and 1,134 negroes graduated from public high schools.

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<sup>27</sup> William L. Marbury, op. cit. p. 35.

TABLE 5. DATA ON INSTITUTIONS OF HIGHER EDUCATION IN MARYLAND<sup>29</sup>

Groups and Institutions	1	2	3	4	5
<b>Colleges and Universities:</b>					
College of Notre Dame of Md. Balt.	M	RC	W	451	
Goucher College. Balt.	AM	P	W	743	
Hood College. Frederick	AM	P	W	521	
Johns Hopkins University. Balt.	AM	P	MW	6856	21.5% of total
Loyola College. Balt.	M	RC	M	954	
Md. College for Women. Lutherville	-	P	W	230	
Morgan State College. Balt.	M	St	C	1266	4.0% of total
St. John's College. Annapolis.	-	P	M	266	
St. Joseph's College. Emmitsburg	M	RC	W	215	
St. Mary's Seminary and U. Balt.	-	RC	M	497	
U. of Md. College Park and Balt.	AM	St	C	10612)	34.0% of total
Md. State College. Princess Anne	-	St	C	194)	
Washington College. Chestertown	M	P	C	474	
Western Md. College. Westminster	M	Meth	C	855	
Woodstock College and Sem. Woodstock	M	RC	M	165	
Group total				24890	78% of total
<b>Professional and Technical Schools:</b>					
Balt. College of Commerce. Balt.	-	YM	C	1367	4.3% of total
Md. Institute. Balt.	-	P	C	515	
Ner Israel Rabbinical College. Balt.	-	J	M	96	
Peabody Inst. of the City of Balt.	-	P	C	639	
USNA. Annapolis (Omitted from total	AM	Nat	M	2876)	
University of Balt. Balt.	-	P	C	2009	6.3% of total
Westminster Theological Seminary		Meth	C	58	
Group total				4684	14.63% of total
<b>Teachers Colleges:</b>					
Coppin Teachers College. Balt.	-	C	C	167	
Md. State Teachers College at Bowie	-	St	C	148	
" Frostburg	-	St	C	250	
" Salisbury	*	St	C	310	
" Towson	*	St	C	606	
Group Total				1481	4.64% of total
<b>Junior Colleges:</b>					
Montgomery Junior College. Bethesda	-	Co	C	367	
Mt. St. Agnes College. Balt.	M	RC	W	255	
St. Charles College. Catonsville	M	RC	M	200	
St. Mary's Female Seminary. St. Mary's	-	St	W	51	
Group Total				873	2.73% of total
<b>Total Enrollment</b>				<b>31928</b>	<b>100%</b>

Column 1 Accrediation  
 2 Control  
 3 Men, women or coed. students  
 Column 4 Enrollment  
 5 Percent of total enrollment

<sup>29</sup> Educational Directory, Higher Education, 1948-9, Part 3. U. S. Office of Education, Washington, D. C. Government Printing Office, 1949. pp. 7, 57-60.

In 1940, ten and seven-tenths per cent of students of the population between 18 and 24 years of age were attending college.<sup>28</sup>

Table 5 summarizes the enrollment in 1947 in the various colleges and universities of Maryland. The table shows their location, accreditation, control, composition of student body and enrollment. The total for the State is 31,928. Of this total Maryland's enrollment of 10,806 constitutes 34% or very roughly one-third. Disregarding the professional and technical schools with a total enrollment of 4,684, the teachers colleges with 1,481 and the junior colleges with 873, the total enrollment for the balance of the colleges and universities is 24,890. Of this last total Maryland University with its enrollment of 10,806 constitutes 43.5% or almost one-half.

The 1940 census shows that about one-tenth of the population between eighteen and twenty-four were attending college and that 10,985 were graduating from high school that year. This total of eligibles for college would yield a freshman enrollment of 3,662 if one-third of the total eligibles entered the university. From this it would appear that disregarding losses, the total possible enrollment for the University of Maryland for the regular undergraduate program is in the neighborhood of 15,000 students, disregarding those who might come to the University of Maryland from outside the State.

It is interesting to note that of the thirty-one institutions of advanced education, fifteen or about one-half are listed as colleges and universities and sixteen as professional and technical schools, teachers colleges and junior colleges. The colleges and universities account for 78% of the enrollment and the other three groups yield

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<sup>28</sup> Ibid, pp. 11-25.

15%, 5% and 2% respectively. Five of the thirty-one institutions have enrollments over 1,000 and yet they account for only 70% of the total enrollment. The other 30% of the enrollment is distributed among twenty-five institutions, an average of little better than 1% per institution. In this latter group the largest is Loyola College in Baltimore with 954 students and the smallest is St. Mary's Female Seminary, St. Mary's City, with 51 students. Expressing this condition in another way, about 9,600 students are distributed among 25 institutions, with an average enrollment of about 380 and 22,400 students are enrolled in 5 institutions with an average enrollment of 4,480. With the present interest in the establishment of a greater number of junior colleges, it would appear that the growth of enrollment would favor the 25 smaller institutions with their average enrollment of 380, rather than the 5 larger institutions with their average enrollment of 4,480. If the growth of these many smaller institutions is to be more vigorous in the years to come, it is likely to be at the expense of the enrollments in the two largest, that is the University of Maryland and Johns Hopkins University. The growth in resident college enrollments from 1929 to 1946 in Maryland showed a decided growth from '29 to '39, fell off noticeably during the war years, and had barely reached the '39 totals by 1945-46. The totals cited are 13,000 in 1929, 18,600 in 1939, and 17,100 in 1945. These figures are based on twenty-two institutions and do not include the teachers colleges and junior colleges.<sup>30</sup>

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30 \_\_\_\_\_, Statistics of Higher Education, 1945-46  
(Washington, D. C.: U. S. Office of Education), pp. 12, 64.

Certain other factors favor a larger college enrollment in Maryland. Maryland has 1.32% of the national youth under 20 years of age but 1.63% of the national income.<sup>31</sup> The State has but 17.9% of the 18 to 20 year olds in school and 32.9% of the 16 to 24 year olds in school, and on both scores ranks forty-fifth in the list of States, Utah being the highest and Kentucky the lowest.<sup>32</sup> More specific figures indicate that in the age group, 18 to 20 year olds, 18,532 out of 103,806, or about 18% are attending college. In the 21 to 24 year old bracket, 6,545 out of 130,986 or 5% are attending college.<sup>33</sup> In 1938-39, of the Maryland youth attending college, 72% attended in Maryland and 28% went to other States to college.<sup>34</sup> Of this 28%, totaling 4,000 students, 1,138 went to the District of Columbia and about 550 to Pennsylvania and a similar number to Virginia. At the same time, about 5,200 students came to Maryland colleges from other States, 1,036 from New York State, 827 from Pennsylvania, 782 from the District of Columbia and smaller numbers from practically all the other States in the Union.<sup>35</sup>

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<sup>31</sup> Ibid, p. 16.

<sup>32</sup> Ibid, p. 20.

<sup>33</sup> Ibid, p. 25.

<sup>34</sup> Ibid, p. 26.

<sup>35</sup> Ibid, p. 28.

The trend in enrollment increases at the University of Maryland have been fairly uniform throughout the past twenty years. The enrollment in 1930 was about 3,000, in 1940 around 5,600, and 1945 it rose to 6,000, in 1946 to 8,400, in 1947 to 10,800, and in the fall semester of 1948 the enrollment was listed as 13,500.<sup>36</sup>

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<sup>36</sup> Ibid, p. 39.



### 3. AN APPLICATION TO A TYPICAL INSTITUTION.

As indicated in the preceding discussion, the University of Maryland is organizationally patterned after the institution with a large number of college and school deans, administrative chiefs, political and community leaders reporting directly to the President. The actual number is not readily apparent either from the personnel tables nor from an observation of the actual functioning of the top level of the university. It is probable that academically about twenty schools, colleges and educational divisions are more or less under the President's direct supervision. In addition to these, on his administrative staff about thirty chiefs come to him for guidance and leadership. He personally supervises the frequent meeting of the General Administrative Board and reviews the reports and projects of about a dozen standing faculty committees as well as those of a constantly changing group of special committees. His contacts outside of the university include frequent conferences with the Board of Regents, members of the State Legislature and the Governor as well as the heads of a number of State Executive Departments having an indirect supervision over the university personnel policies and budgetary matters.

The reorganization of the university with a view to simplifying the relationships between the President and the leaders of the many activities for which he is responsible might well follow the pattern presented in Chapter II, based on small spans of control and decentralization of authority. If the average span of control is five or an average of five, the five vice-presidents to control these five groupings of activities might well be the following:

The Vice-president in Charge of the Lower Division College

The Vice-president in Charge of the Upper Division College

The Vice-president in Charge of the Administrative

Divisions

The Vice-president in Charge of the Planning and Public

Relations Division

The Vice-president in Charge of the Business Division.

Such a structure at the top level would require five vice-presidents of unquestioned ability and a willingness to coordinate their activities amongst each other. In addition they should possess a sense of responsibility and loyalty to the President which would enable them to act with confidence and effectiveness in all routine matters. On the third level of authority or control, the spans of control could be kept equally simple and direct with an average of five deans, administrative chiefs and executives for planning, public relations, and business activities.

For example, in the Lower Division College about five deans of schools offering the basic or foundational courses for the freshman year would present a simple administrative and academic organizational pattern. These five schools would include:

English, Mathematics, History, General Science and  
Special Studies.

This organization would follow the pattern being adopted at a number of our recently established or reorganized larger universities in presenting a common program for all students during their freshman year and in administering this program under a centralized

authority. Examples of this procedure are the Universities of Minnesota, Missouri and Florida among the Land-Grant colleges, and the Universities of Louisville, Miami and Michigan to name a few of the non-Land-Grant universities.

The Vice-president in charge of the Upper Division College could assemble the nineteen existing schools and colleges into four Institutes, each in charge of a corresponding dean. These might be

The Institute of Technology

The Institute of Medicine

The Institute of Education

The Institute for Social Studies.

This organization would give the Vice-president in Charge of the Upper Division College a span of control of four, and the dean of the four Institutes would divide the nineteen existing schools and colleges into groups of about five to give each of them a corresponding span of control. The actual grouping of the nineteen colleges would be a relatively simple procedure and should take into account similar missions, geographical locations and a balancing of the academic and administrative loads of the different schools and colleges.

To continue with the subdivisions of the Upper Division College on the fourth level, the university currently has about one hundred departments. These divided amongst the nineteen schools and colleges would give an approximate average span of control of five. Here again the grouping of departments might require a

review of the missions and capabilities of the various departments in the light of present-day and future educational objectives.

Continuing further with the Upper Division College, the fifth level would deal with the classroom instructors. The university has about eight hundred on the faculty list. Referring to Chart 1 of Chapter II the number of instructors on the fifth level with a span of control of five is 625 and the total faculty for that organizational pattern is 781. This closely approximates the situation at the University of Maryland. Again, if the 625 faculty members whose functions are primarily classroom instruction, are assigned to the 100 departments, an average span of control of 6.25 would result.

Finally, for an enrollment of about 12,500, the average class size would be twenty students.

The above plan for reorganizing the University of Maryland on a pattern based on that described in Chapter II with a span of control of five and five levels would appear to be closely applicable to conditions as they now exist in the University of Maryland. It is conceded that the rigid application of this plan would not meet all situations nor would such a fixed procedure be desirable. However, it becomes apparent from Chart 1, in Chapter II, that if the span of control were changed to four that the number of resultant classroom instructors would drop from 625 to 256, less than half. Similarly if the span of control were raised to six, the number of classroom instructors would be about doubled, that is raised from 625 to 1,296. From this it would seem that a deviation in the

span of control of one on any level would adjust for any reasonable differences in the sizes and needs of the academic groups being reorganized.

In similar manner the Vice-president in Charge of the Administrative Division might well have under him

The Director of Admissions

The Registrar

The Director of Student Welfare

The Director of Personnel and Placement

The Director of General Administration.

The above five assistants to the Vice-president in Charge of the Administrative Division would constitute the third level of authority. In most instances the organizational structure might reach into the fifth level as in the case of the Director of Student Welfare coordinating the activities of the Dean of Men and the Dean of Women where each would have his clerical staff.

The Vice-president in Charge of Planning and Public Relations would probably be required to organize an entirely new group. He might have directors for the following five activities:

Public Relations

Fiscal Planning

Plant Planning

Political Relations

Relations with Board of Regents and State Agencies.

On the fourth level the planning, and Public Relations group in some instances would be made up of the actual operating and clerical staff. On the other hand, the Director for Board of Regents and State Agencies group might require technical specialists, each familiar with a specific phase of the State Executive Agency Group and who would be supported by the necessary clerical staff.

The Vice-president in Charge of the Business Division might well take over the organization of the present Division of Business Management but assigning the planning of new construction to the Plant Section of the Planning and Public Relations Division. This would give the Vice-president in Charge of the Business Division five Directors supervising activities as follows:

Plant Maintenance and Operation

General Services

Custodial

Student Supply Store

Veterans' Housing and Miscellaneous.

As currently organized, each of the above five Directors have under their supervision an average of five executives, foremen or crew chiefs.

It is noted that the above over-all reorganizational structure for the University does not include the functions of the Comptroller, the Purchasing and Accounts Payable Division and a number of others, such as the Department of Alumni Affairs. The Fiscal Section of the Planning and Public Relations Division might well take over the Planning and Auditing Functions of the Comptroller,

leaving the Fiscal Operations functions to the Administrative Deans on the different levels.

An alternate plan would be to call the Business Division described above the Comptroller's Division with the following six Directors under his supervision:

Fiscal Operation

The Cashier's Office

Purchasing and Accounts Payable

Plant Maintenance and Operation (including General  
Service and Custodial)

Student Supply Store

Approved New Construction.

A number of current departments and divisions are not specifically named in the above brief outline of the university reorganization plan. These departments and divisions would be assigned within the above framework in accordance with their missions and major activity. For example, the Department of Alumni Affairs functionally belongs with the Division of Planning and Public Relations. The Director of the University Libraries functionally is most closely allied with the Upper Division College and might well be raised to the fourth level with the Deans of the Schools and Colleges. The various inspection services, experimental station activities, and special programs would continue to function under the supervision of the several colleges and of the department heads most interested in the specific activities.

Figure 4 shows diagrammatically the principal features of the present University of Maryland organizational patterns. This chart is not to be interpreted too literally because many of the personal relationships transcend the capabilities of any graphical organization chart. In a large university capabilities and talents of a high order are frequently found in the lower academic and administrative echelons. However in general the chart does indicate the areas of responsibility and the channels of authority.



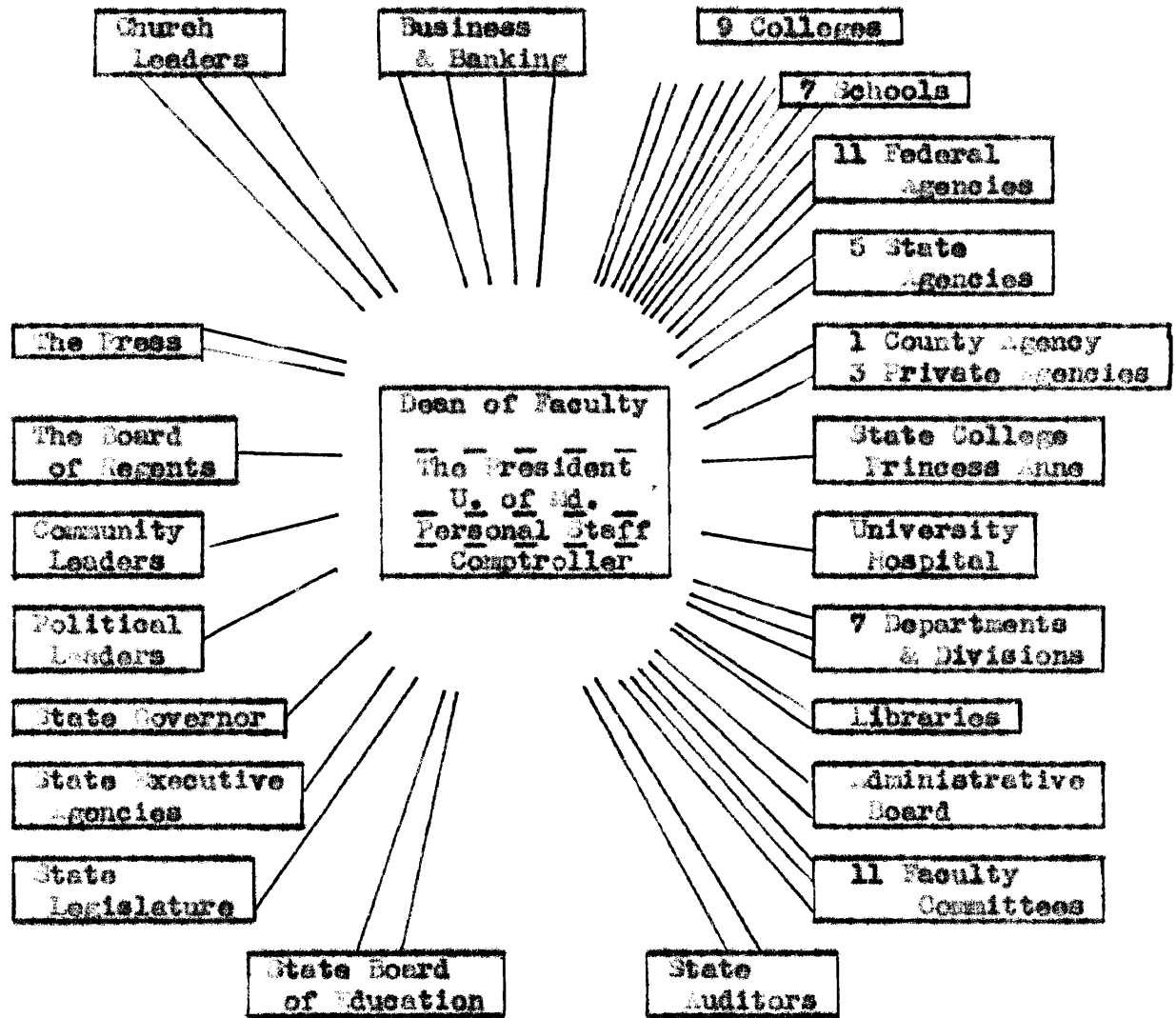


Fig. 4. Schematic Diagram of Present Organization.

Figure 5 shows diagrammatically the reorganization plan as described in the preceding pages. It, too, is not to be interpreted too literally. It attempts to suggest the grouping of related functions and activities into groups small enough, preferably five, so that they may be effectively supervised by one head or leader. The historical background of the university as well as long standing academic and administrative procedures will suggest no doubt a number of more desirable groupings. However, the principle of the reorganizational pattern or plan is believed to be readily adaptable to such changes and modifications.

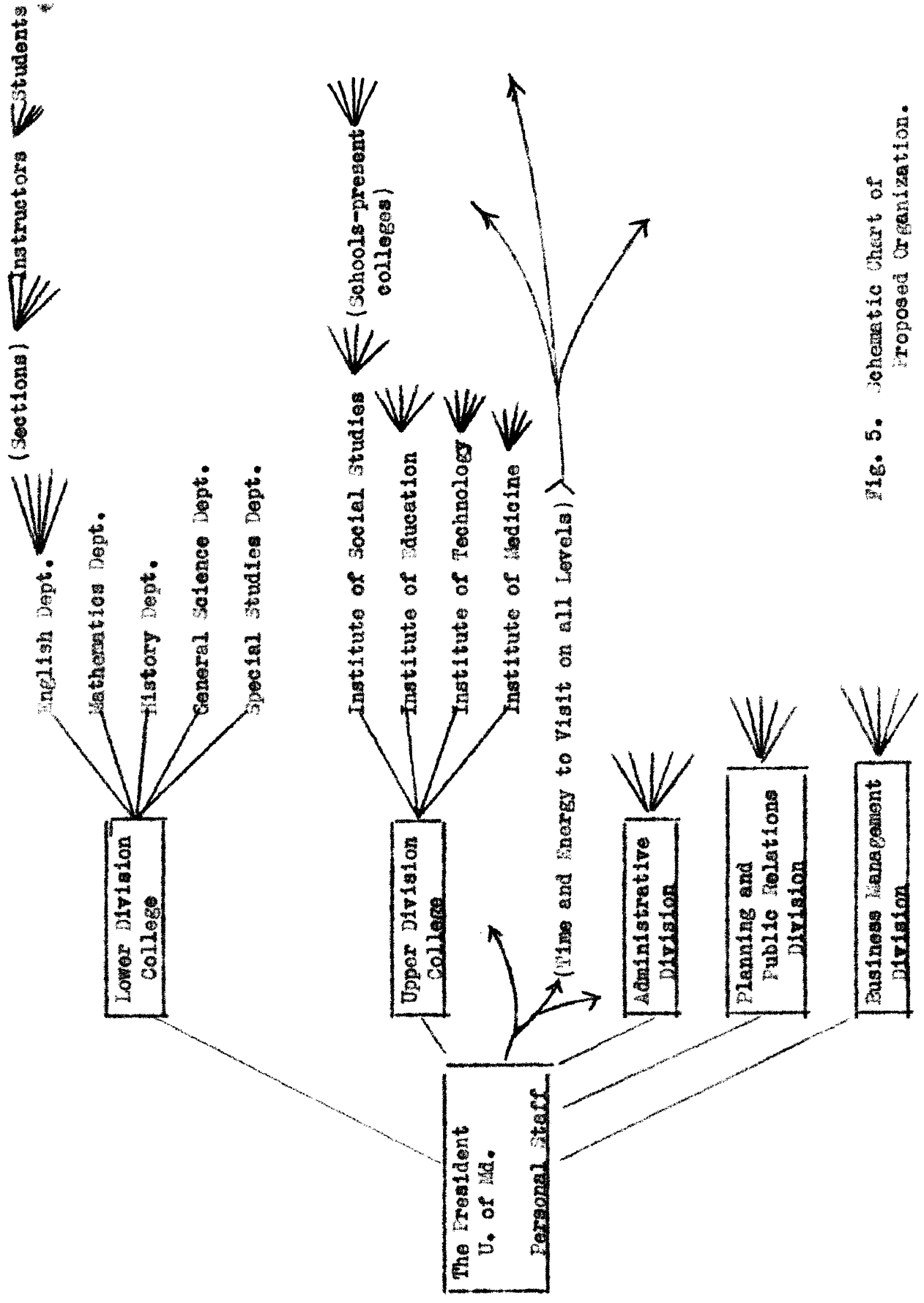


Fig. 5. Schematic Chart of Proposed Organization.

## CHAPTER IV

### SUMMARY AND CONCLUSIONS

This chapter presents a summary of the study and of the results achieved, in section 1. In section 2 are presented some recommendations or conclusions as a result of the study. Finally, in section 3 are listed some suggestions for further study on the implementation of uniform and small spans of control.

#### 1. SUMMARY

This study on current practices and trends in the organization of institutions of higher education, indicates that universities and colleges could well afford to reorganize so as to conform to generally accepted principles of organization and control. The study reveals that such reorganization should be designed to serve the purposes and missions of the institutions. Institutions should be staffed by competent leaders and controlled by democratic policies of coordination and cooperation. This study shows that these principles of organization could be just as effectively employed by universities and colleges as utilized by the other major agencies and activities of the nation.

It becomes apparent from this study that institutions tend to differ widely in their organization, to emphasize varying leadership attributes, to control their component elements in various ways, and to group staff and faculty members under leaders with small

regard to the size of the group a leader may effectively direct and control. There appear to be no accepted principles governing the patterns for organization and control. While no fixed patterns of organization are generally advocated, such control practices which clearly violate generally accepted principles of organization might well be re-evaluated and modified.

In most universities and colleges, any mention of reorganization plans frequently arouses a storm of opposition to any change, and a defensive attitude in favor of past practices and existing academic relations. The study indicates that the problem, then, becomes one of convincing those affected by the proposed reorganizational changes, of the worth, advantages, and justice of the changes. Current writers and educators are somewhat vague or silent on how best to implement reorganizational plans with a minimum of disturbance to students, to faculty, and to administrative personnel. This study indicates that a few, simple, and well publicized principles of organization and reorganization would do much to remove most of the reaction against desirable changes.

In the final analysis, any complex organization such as a university, is composed of individuals. For direction of effort and for control, these individuals are assembled into groups. On the bottom levels, these groups are directed and inspired by individual leaders. The number of individuals which any one

leader can effectively control and direct is his span of control, and, in a sense, is a measure of his leadership ability. This study reveals that spans of control are excessively large in many institutions. Many leaders are attempting to personally control too many individuals. Their spans of control exceed reasonable and human capabilities, and are eventually inefficient in results.

Spans of control vary with individuals and with activities, but are still susceptible to evaluation by experience and by accepted principles of organization. Many experienced leaders favor spans of control of about five. Some advocate less, others admit a few more. Whatever may be the optimum number, spans of control, uniformly applied in a complex organization, are susceptible also to mathematical development and analysis, and this treatment yields interesting implications. This mathematical study, evaluated against current organizational patterns of representative institutions, indicates that the average university could offer more effective instruction and guidance to students, and could make more effective use of the individual members of its staff and faculty, if it adopted a policy of spans of control of around five. Moreover, it would appear that this organizational principle could be implemented with little or no additional outlay of funds, but with a resultant gain in efficiency in the instruction of students, and with a minimum of disturbance to existing organizations and to individual faculty members and students.

The study does reveal, however, that the implementation of this principle of spans of control of about five would require the continuous evaluation of organizational structures and patterns, would necessitate an alert staff for long range planning, and would

presuppose a very human appreciation of the power of tradition and of the disturbing influences of actual or proposed changes amongst the more conservative individuals. However, a number of the younger and more progressive institutions closely approximate the organizational structures and spans of control which the results of this study would seem to favor. This study indicates also that the same principles and spans of control could readily and profitably be applied to larger, more complete, and more conservative universities, provided the problem of human resistance to change could be solved.

The results of this study favor organizational changes of a very practical nature. These proposed changes have been evaluated and compared to statistical data on higher education, utilizing national averages as well as data from individual and representative institutions. They appear to be in use in a few institutions, perhaps more by chance than by conscious plan or design.

The study ends with an outlined adaptation of the principle of uniform spans of control of five, applied to one of the representative universities previously studied. This university is considered typical among the land-grant group, grown fairly recently from an agricultural college to a state university. It has experienced many changes in its century and a half of life and development, close to the nation's capital, near the Mason-Dixon Line, and in the midst of the agricultural and trade areas of the Chesapeake basin.

## 2. RECOMMENDATIONS

That the faculty and staff of our larger colleges and universities evaluate their organizational structure and control patterns constantly with a view to simplifying the organizational structure of its elementary component group.

That the merits of small spans of control of about five be tested in actual operation by implementing such simplified organization and control methods in specific larger components of the university.

That the leadership ability of individuals on the various lower levels of the university be continuously appraised and noted with a view toward more selective and rapid advancement of those showing potential leadership characteristics.

That the functions and missions of the components of each university be carefully reviewed with a view toward collecting them into groups of about five with similar or related missions. Where this number in a given group exceeds seven, to establish two groups with supervision and authority over them on the next higher level.

To evaluate constantly the changing programs and curricula in the various colleges and departments with a view to eliminating overlapping authorities and duplicated curricula.



### 3. SUGGESTIONS FOR FURTHER STUDY

Current literature on the application of modern organizational principles to institutions of higher education appear to fall short of specific methods for applying theoretical organizational principles to practical problems and traditional situations encountered on the campuses of our older universities.

There appears to be a need for principles for applying principles, that is, a method of implementing modern organizational principles, structural patterns and operating procedures with a minimum disturbance to the continued orderly and routine working of the university.

It would be interesting to have a survey of two actual representative universities comparing the two different organizational patterns discussed in this study as to their academic effectiveness as measured by the effectiveness of the instruction and the developed ability of the students graduated and also as measured by the most effective use of individual faculty members.

An equally interesting corollary would be a survey as to whether the small additional cost of implementing a uniform system of spans of control of five on each of the various levels would be more than compensated for by the increased effectiveness of the individual staff and faculty members as measured by the higher caliber of students graduated.

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