1951

Planning office task assignments

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http://hdl.handle.net/2144/6687
Boston University
BOSTON UNIVERSITY

College of Business Administration

THESIS

Planning Office Task Assignments

by

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(A.B. Harvard College 1946 Oec.)

Submitted in partial fulfillment of
the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

1951
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CHAPTER I

INTRODUCTION

I. Purpose of Thesis

Office task assignment is a topic which deserves thorough treatment for the student of modern management because office work is the means by which most commercial enterprise is carried out. Failure to see the scope and importance of this basic function of business may mean that facilities are wasted and work left untouched or incompletely. It is my purpose to demonstrate techniques for the accomplishment of office work by transferring the applicable principles of production control to the problems of office work. Poor management is cited as one of the leading causes of business failure. I suggest that this poor management is the failure to realize the need for doing routine and non-routine office work so that the requirements of the enterprise are met. The rapidity of communication and the violence of economic reaction to events deprive the present day executive of the liberty to indulge in lengthy deliberation. His decision must be made rapidly on the basis of what may be incomplete and inadequate information. The end result of a business decision invariably takes written form and is transmitted to others for action and/or advice.

II. Administrative Elements

A. Personnel

Task assignment involves the three factors of administration, personnel forms and equipment. Many people in authority feel that their underlings know better than they themselves how work should be done. Thus key personnel in an organization become overloaded with work apart from
their specific responsibilities with inevitable delay and inefficiency resulting. Executives become too dependent upon particular employees so that control is lost through excessive delegation while the employee becomes more indispensable to the work of the firm not for the skill with which performance may be done but rather by virtue of an increasing monopoly on the particular task or information. The result of this situation may tend to make the employee more zealous about these special assignments and less effective in the tasks and operation which he must perform regularly.

B. Forms

Forms and their well designed application can be used for semi-automatic administration of routine tasks which confuse the bulk of office work. The non-routine tasks should be handled in a manner which will insure their execution and solution of whatever duty a problem has presented.

C. Equipment

Technological advances in modern office machine design have afforded these devices a flexibility and adaptability for the performance of both routine and non-routine assignments. However, their high cost and variety of application point up the necessity for a clear understanding of the nature and extent of the work which must be done before a solution is attempted by the assignment of tasks to office machines.

The executive should never allow himself to become so self-sufficient that he is doing all his own work, and therefore not free to analyze new work for the best possible solutions and check the work of his subordinates. It is common to many self-made men particularly that they can perform as well or better the tasks for which their subordinates are
paid. However, in performing details by themselves rather than assigning the problems to other means, they are avoiding their own supervisory responsibilities, disrupting the regular working channels, and failing to utilize the services of the subordinate. Self performance of tasks should be preserved for emergencies and will not be discussed here.

The modern office has utilized machines and equipment to complement the personnel and paperwork in the carrying on of daily routine. Their comparably high unit cost and tendency toward specialization require that careful consideration to quality, cost, and operating features be given prior to purchase. Assuming that the executive knows how to run his business, he should acquire the equipment most suited to the adroit dispatch of his routine rather than to be sold specialized equipment which to be economically utilized entails a reshuffling of his office routine.

III. The Need for Methods and Scheduling

The executive should direct his effort toward the end of insuring regular performance of the office duties, of training personnel so that they may work more effectively and to be aware of the changing requirements of the business in which he is engaged so that he may evolve solutions to current problems which are effective.

Manufacturing controls systems have been devised and operated successfully in the production of goods where coordinated activity is necessary to meet delivery schedules and other requisites. Such systems were instituted because lack of materials, labor, and facilities prevented successful operations. Applications of the Gantt Chart in the form of Wassell Associates' Productrol Board and Remington Rand's Schedugraph have
enabled manufacturing concerns to exercise informative inventory control in a manner previously unknown. Graphic representations have given executives greater opportunity to concentrate upon the extreme conditions and to leave the standard routine transactions to underlings. To operate on the "Exception Principle" information must be available, accurate, and current so that the unusual circumstances may be properly singled out for action. The crux of successful administration is to decide what details or events are significant and what are routine and to treat matters accordingly.

The argument here is that success or failure of a business enterprise depends in large measure upon knowing that action on specific items must or must not be taken. Armed with proper information pertinent to the question at hand, and realizing the need for action, the groundwork for administrative action is completed. Uncontrollable factors over which the executive may have little or no control often enter into a matter of performance. It would, therefore, behoove him to marshal those controllable elements to his aid.

In the accomplishment of this end methods analysis and work scheduling can be of great help. Thoroughgoing methods analysis requires that the task to be performed be thoroughly understood. When the desired end is in sharp focus, unnecessary side maneuvers can be avoided and the job reduced to its bare essentials. The formulation of process charts will help to formalize one's thinking and to clarify subsequent operating procedures. After this, control devices are more easily developed. System then takes form and office work, the core of business operation, becomes effective and to a large extent self-regulating.
CHAPTER II

ELEMENTS OF CONTROL

Control is a result of planned work and organized facilities. It exists when routine work is done efficiently and non-routine assignments are performed without delay and error. The elements of control may be considered mechanical and personal.

I. Mechanical Factors

The physical elements of control exist or operate when the office manager or planner understands and can provide reasoned answers to the why, what, when, where, and how of the work being performed under his supervision.

A. Why

Why is a job necessary? It is done because of tradition, habit or need. Critical consideration of this question may lead to the conclusion that unnecessary work is being done. Combination and simplification of various tasks which are done in a sequence of operations can reduce waste from the management's standpoint and insure the content of the worker's job.

B. What

In answering the question what is being performed the end result should be contrasted with the intended purpose of the work.

C. When

When work is done on time, business operations flow smoothly. The coordination of timing sequences is the job of the supervisor. To make timing coordination effective individuals must be taught to put return or action due dates on all internal communication and on external
ones where it is possible. Purchase requisitions, for example, without any indication of the delivery date desired by the requisitioner can result in procurement of materials or services too late to be of benefit to the user. In cases where hard to get items are needed, six to eight weeks may be a swift delivery from a mill source. The requisitioner not realizing the length of time involved may feel that merely by getting his requisition placed a few weeks prior to the desired time of use, prompt delivery can be made. The buyer, however, may be able to obtain delivery on short notice by purchasing at a premium price from jobber's stocks. The case varies with the item and the delivery or lead time allowable. Without the due date information the buyer would most likely seek the lower priced mill source with its attending longer delivery unless properly notified of the needed speedy delivery.

Departmentalized specialization has lead to the performance of work in sequence. These chain reactions must be completed by each unit concerned in order that the customer requirement may be met. Overall coordination may be furthered by attaching a routing slip to the work papers containing department affected and completion dates required. Color coded copies may be sent to the department concerned to be filed by work starting date within the department. For follow-up purposes the department should return the in slip to the manager where the progress of the work may be noted. Thus overdue work may be expedited because the fact of its tardiness is known.

**D. Where and How**

Where work should be performed is closely allied to the question of method—namely how. These questions should be considered last in order
that effort will not be expended on the improvement of unnecessary work. Work which has habitually been done inside one's establishment may be done by outsiders more efficiently and at a lower cost. Payroll accounting for medium sized concerns with a fluctuating number of employees may be performed more accurately and inexpensively by outside banks than by the office staff. Credit rating of customers may be obtained by subscription to such a service with greater accuracy and less cost in many areas that is possible when done by the few. Office work generally follows the process rather than the product type of plant layout. Thus like machines are grouped together in an office rather than on a flow path for the item produces. There are instances of high volume repetitive work which lend themselves to the product layout plans such as in insurance companies. But the majority of office work is valuable in character. Thus the improvement of work methods affords the most worthwhile opportunities for retarding costs and increasing efficiency.

1. Tailored to Need

To be worthwhile the planner must know the needs of the business, understand the possible solutions and keep his recommended changes in line with the economic power of the company. Many improved methods are based upon the use of special equipment. If the use of new equipment can produce saving at the present level of work which would pay for the machine within two years, it may be considered a valuable investment. When definite expansion of existing facilities is carefully planned wise purchases of office equipment provide a ready solution.

II. Personnel

Control of office operation is more than a mastery of machines
and techniques. It requires a continuous study of people. A fairly administered personnel policy as pertaining to conditions or work wages etc. coupled with fairness and impartiality provides a sound basis for the control of human elements of office operations.

A. Employment Policies

A policy of hiring people at a salary which would attract those with a greater capacity for work and training seems to me to afford numerous advantages. Fewer help would be required, greater longevity of service would mean greater efficiency, future executives could learn the details for the business which provides a useful reference for future decision. The recruiting of more intelligent personnel plus a longer term of service and experience once hired would make the office force more competent and mature. As far as personnel policies are concerned I feel that this is a wise decision. Job content could be appreciably increased without loss of quality performance (greater reliance could be made on individual incentive); unnecessary detail would tend to be eliminated by impatience with it, and the company would benefit in the long run from seasoned capable help well versed in the ways of the business.

1. Male V. Female Employees

Female office workers represent many elements of cost which offset the somewhat lower wage rate paid to them than for males. Higher turnover, replacement training costs, comparative fatigue, and acceptance of responsibility are instances of the inferiority of females compared to males as office workers.

2. Standards

From the standpoint of administrative control the executive will
make his task easier by employing people of high moral and intellectual standards. Entrance examinations for prospective employees are a money saving means of avoiding the pitfalls of hiring incompetent or socially maladjusted persons.

III. Strengthening Executive Control

A. Delegation of Power

The delegation of authority and responsibility to people competent to assume the challenge is a means of strengthening executive control. The executive may devote his efforts to long range planning and policy formulation. The juniors may be stimulated mentally by the challenge as well as made to utilize their professional skills. An engineering firm had made a practice of completely specializing the work done by their engineers. This meant that several men worked on the same job in succession as the preceding part of the work was completed. The idea was that each man would become an expert in his particular field of work. However, to insure accuracy each made a practice of checking the work done by his predecessor. The work was exacting in nature and jobs were invariably finished late. To correct this one person was made responsible for carrying through an assignment. To compensate for individual deficiencies in professional skill, senior members of the organization served as consulting supervisors. This relationship proved to be a highly satisfactory working arrangement. The younger men accepted added responsibilities, used their skills and techniques, the senior engineers had more time to devote to advanced research, and the customers were satisfied because the individuals responsible for each job took an interest in getting the work done on time.
B. Centralization

Executive control may also be strengthened by centralizing when applicable to the needs of the business, the information and record keeping activities. The purpose of keeping records is to have information available which can contribute effectively to the process of decision making. If record keeping is decentralized among various departments of a concern so that several or all must be consulted to obtain a full information on a job or transaction, one may decide that the statistical control needs to be strengthened through centralization. This need not be a costly undertaking. Carbon copies of daily reports may be used with the item reported in the same position for all departments. These papers when placed on a board may be shingled together to provide a summary of information. The shingled strips may be glued together to form a permanent daily record or destroyed if the summary has but current value. This type of summary is particularly well suited to multi-plant enterprises where it is desirable to have the periodic comparisons on a unit and dollar basis.

IV. Tests for Control Effectiveness

A. Turnover

A check upon the effectiveness of company policies as far as human factors are concerned may be had by checking the labor turnover. This is an incomplete answer, however, because most office workers today are females with intentions other than that of an office career. Cooperation among the workers is a reliable positive indication of management's effectiveness in dealing with human relations.

1. Employees and Goodwill

Management should realize that their employees represent the
company in a personal way to the community. If by careful hiring, fair treatment, and continuous employment, management is able to maintain a group of capable personnel by their daily existence in the community they become good will ambassadors for the firm.

Where office personnel are concerned management should be especially careful. Since office help are in more immediate contact with the principals of the concern and their positions in the firm often give them access to information on company affairs which if circulated with a derogatory slant can inflict injury upon the company's reputation, great care should be taken in hiring this office personnel. Selective recruiting, adequate training, and fair treatment of employees benefit the company externally because the employee represents the company in the eyes of his associates.

Control in the business sense means a blend of technical and human factors. Either alone is insufficient. Technique and diplomacy must be brought together under capable management to attain successful business operations.
CHAPTER III

THE OFFICE CYCLE

I. Office Work

Office work may be divided into three parts; definition of the task, its assignment, and its follow-up.

A. Task Definition

Defining work in its complete detail may be essential or superfluous depending upon the nature of the business, but a general chart of the work load that is current and due in the near future should be prepared. This master schedule should be available to supervisors and others responsible for getting work done. The schedule for a manufacturer should indicate the shipping dates, the customer’s name, the equipment ordered, its status in the factory and other pertinent information. The professional man has his appointment book as a scheduling device. For a straight selling organization the immediate attention should be turned on the unfilled orders. But in addition market trends and inventory position must also be considered. Essentially scheduling devices indicate a requirement and the means of attaining it is assumed by the man in charge. To avoid omission compilation of the master scheduling device should be centralized in a single book, file, blackboard, or summary compiled by and the responsibility of one person. Such information must be in writing, and show what, when, whom, etc. as required by the circumstances. Having a good memory is no reason to abandon the practice of putting such information in writing. No matter how obvious or close to second nature the work may be, the written record serves as a present reminder and a guide to future work.
1. Circulate the Schedule

Some men feel that to publish their business developments and circulate them throughout the plant would weaken their position by allowing such information to become common knowledge. However, employees can invariably find out what is going on from less accurate and often ill-informed sources if they are interested in so doing. I feel that it is better for the concern to state its own case rather than to allow rumor mongers to circulate erroneous ideas. There are also positive advantages to be gained. Frankness with employees engenders their confidence in management. If business is poor and a layoff is imminent, the work force and the union, if any, will usually know better than most of management who is likely to be laid off or kept. All workers can be made to feel that the management is aware of his importance and is interested in keeping him informed on company business. Such an overt policy inspires mutual trust and confidence. Since the most closely guarded secrets often leak out and are distorted by repetition, the advantages of a forthright statement should be apparent.

a. Re: Department Head

For the department head or supervisor such a summary will allow him to arrange his own work with reasonable surety, if such is the way of the concern. If work is delayed or tied up in his department because of a failure of his department to function properly, the publicity of the daily schedule may well cause him to overcome such deficiencies. Thus employees on a supervisory level are kept posted as to company commitments in general so that they may know what is required of them in their capacities, and are kept on their toes to avoid delaying work.
Accounting for delays and interruptions requires both fairness and diplomacy. The manner in which this is handled gives management another opportunity to show its fairness and equanimity in dealing with people as well as with its own affairs.

b. Re: Executives

At the executive level a summary of what is in the house is a most useful piece of information. It can preclude ignorance and forgetfulness as reasons for not meeting scheduled requirements. Up-to-date factual information, such as this, is of inestimable value, for it makes at least one accurate benchmark when dealing with future work or policies of which much is uncertain and problematical.

B. Task Assignment

Spelling out the task requirement is but a part of the entire performance. The work must be assigned and followed through. In making work assignments the factors of time and cost must be considered. Estimates, records of past performance, or time and motion study provide three ways of determining how a job shall be done and how much it will cost to do it. Estimating is part of all three methods. Accurate estimators are valuable people whose long experience and familiarity with the work in question enables them to determine the best way to do a piece of work and to figure its cost. Depending solely upon records of past performance has the disadvantages of assuming that the previous technique still represents the best way to do a job. Even in the case of repetitive uniform work the nature of which changes slightly over the years, technological improvements in material and machines make it advisable to reevaluate the purpose of a job and the means of performing it. It is
regrettable that many executives of advanced years and high position fail to realize the continuous processes of change and the need for adaptability rather than inflexibility.

Records of the type which show dates, reference, quantities, balances and cost figures on past performances tell but a part of the story, namely: what, when, and how much. The most vital factor, how, is often completely ignored. More emphasis should be put upon finding the most effective way to do work in order to reduce the time and cost of performance than upon the quantity and cost data. However, the immediate concern of business' customers is price and delivery of the goods and services which are available for sale.

1. The Use of Forms

Routine office assignments of work which is repetitive can be most easily made through the use of standard forms. Payroll accounting is a topic common to most business concerns with minimum affecting the individual employee and employer for the immediate and long run payment periodic earnings. Forms with the paper blanks to be filled in provide an accurate and complete means of defining the task. Giving these forms to clerks to fill out and tally is a simple example of assigning work. Payroll accounting has other ramifications especially when considered from a cost standpoint. These will be examined subsequently in greater detail.

Forms as means of assigning work serve to unite and coordinate the activities of various departments toward the accomplishment of a job. Color coded copies of the order showing the routing of work and the time relationship can be dispatched to the departments concerned. As each
department completes its phase of the work the colored copies, when re-
turned to the scheduling office can by their proper circulation after
being signed provide information as to the status of the work. Color
Coding of papers by department or function aids messengers and menagers
in identifying and routing work papers in a concern. Furthermore, all
departments may not be required to act upon every job assigned by means
of a multicolored form system. Thus the selective assignments may be
made through the use of more or less colored copies of assignments.

2. Rotation

"In almost every office there is a core of dull essential repe-
tition which is vital to the smooth operation of the works. In this
connection it is suggested that a schedule be prepared showing dates and
requirements for the various jobs. Furthermore, work of this nature
should be done in advance of the deadlines where possible and not allowed
to lag."* By varying the people who do this sort of job, several advan-
tages are obtained. The worker is less likely to be bored by a variety
of boring assignments than if he is confined to one. Also a monopoly
of specialized information on the part of any employee is avoided. Sick-
ness or loss of employees need not hamstring the operations, and a diver-
sity of assignments may bring to light qualities of special skill or
ineptitude on the part of the worker.

No responsible supervisor should allow himself to become un-
familiar with the routine of work nor permit underlings to make changes

* 1-115
and alterations therein without the knowledge and consent of proper authorities. Continuous operation gives many workers ideas for short cuts. These suggestions should be encouraged and carefully reviewed. But laziness and indifference to detail on the part of supervisors should not provide those with minor responsibilities the chance to make themselves indispensable, to monopolize particular information, or to keep it from reaching the proper persons.

In preparing a work schedule the needs of the business and the slack periods should be made to dovetail in order that, where possible, free and uninterrupted attention be available for the heavy load demands of the work. And thus, the more humdrum portion of the work could be accomplished in the quiet periods without interruptions.

3. Specialization

Work assignments should be made commensurate with an understanding of the individuals' or departments' capacity to perform. It is seldom necessary to maintain load records for office work, but an evenness and fairness can be attained by centralizing the duties of assigning work. One person may therefore know fairly well how much uncompleted work each group section or person has to do. Complete specialization of clerical workers should be discouraged in the interest of flexibility and versatility. Typing, filing, and record keeping are common to most office jobs. A labor pool is more likely to be fully utilized than is slack time with independent service facilities. If a choice must be made, I feel that it is better to have a fewer number of employees above average in both ability and salary, than to have numerous lower salaried specialized employees. Specialization when applied to production work or
executive and professional duties definitely offers advantages. However, office work differs in the depth and scope of job content. Furthermore, if the majority of office workers are of a higher intellectual capacity, then variety of task could compensate for the job content. The firm would benefit from the advantages of having more capable people in the various positions who from personal experience understand the workings of the concern, and these employees would have the advantage of diversified experience at a wage rate higher than their average work assignments would ordinarily merit. As the conditions of the business change the higher capacity employees would become cognizant of better methods for handling affairs. Well received suggestions are more apt to come from people familiar with a variety of aspects than from a person of lower capacity who is a single job specialist.

4. Orders in Writing

Work assignments should always be in writing. This may be a rubber stamp on invoices for checking and processing, or a piece of teletypewriter copy, a routing slip on incoming correspondence, or a series of detailed instructions which would require a lengthy written report. But in any event, the nature of what is to be done should be sufficiently clear from the written information that the normal circulation of the work papers through regular channels is sufficient for the requirement. Telephone queries, added conversations, a circulating parade of office workers, or incorrectly performed work are indications of ineffectual and inexplicit task assignments.

C. Follow Up

Timing relationships are essential for efficiency in office
work. Delivery dates for incoming material, shipping commitments to customers, discount periods on invoices and numerous other items require specific performance at appointed times. Failure to deal with these necessities costs considerable money. So with the failure to properly schedule internal operations.* Tickler files come after the establishment of timing relationships as reminders to take requested action.

* Dual reference tickler files provide two means of checking current work paper. An appropriate alphabetic and numeric cross reference may be had from one file by notching one edge as in the McBee Keyport System or attaching numerical signals on the border. The basic location of the material in the file could be alphabetic by subject, or the opposite could be used wherein the basic location of the paper in the file was numeric and a visible edge was allotted or marked in a position designated to denote an alphabetic reference. Example: Open purchase orders in a tub file can be arranged as follows to show what vendors have unfilled orders and, as of any date, what orders are scheduled for delivery. If the purchase orders are filed alphabetically by vendor and the visible edge is notched or "flagged" with a numerical signal whose position is scaled 1-31 along the visible edge thus looking from front to back into the file one may readily determine what is due as of a given date.

Accordingly, the scheduler should date his outgoing work and specify due dates for the return action which are reasonable—being no more nor less than what is required. Excessive use of "rush" or "special attention" on paper work indicates a lack of planning of the work. An experienced manager should allow for seasonal peaks and avoid overloading or too close scheduling of work to any group or person. Thus, as the work increases, the manager must be able to shift his work force or obtain additional facility to handle the work.

1. **Centralized Scheduling**

Centralization of the scheduling of work has many advantages. As a result of such a setup the facilities of the concern may be concentrated on the most pressing work of the moment, idle and unproductive
personnel and equipment may be reduced, and the management has a control point from which pertinent information which higher executives may require an abstract is available. This last is undoubtedly the most significant. In dealing with half truths, intangibles, and incomplete data the senior executive may take pride and profit in the full and accurate knowledge of what is going on in his own establishment. If the executive operates on the exception principle under which he takes action only when the unusual occurs leaving the routine matters to his subordinates, it is to the executives' distinct advantage not to clutter his mind with the detail of his business routine, yet at the same time, if detailed information is required, he may go to a single place and get his information quickly and accurately.

Cost advantages which accrue from the employment of a centralized scheduling function arise chiefly from the more complete and effective use of personnel and equipment on the tasks which are not pressing at the moment. If scheduling is left to individual initiative, the likelihood that a series of operations would be performed in priority to others such that deadlines would be met is remote. To put incoming paper work at the bottom of a file basket may well mean to bury it and give precedence to other jobs whose immediate performance is relatively inconsequential.

II. Special Assignments

In addition to routine tasks, every organization has special duties which must be done occasionally. Reports, surveys, estimates, and summaries of a non-repetitive nature crop up and require attention. When a senior officer in a concern wants a special summary or series
of data compiled, he should consult the central work scheduler before assigning the task to others himself. Such a precautionary measure may eliminate the need for compiling a report if the scheduler can give such information himself, and regular work may continue uninterrupted by assigning the job to the proper person at the right time. It has been my observation that in response to a customer’s request for delivery and other information an executive may round up all the paper work on an order and thus disrupt the normal flow of operations. He may even forget to return the papers and/or pieces to the proper places. Thus time, money, and customer displeasure are to be saved by seeking information from the person or department whose job it is to know what is current.

A. Frequency

If particular information requires repetitive checking, it is a good indication that the present system is not providing the proper information automatically which may be caused by a change in the nature of the work or a faulty system. Such difficulties may be overcome by consolidating two or more forms and distributing side-by-side copies of the redesigned form. Readjustments should not be made rashly nor without careful planning and forethought. Special reports are usually rush jobs and do not lend themselves readily to efficient timing systems. Their frequency and nature may be noted as well as the reason for the accumulation of such data. Conceivably, questions could be answered by other means.

In every office there is a system, well or poorly designed, to carry out the routine of its operations. The timing sequences involved should be scheduled such that the work required will be done when required.
CHAPTER IV

METHODS PLANNING

I. Origin of Planning

Timing is but one of three work elements. Two others are within the province of methods planning and are how and where. The lineage of methods planning or industrial engineering as it is sometimes called may be traced from Taylor to Gilbreth as far as methods go. But as with Gantt's work in timing sequences, these aspects of scientific management were first developed for factory application.

It was not until the middle twenties that the principles of work simplification began to be applied to office work. A. H. Striker of the Lamp Department of the General Electric Company of Nela Park Cleveland, Ohio began to experiment with procedures as applied to forms and equipment. The twenty-eight inch desk, the accounting machine recess, decentralized stationery stores with daily refills of office supplies were results of experiments he conducted with the intent of reducing office costs. His idea was that production operations had increased greatly during World War I as a result of the application of Taylor's principles. Therefore, why should office operations, which initiate, guide, and facilitate factory work, be allowed to develop in a random fashion without attempting to use the same scientific planning of timing and methods that is required of factory operation.

The laws of motion as compiled by Gilbreth are based on full realization of the capabilities and limitations of human activity. The length of a person's arm limits his radius of working operations. Stretching beyond the radius is tiring and time consuming. Thus, the
work layout should be such that necessary supplies and equipment are on a horseshoe shaped curve within easy reach of the worker. Hand motions are easiest and least tiring when they can be performed rhythmically with both hands and arms moving symmetrically in smooth curved motions rather than jerky asymmetrical and irregular movements. Thus in revising or planning work techniques and facilities these basic precepts should be born in mind. Lighting, posture (as emphasized by Leffingwell’s chair design), temperature, noise content, and layout all stem from observations of the strong and weak points of human abilities and activity. Thus, in any revision of creation of an office procedure technique or system the planner should have uppermost in his mind a consideration of the human mechanical ability to perform with and in the revised circumstances.

Work simplification together with the term scientific management has gained much unfavorable publicity caused by the acts of unscrupulous menagers and self styled industrial engineers who have concentrated upon the money saving features of work simplification with no consideration for the human abilities and limitations involved. No intelligent person should allow his planning to become dominated by such mercenary short run gains, but rather should follow the dictates of enlightened self interest by making changes which are both physically convenient and humanly equitable.

II. Aims of Simplification

The aims of work simplification are fourfold. "To insure efficiency through coordinating departmental activities, to improve present systems and procedures, to establish more effective methods for depart-
mental functions, and to eliminate unnecessary statements and reports.*

A. Coordination

Coordination of departmental activities may be enhanced by personal leadership of a powerful personality and by the specialization of work so that the various departments must depend on others for their own work rather than to be duplicating unnecessarily the work of others. Conferences when effectively run and when called to solve definite problems provide a means whereby personalities can be tempered and coaxed into accepting or suggesting cooperative improvements on a mutual basis. Individual personalities can do much to help or hinder the institution of new systems. Since unlike conquering Alexander who changed governors but never local laws or tax rules, the improviser must at times make a clean break with past tradition, his attempt should be made to convince the person or persons involved that the change was their idea. If this is not a possible solution, a transfer and/or promotion should be diplomatically and humanely negotiated, but only as a last resort.

Departmental activities may be coordinated by pooling help and equipment, and using central rather than private files where possible. The real crux of cooperation may be best attained by instituting a system in which each department does its own work which others do not duplicate, and upon which their work is dependent.

B. Systems Improvement

Systems improvement may be approached deductively or inductively. The deductive technique is based upon the reworking and improvement of

* 8 pp. 9
current methods. This is accomplished by surveying the current method analytically in terms of personnel, forms, and equipment, and reshuffling, adding, and eliminating elements of each. This approach has the advantage of less radical changes. But it starts with the assumption that the current modus operandi is, in view of business success, doing a good job at carrying on the office work of the concern. Changes in and of themselves do not necessarily mean progress, but the critical attitude and constant effort to seek improvement is what will bring progress.

The more essential efforts of a critical attitude of mind are apt to spell improvement in a system where an inductive approach is used. A system is in existence because a need has been ascertained, and a means of accomplishing it has been evolved. It would seem more to the point to tabulate what information is requisite for the conduct of a business and then to let one's imagination run wild in seeking means for attaining it. The approach should be directed to the business system as an integral whole. Just as the artist makes an outline of his sketch prior to painting, so should the systems men lay out the general terms of his business scheme.

As Striker says, "The first changes give the greatest saving."* This would apply to either approach. However, savings in extent and degree are more likely to be accomplished if the problem is viewed in the entirety rather than merely as an isolated effort at improving some one detail or an existing system.

* 1 pp. 3
C. Increasing Departmental Effectiveness

As a third aim of work simplification the increasing of departmental effectiveness requires the full skill of the planner both as a technician and as a person. Department heads have generally arrived at that position in a firm through long years of experience. By dint of this they assume that they are best qualified to initiate internal improvements and to judge the merits of the suggestions of others. To overcome the natural antipathy that springs from outside interference the planner must be duly authorized to make revision, must be technically correct in his recommendations, and above all must try to maintain the good will of the department head and his co-workers in carrying out such a program. The most excellent plans can be sabotaged by the ill will and uncooperative attitude which the planner engenders in doing his job. A thorough understanding of the current system is requisite. Going into a study "cold" may force the planner into an awkward situation which can discredit him and his work in the eyes of supervisor and worker alike.

1. The Role of the Analyst

The departmental analysis should never be viewed as solely within the single department. The effects of changes internally must be considered in the light of their influence on related departments and the entire works. Therefore, the planner should be steeped in the lore of business systems rather than one with just specialized knowledge in some particular field such as forms or machines.

D. Elimination of Reports

The fourth aim of work simplification is the elimination of unnecessary reports and statements. This is desirable because to complete
a summary the regular work must be dropped to recapitulate what has already been accomplished. Reports usually are made in rough draft form and they are rewritten or typed before finally being sent to the one requesting the report. The need for reports may be best ascertained by the criteria of whether or not they are comparatively analyzed. If no one takes the trouble to compare past and current data with a view toward the development or change in a trend, then the reporting is largely wasted. Alleviates to reports may be had from the central scheduler if the system includes such a feature. Automatic registering devices such as veeder root counters or billing machine register totals provide the information which, if followed regularly, give the reviewer of such information a feel for the significance of such data, and thus eliminate the need for formal reports.

III. The Planning Function

The existence of industrial or methods engineering stems from the fact that while business does vary in terms of size, volume, value of product, type of selling, and organization, all concerns are faced with similar problems which vary only in extent, frequency, and degree. Payroll, correspondence, materials, handling, purchasing, filing, layout, personnel, and waste are but a few of the elements common to all business.

A. Regular Department

Methods planning may be a large department of one concern or weekend deliberations by an employee in the next, but laziness and curiosity which is part of the mental attitude of many humans will continue to make improvements in old ways and revolutionary changes. Methods planning, if scale does justify departmental status for it, should in my
opinion, be a staff or advisory service rather than a line or authoritarian group. This is advisable because the success of a business in large measure depends upon the decisions of its operating executives. They have the responsibility for exacting performance. Management must, therefore, grant them full authority within their sphere or remove them. To have their authority eaten away reduces their morale and thus reduces their efficiency. The scope of methods planning is so broad and pervasive that its activity should not be confined to the extent that is the case of the operating executive. Methods men should keep abreast of new techniques by reading pertinent literature and interviewing salesmen, and become steeped in the lore of their profession. They should be free to experiment and develop innovations. In a manufacturing concern the methods engineering group is usually charged with the responsibility for finding the best way to do a piece of work and to price it. Their horizons have broadened into the realm of office furniture, layout, forms, and procedural analysis.

B. Part Time Role Plus Notes

In the case of a non-manufacturing organization the office manager, accountant, or chief executive may have methods as part of his duties. Like the prudent physician who signs his patients records "condition relieved" rather than "cured" so must the systems man realize that study and training bring on improvements and gains over previous techniques; however, the new synthesis must be regarded as the best methods yet developed. To make this part time activity effective a notebook collection of data gleaned from magazine articles, lectures, advertisements, and visits to other establishments, and talks with various salesmen will
provide countermeasures for overcoming inefficiencies and discrepancies. These must also be recorded. Complaints from customers, overtime work requests, and cost data which is unusual should be noted and reviewed with an intent to correcting the source of trouble.

IV. Planning Technique

A. Process Charts

If more serious study can be undertaken effectively, the process chart is recommended. Process charting means that each operation, movement, storage and inspection is listed in the sequence performed. Care should be taken in compiling such data to insure that actual occurrences rather than supposed or ordained tactics are recorded. The distance in feet or amount of time required to do each item in the sequence must be included. Once this data has been tabulated the analyst may well be amazed at the unnecessary duplication and backtracking that exists. Systems that grow like weeds without planning or attention can invariably be counted on to be capable of improvement. Changes should be planned and charted and note made of their effectiveness.

B. Hand Charts

Added refinement may be incorporated by the use of other special charts. In order to get full ability from both hands, left and right hand charts may be compiled for the purpose of dividing the work load more evenly between hands. There are but eighteen motions that a human can make in performing a piece of work. Frank Gilbreth called these elements such as grasp, seek, find position, etc. and set about work simplification by the process of breaking each task into its elemental therbligs, discarding the wasteful and useless elements, and accomplish-
the task with fewer and more effective ones which least fatigued the operator.

C. Salesmanship

The methods planner must also be something of a salesman if his ideas are to be carried out promptly and accurately. He must convince not only the owners or their representatives that his remedial suggestions are beneficial, but he must also take the worker into his confidence. Those who do obtain the full cooperation of the clerk or operator in effecting changes are apt to have their well laid plans upset by misunderstanding or hostility on the part of the operator.

Good planning is largely the application of a few fundamental principles and common sense. Unnecessary reaching, stooping, bending, etc. should be eliminated with effective and a functionally convenient layout designed. The benefits of methods improvement accrue over a period of years as the result of continuous searching for better and more efficient ways of doing business. I feel it is better to have someone in the plant familiar with its processes and problems devoting at least a part of his time toward this rewarding activity rather than to employ outsiders to do the job. Improvement required the simultaneous application of man's faculties for human relation and inventive engineering. It should not be confused with special systems which accelerate both effective and ineffective activities without regard for the workers' morale. Methods improvement should be a continuously functioning part of the business of a firm recognized by the management and worker alike as beneficial to the aims of both.
CHAPTER V.

WORK LOADING

Having discussed the broad implications of when, where, and how work shall be performed we now proceed to detail operation scheduling or work loading.

I. Routine

Although business concerns vary in size and nature of goods produced, they share a common core of routine office work without which they could not function. This work may vary seasonally or periodically.

A. Schedule

It is to the advantage of the scheduler of office operations to know what work must be finished weekly, monthly, quarterly, etc. and to arrange the work load such that these certain assignments can be prepared or at least partially prepared in advance of the time required. Also time and facility must be available for completion of these regular assignments.

1. The Use of Specialized Labor

Tasks, and particularly elements thereof, may vary widely in the personnel required for performance, but if the task has been resolved methodically into its most economical units, specialized labor can be used at a lower cost than what would be required for a staff of a few skilled and versatile personnel who would seldom be employed at their full capacities. This is not to refute the contention held that the office force should contain several persons who could be shifted from job to job and perform each task efficiently. To have such a group in any business would be of definite advantage. It is suggested, however,
that in the case of repetitive tasks on a volume basis that the job be simplified to an irreducible minimum and that low cost, specialized labor be utilized to advantage.

Part of the scheduler's job is to know the amount of work that is in process at any time. Numerical serialization of forms compared at various check points should be able to afford this information. Its value lies in the knowledge of what could be done if emergency tasks were required to be processed.

B. Standards

Standards of performance should be kept with the intent of verifying the efficiency of the system and its operation rather than to single out individuals for blame or credit. Piece rates for office workers are incompatible with job and responsibility criteria of office as distinct from factory work where inspection and final testing are instituted to detect flaws in production. In addition to providing a check upon the effectiveness of methods, the timing operations can serve another purpose. Namely, to inform the management of the office time required to expand volume of work and at what point of increased volume additional help would be required. Where work has a seasonal peak, it is highly desirable to be able to do the work required the year round with the same force rather than to take in inexperienced help to overcome a seasonal peak. If the U. S. Post Office were able to handle the Christmas mail without the added help of temporary clerks and carriers both time and money could be saved. For the temporary worker has neither the skill in performance nor the interest in doing a fine piece of work that the permanent worker does.
1. The Rush Job

The rush job is an expensive interruption that should be avoided whenever possible. Many salesmen who regretfully tell their customers that "the mill is not set up to run specials" will think nothing of making their clerical help stop what they are doing and start upon something new. There are several disadvantages which obtain under these circumstances. The worker loses the continuity of what was being done and a review if not complete redoing of the first job may be necessary. The person giving the rush assignment sometimes thinks that by talking faster in explaining what is to be done performance will be accelerated. However, incomplete details or misunderstandings often arise in this manner. The basic cure for the rush job is to improve the basis system of office routine so that if the job were allowed to go through regular channels it would be done within a reasonable time. In the event that the work must be done immediately the scheduler should be asked to make the assignment to person or persons who work can best afford to be interrupted from an overall company standpoint rather than to have the work given to whoever is nearest at hand. Care should be taken to insure that work schedules are planned with a safety margin for inevitable delays. It is assumed here that both the workers and work scheduler know fairly well what the work load is and should be. To exceed this norm because of poor planning or a lack of planning may disrupt the regular flow. The worker may be demoralized by the work overload and thus output may well decline rather than rise to meet the increased demand.

C. Overtime

Overtime work is a way of solving the problem. However, there
are both legal and physical factors to be considered. Federal Wage
and Hour laws require that women may not be worked in excess of nine
hours in any day. The added cost of keeping work places and facilities
in operation for overtime periods may increase the cost of the work per-
formed at a rate faster than the offsetting benefit of having the work
caught up.

1. Loss of Efficiency

During World Wars I and II increase of production quotas was
attempted by working longer hours, but loss of working hours and declines
in quality of goods produced due to fatigue and illness resulted rather
then the gains expected. To work longer hours is a method of increas-
ing output which is inferior to the orderly timing of the essentials of
job performance coupled with concentrated efforts to improve the methods
of doing work.

II. Charts

A. Organization Tables

Tables of organization showing the lines of authority and res-
ponsibility together with charts for the regular flow of routine assign-
ments should be used as a guide in work loading. Opened incoming mail
sorting is an instance where such knowledge is essential to avoid mis-
routed work. The table of organization is useful because it shows who
should be consulted if a point is in doubt or is subject to question.

1. Aid in Training

Organization charts also serve as educational devices which
enable the worker to function more intelligently then if forced to rely
upon second hand or incomplete information ranging from name spelling
to jurisdiction over policies.
Charting the way that work is to be handled is another method for increasing office efficiency. The sales inquiry purchase requisition and other routine parts of the daily business routine should be charted and made mandatory procedure. The methods is thus recognized and is therefore defined for improvement. Training of temporary replacements or new assistants is more easily undertaken by demonstrating a flow chart than by word of mouth. Time in checking and follow-up is reduced because the interested party can follow the route of the matter rather than ask questions at random of people who may or may not be concerned. If cost analysis of the method of doing work is required the chart provides a schedule of the items involved. And if late and/or poor quality work is forthcoming charted methods can be more readily timed or analyzed from an efficiency standpoint than those which are not.

Assuming that reasonably efficient methods for doing office work have been developed and formalized, precise or empirical yardsticks of performance should be known by those responsible for getting the work out on time. Redistribution of the workers may enable the important jobs to be done.

2. Avoid Bottom of Pile Technique

To put all incoming work at the bottom of a pile and to whittle away in the order received is wasteful and short sighted. If increased volume means that a backlog is building up, the scheduler must see to it that the more important work is done first. Five jobs three quarters finished are an expensive delay of time and money when contrasted with two or three pieces of work carried through to completion.

Manufacturing operations which revolve around production control
prove dramatically the necessity for pushing to completion all the items and steps of the construction and of all equipment. The loss or failure to provide small and often easily overlooked parts means that labor, material, and overhead costs have been increased for which the firm cannot be reimbursed until the work is completed and shipment has been made. So with office operations, the lack of successive continuity to work means that the effort expended by several in a sequence of operations can be rendered useless until completed in the useable state. Thus, the bottom of pile routine should be avoided. The charted procedure indicates that events and conditions must obtain to provide the desired result. Forearmed with this knowledge a person in authority can thus take effective action toward the attainment of the desired end.

B. Justification for Load Records

If carried to the extreme, load records for each machine and work unit would be kept. Each new job would be broken down into the number of dollars of hours of work required for the completion. As work was completed and new work added, the amount of work ahead of each machine would be available at all times. By giving each major job a reference number, records could be maintained to show how nearly complete a job was. It must be realized that the cost of maintaining such detailed records is high, and is, therefore, justified only when used to effect savings. Thus, to keep an International Business machine system working at 85% to 90% of capacity, the keeping of records in the case of expensive equipment may be used to guard against idle time on the machine and, further, to concentrate the capacity of the device upon the work in the order of highest priority and utility to the concern.
A less costly method would be to prepare daily or weekly lists showing the relative importance of the jobs in the house. The work would then be done through the charted methods but in the details handled in order of their importance relative to other similar work at the same point in the system.

III. Personnel

The key to work loading is to be found in the background and training of office personnel. The best engineered systems and procedures can be sabotaged or reduced to ineffectuality by lazy and incompetent help. Capable people who have received adequate training and instruction can eliminate the necessity for close supervision and control. In addition, however, the employees must receive fair and equitable treatment. The maintenance of employee morale should be given prime consideration if the management elects to cut supervisory costs by the recruiting of help with capacities beyond the immediate task for which they were hired.

A. Stimulation of Initiative

The worker may meet the challenge of increased responsibility which brings the discharge of duty and the responsibility closer together than is possible where numerous levels of supervision are imposed between assignment of an order and performance of the duties.

The intelligent worker is more apt to give quality performance when given general assignments the programming of which is left to his discretion rather than to have the details itemized and scheduled. Every effort should be made to stimulate individual initiative both in the method and sequence of work provided so that the general needs of the
business are met. Care must be taken to insure that internal efficiency is maintained and that poor results are not tolerated. Such a situation arises when favoritism screens poor work. Unfair treatment means loss of morale and weakness to the individual incentive on which the system is based.

B. Uniformity

Uniformity of work can be maintained in the absence of intermediary supervision by proper methods, instruction, and manuals. It is assumed that at the top levels of supervision there is the knowledge of general work requirements.

The dissemination of this information may be accomplished through intermediaries who supervise those who cannot be expected to render satisfactory service without considerable supervision, or the general requirements can be given to workers with above average capacity who, in turn, will carry out the work.

From a timing standpoint this individual method has the advantage that work can be expected to be pushed through completely by one person rather than to encounter delays while allowing divided work to accumulate ahead of specialists.

Work assignments should be made on the basis that the person or persons who receive the task must follow through the task to completion. One completed job is usually of more value than several tasks partly finished.
CHAPTER VI

FILING

I. Source of Information

The filing of office reports and papers represents the skeleton of office systems. The filing system should be thoroughly integrated with the planned method of performing office routine. Files are check points in the office cycle as well as repositories for information. Thus, their content and arrangement of materials should be designed to afford information with a minimum of effort. In effect, the filing system should be set up so that the answers to information most frequently sought from the files can be obtained readily. This applies particularly to papers which are in the process of being worked with and as yet have not reached their final repository. This also applies to current papers which in most offices today are to be found in the various incoming desk baskets of workers. Thus, memory of search are required to find a particular paper which is in current circulation. These papers should be arranged in an alphabetic or numeric order which is most convenient for the next user. Someone posting sales to customers' ledger would prefer to have the sales slips in alphabetic order, after which the tickets might be put in numerical order for final total or filing. The chances are slim that anyone other than the clerks would have to use the papers for any purpose other than the routine one intended. Thus, no worthwhile purpose is accomplished by placing the work papers in any order other than that in which they will be processed by the next user. Pre-sorted work has a psychological advantage for the next workers in that the next task may be started at once without the
need for tedious preparation. Thus papers can be located in a minimum of time for either the worker or anyone else who is interested.

A. Integration

The close relationship between the general method of doing office work and filing should be clearly understood. In the production control system used by the General Electric Company (see 6-3) the presence or absence of work papers in a file, particularly the progress file and dead load file, gives the interested person a status report on the job in question. The king pin in this system is the move card whose circulation throughout the system sets the work in motion. Note-worthy is the fact that the system in operation is essentially the circulation of papers through a chain of transient files to final filing. Further, in the transient files the identity of each job remains distinct and readily discernible. The strength of this and other efficient filing systems is that properly arranged papers provide accurate information simply and directly to those concerned.

B. Basis for Organization

Setting up a file system should be coordinated with the general work methods developed by the firm. No changes should be countenanced in the filing system without the approval of the office methods planning officials. The files are the libraries of information instituted to answer questions as they occur in business life. It must be realized that to put any batch of papers in an order which will render them useful in the future is a continuous cost. However, the heavy expense which can be avoided is the establishment of a filing system without considering the type of information which will be sought from the file and with what frequency. Clearly then the filing system should complement the general
office system. It must be instituted with the intent to provide most readily the information which will be most often sought.

1. **Systems**

   Basically there are but two filing systems—alphabetic and numeric. Color and paper size may be added in the case of company forms to provide added bases for filing. However, the numerical and alphabetic systems remain universally applicable to the consolidation of company and alien paper into one filing system.

2. **Temporary Files**

   Care should be taken to avoid cluttering filing cabinets with information having but a short time value. Temporary holding or pending storage should be maintained close to the work place of the person to whom information of a short run nature may be of value. If this utility does not become apparent within sixty days the chances are that its subsequent value at some future time will be considerably less than the cost of filing and storing the material.

3. **Register Files**

   Filing systems which require a journal or register for the assignment of a reference number should be considered only as a last resort. The cost of maintaining the register and then thumbing through it to locate an item are elements of needless cost. An extra carbon copy intelligently filled by subject will often suffice to answer questions in regard to the matter if the addressee's copy is mislaid or overlooked.

   **C. Make It Pay**

   The basis for a filing system should be to attempt to foresee the questions whose answers would require reference to the filed material.
and set up a system which will enable such questions to be answered easily. This requires a knowledge of the business to insure maximum utility. The sales manager of a New England electrical manufacturing concern made a practice of filing customer complaints with reference to products in a file by the type of equipment. This was done after satisfying the customers' wants. The contents of the file was analyzed and on the basis of this data the sales manager was able to make specific recommendations on improvements on the line of equipment manufactured. As a result of this action design, improvements were incorporated in the product, and the sales manager received a substantial increase in salary.

D. Centralization

Control over filing systems should further the purpose of providing information to the proper persons. Departmental and private files should be reserved for those executives or departments who have exclusive use or authority with respect to the filed material; such as personnel records, consolidated accounting statements, and other material of a confidential nature. Other records and filed material should be consolidated into a central file. Catalogue files should be stored in a library so that both purchasing, engineering, and drafting will use the same reference material. The cost of maintaining up-to-date catalogue files may be reduced if it is done in one place and serves several departments.

II. Centralized Filing for Control

Material control records in a manufacturing or selling concern should be centralized rather than decentralized to avoid duplication of
work and to provide a single accurate source of information. A manufacturing concern in metropolitan Boston has established the practice of maintaining various independent material control records at Receiving, Inspection and Production Control. Thus, if complete information was required on any item, it was necessary to consult the records of each department or take a physical inventory in order to obtain a complete and accurate story with reference to the status of any item in question. The cost of maintaining separate records in this situation was considerable when one considers the cost of equipment, forms, and salaries required to maintain the records, the cost of searching for complete information when required and the imputed cost of not having the information readily available when required by those concerned.

A. Stock Control

A Central Stockboard which shows by part number the following information in one card would have sufficed the needs of job order cost and production control. A 5x8 card in a Post Index, Remington-Rand or equivalent visible file should be used for the storage of cards on jobs which are current. Completed work should be kept in blind files for as long as is considered necessary for audit and future bidding. The record is kept on two separate cards, the upper containing the cost estimate, schedule and cost data as incurred. A separate card is maintained for each part on the material list for each job. Reference to engineering records should be made to determine what sales orders have been used in any part in question. Standard house items of hardware, lugs, wire, etc. are maintained in the store room under the direction of the chief storekeeper on a maximum-minimum inventory basis and priced on the stan-
standard cost system. The Estimator (either buyer or methods engineer) and others receive the full material list prior to the release of bids on new work. Upon notice that the bid has been accepted the storekeeper gets a list of the standard house items to be used on the job which he must allocate to the job from stock, or requisition an additional supply from the purchasing department. The estimator on the basis of the drawing, the material list and order quantity determines how much shall be ordered, what operations shall be required, and estimated the cost of each operation and thus the total. The cards material list and drawing are then turned over to production control for scheduling and requisitioning of material. After the materials and parts are ordered, cost data is entered in the spaces provided on the upper card.* (Form # FEC-1) The reference may be either a paid invoice, a priced summary of labor job cards broken down by detail number or assembly drawing number as applicable. The quantities involved in the total sales orders as well as the number of units in the cost item must be expanded as a ratio for each part by operation so that cost reduction techniques may be instituted if the cost is running ahead of the estimate early in the game.

The buyer or methods engineer who estimated the price shall negotiate the purchase, and be responsible for meeting the cost he figured.

If the percentage complete figure shows the price costs incurred to be running ahead of the estimate, the estimator must be informed in order that remedial action may be taken if possible.

* P. 47
The lower card* (Form # FMC-1) does three things: initiates the location of material, lists the balance of material as yet not received from the final vendor or shop, and lists the balance of material on hand in stores. The "due-in" reference may be a receiving slip, a purchase order, or a debit memo which accompanies material returned for repair or replacement. Thus it may be shown that the receipt of material reduces the amount due in while the placing of added orders inside or outside the shop together with debit memos increases the amount due in. The stores balance is affected by the receipt and issue of material. The former happens after goods have been received, inspected and sent to stores. The latter occurs when a lot of material is issued on a work order with a material list itemizing the quantities to be issued. Also the stores balance may be reduced by the return to stores of defective material in process. This material should be inspected, tagged, and exchanged in stores for a new piece. The defective item (to be repaired or junked) and new material are exchanged in stores. No new material is requisitioned unless the spoilage factor, order quantity minus minimum quantity has been exceeded. The bottom edge of the material record should be filled in with colored signals in the spaces provided to show visually the status of material, e.g. whether or not there is still material on open order, at inspection, or in stores. Frequent entries will fill this card with daily transactions more rapidly than its companion above. It is therefore numbered. The current card is kept in the lower pocket to facilitate hand posting and to provide greater

* P. 49
### Chart VII

| Part # | Description | Order | Due In | Shop | Stores | In Process | Complete
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visibility for the colored signals in the spaces provided at the visible edge of the card.

Information of a longer run significance is kept on the upper card because comparatively fewer entries will be made and consultations are required in the normal course of events.

Record keeping personnel are thus reduced to a minimum of a few skillful well paid clerks who, when equipped with telephone operator type head sets, sliding stools (Cramer 42) or equivalent, the daily working papers, a sharp pencil, a low cost slide rule can provide quantitative material information, cost data, and "the word" on an item by reference to the card system.

B. Relation to Standardization

Cooperation with the drafting department is highly desirable in order that the use of standard house hardware items be encouraged. Also required is a numerical system of parts designation that is succinct and accurate. Physically, a washer and a shim may have a similar physical appearance. Thus, care must be taken to avoid confusion and to insure uniformity in designation throughout the plant.

The reduction in the number of departments which formally kept records together with the increase in the value of information obtainable from such records justifies the expense of paying a fair salary to the clerk and the cost of maintaining the system.

C. Personnel

With regard to personnel used for this work it must be realized that the success of the system depends in large measure upon the quality of work done. Therefore, the coincidence of the need for high type
personnel and the opportunity to learn in breadth and depth the operations of the business system should result in the recruiting of intelligent and capable clerks who are thus groomed for higher responsibilities in the future.
CHAPTER VII

REPORTS

I. Purpose

Reports and summaries are the devices by which senior executives are kept informed summarily of the details of the business transactions. Reports may be of two general types, factual or interpretive and suggestive. The statistical abstract of the company's ledger known as the balance sheet is per se a factual report. But the glossy covered brochure which many corporations publish as their annual report is more than that. If properly compiled, it states the facts in a summary form, applies to those facts the bias, prejudice or interpretation which it wishes the reader to develop. And lastly, it creates the impression or suggestion that a definite series of action has been or should be taken. State and Federal law require that certain reports mostly of a financial value be made periodically. These reports except for the annual report of corporations to stockholders are primarily factual and the issuing department of company has, for the most part, no responsibility for the analysis of the figures once compiled. Getting back to the purpose of reports--to inform senior executives about the happenings within a department or about a job--we see that the philosophy of many is merely to compile the data and let the higher paid executive do the heavy analytical thinking if any.

II. Dual Nature

I contend that the compiler of a report has a dual requirement to fulfill--to compile the factual data and thus the right and responsibility for their interpretation. These two elements of reporting
should be distinctly separated as fact and opinion. However, facts and figures are of little value until they are analyzed and subsequent action is taken or policy established as a result. The person closest to the detail may lack the capacity and perspective of the senior to whom the report is made, but by virtue of the fact that the former is in closer association with the material is, if reasonably intelligent, bound to develop a knowledge of what the data represents and what conditions must obtain to alter them with the idea of making improvements.

A. Employee Evaluation

The executive upon receipt of such a report principally gets the factual data but perhaps still more important a new train of thought and an opportunity to evaluate the capacities of his employee.

B. Analysis

With regard to the factual and statistical information it must be noted that by themselves they are paper and marking. Comparison with previous data or analytical evaluation in terms of units produced, man hours worked, or dollars spent must be made to give them meaning. Physical units make a more reliable yardstick then the dollar because of the changing purchase power and the need, if used, to deflate dollar figures to "constant dollars" in terms of a base period.

Furthermore, reports should show the percentage or increment of change with respect to similar figures for a previous period in the past.

C. The "Industry Approach"

The use of the "Industry Approach" as practiced by Standard and Poor or the product approach of the United States Department of Commerce Publication entitled Survey of Current Business provide a plane
of reference for comparing the individual concern with its industrial competition. Trade Associations such as the American Iron and Steel Institute and the Radio Manufacturers' Association provide similar reference as applicable.

III. Aids in Report Making

The time required to compile the factual material required for a report should be reduced to a minimum by proper scheduling of the work and assigning the forms such that the compilation of summaries or the making of partial abstracts is easy.

A. Timing

The posting of the due date for each report and the name of the person responsible for its completion in each section should serve to keep the data required in the mind of the person responsible. A tickler file by date due or an appointment pad may also serve for this purpose. The keeping of periodic sub totals on various elements of reports may reduce the last minute rush and keep matters on a current basis. The retention of working papers in a temporary or holding file prior to final storage or disposition may facilitate the doing of work step by step rather than all at once.

Care should be taken to avoid conflicts with other departments where analysis of the records used in various departments is required provided that the using department is unable to contribute the data. This should not be a regular occurrence because each department or person must be responsible for the data which he originates. However, when combined operations are necessary care must be taken to insure that the work will dovetail rather than conflict with regular requirements.
B. Form

Proper forms can be of great help in preparing reports. In manufacturing concerns with a job cost system the bill of material provides a paper with pre-listed items for analysis. If the concern has an ozaloid or white process drawing printer, the data may be entered on thin paper and copies of the report can be reproduced directly from the original.

1. Analysis Pad

The use of the accountant’s basic tool, the columnal analysis pad or “spread sheet” as a basis for design for the forms upon which information of a more permanent nature is to be recorded is recommended. The data is upon original posting entered, distributed, and totalled. Dates and reference numbers may serve to identify the elements of the summary which it is designed to include. Cumulative data when submitted in report form where speed is preferred should be “rounded off”. Units of measurement should be made sufficiently large so that the number of figures per entry is reduced to a minimum. This practice should be followed except where great accuracy is required. The rounding off of cents in financial reports and the expression of figures in units of hundreds or thousands rather than to carry the full number of cyphers.

The factual data is of secondary importance compared to the analysis and recommendation that is or should be an integral part of the report. People inevitably have some bias or prejudice about any matter. The prejudice or the reasoning may be illogical and unfounded, but it is present whether specifically expressed or not. The aim is to develop analytical talents in the person who compiles the report data. Encouraging the individual to think may provide an outlet for creative ambitions
and give the senior officer who received the report the benefit of added suggestions and ideas which he is free to accept or reject.

C. **Brevity**

Brevity is highly recommended in the compilation of reports. The time required to read it should be reduced by keeping the report to one page or less and striving for clarity in the expletive accompanying text. There should be a punch line—a crisp sentence whichkeynotes the salient facts which are reported. This should serve to verbally underline in red the data which the person compiling the report feels is significant.

D. **Notification**

Reports which are intended merely to notify someone that performance of a given task has been accomplished should be handled by the use of forms. Where the job is of a repetitive nature forms may be printed pre-listing the fixed information and providing check blocks or writing space for additional information. If a non-repetitive report is required, the assignment should be made in writing. If possible, space should be provided for adding the data required directly to the assignment sheet. Confusion is thus reduced and clarity is enhanced. The added cost of preparing a formal report is eliminated. The required data will merely be added and the paper signed, dated, and returned to the issuing official. When the question and answer are thus returned together, reference to original documents is eliminated.

Or, as in the General Electric production control system shown on P. 42, the return to the production progress file of the color coded copies of the work order indicates that the work order in question
is completed up to the point indicated by the department returning the colored slip.

If reports of a non-recurring nature are required it may be well to realize the amount of detail which must be analyzed in order to compile the report. The executive should attempt to arrive at his decisions on the basis of regular reports and personal observation rather than to interrupt the regular routine.

E. Unit Analysis

If statistical summaries are of greater assistance in formulating company policies, the management should seriously consider a unit analysis system for its routine such as the McBee Keysort. When volume justifies the cost punch card system such as available from Remington-Rand or International Business Machines Corporation may be considered. Sales analysis by product and locality for a firm with high volume and a wide market is typical of the situation in which these devices may be employed to advantage.

F. Trend

To get maximum utility from reports, the management should attempt to visualize the trend developing or stagnating from the data reported. This final analysis is a serious managerial task. For it must be remembered that the figures themselves and the data per se are relatively inconsequential. The true value of reports lies in the results stemming from their evaluation.
CHAPTER VIII

PURCHASE SYSTEM ANALYSIS

I. Materials Procurement System

Common to many concerns and embodying elements typical of most manufacturing outfits is the material procurement system described below. It is hoped that, while the specific choices made may not appeal to all the readers, nonetheless, suggestions for the improvement of one's own purchasing system may come to mind.

A. Requisitions

Purchase requisitions should be made out in triplicate for each item required for items ordered for a sales order. This may at first glance seem like excess paperwork, but individual requisitions are desirable because the buyer may be unable to purchase all the items appearing on one requisition from a single source, and cost accumulation and analysis are practiced by unit requisitions. The requisitions should contain spaces for all the information required on a purchase order. This is done in order to facilitate the work in negotiating the purchase to insure that all points which the originator wanted will be completely carried out.

Care in writing requisitions should be taken to specify delivery, required quantity, sales order number, and particularly description. The use of drawings to describe a part per print is an exact and thorough although expensive way for defining terms. Three copies are required for each item requisitioned to provide a temporary record for the originator, and two working copies for the buyer which go to the receiver immediately upon negotiation of the order, with the original copy being used to type the order.
B. Retention of Requisition

The originator keeps a copy of the requisition for comparison with the returned copy of the purchase order. (See Chart 1) The originator's copy of the order is filed numerically by drawing number within the sales order file. In the case of overhead expense items or fixed assets the copy returned to the requisitioner may be filed by account number. From the information entered on form FEC-1 (see Chapter VI) the requisitioner in production control knows how the work on a given part is to be done. With this information and a knowledge of the time available he prepares the purchase requisition.

Alternative systems employ a single copy of the purchase requisition but rewriting of the purchase requisition is then usually a necessity. The copies of the requisition are utilized to the fullest and it is written but once except in those cases where the order is divided into successive steps or among various vendors. However, by keeping but a single item on each requisition the chances favor completion of the purchase order without the need of rewriting the requisition.

C. Distribution

Two copies of the requisition plus drawings if any are forwarded to the purchasing agent for scrutiny. Some systems of organization require that requisitions be cleared through the stores department to see if the material requisitioned is already in stock or to the controller for authorization to purchase. The planning department has already decided what is to be purchased. Since the inventory of stores is allocated to specific jobs with the exception of standard hardware items nothing is gained by sending the requisition to stores in this instance. However, firms without a planning group and using general
inventory for manufacturing may find it advantageous to clear all requisitions through the stores department, thus increasing inventory turnover and avoiding unnecessary purchasing since the purchasing agent must inspect the requisitions before the purchase is made, inspection and authorization are combined into one operation. Having the authority to purchase for a concern, the purchasing agent must also be responsible for the release of requisitions for negotiation by the buyer. This violates the procedural principle that performance and inspection should be separate. In most instances, the direct material items to be purchased will appear on the material list, so that there is no need for separating these functions. For major capital expenditures, higher authority should be consulted after the planning department is certain that such major expenditures are essential.

D. Negotiating the Purchase Contract

Using the requisition as a work paper the purchase is made. The buyer should attempt to arrive at a total cost for each order as well as unit prices for each item to facilitate cost accumulation on the job and to determine the dollar value of incomplete orders as required. In the event that this latter requirement comes about, it is far easier to have the total done individually in advance than to have to do it all at once. Furthermore, such calculations tend to make the buyer price conscious.

E. Requisition to Receiver

Immediately upon completion of the order one copy of the requisition which by now contains all the purchase order information is sent to the receiver. Many firms make a practice of providing the re-
CHART ONE
THE CHAIN OF A PURCHASE ORDER

A REQUISITION PREPARED IN TRIPlicate
B REQUISITIONER RETAINS COPY
C TWO COPIES OF REQ"N TO PURCHASING AGENT FOR APPROVAL AND SIGNATURE
D BUYER NEGOTIATES PURCHASE
E COMPLETED REQ"N COPY TO RECIPIENT
F PURCHASE ORDER TYPED
G ORDER INSPECTED AND SIGNED
H REQ"N FILED BY PURCHASE ORDER #
I PURCHASE ORDER DISTRIBUTED
J TWO COPIES TO VENDOR
K VENDOR'S ACKNOWLEDGEMENT FILED BY DUE DATE
L REI"N'S COPY FILED ALPHABETICALLY BY VENDOR
M ACQUISTER'S COPY IN SALES ORDER FILE ALPHABETICALLY BY VENDOR
N REQUISITIONER'S COPY SENT TO STOCKBOARD FOR FILING TO FORM PROC-1
O REQUISITIONER COMPARES PURCHASE ORDER AND REQUISITION
P REQUISITIONER'S COPY FILED IN SALES ORDER FILE NUMERICALLY BY PART NUMBER

OPERATION

STORAGE

TRANSPORT

INSPECT
ceiver with a typed copy of the purchase order. However, rapid delivery may occur prior to the time when a typed copy of the order could reach the receiving clerk. Therefore, this requisition saves time and the cost of another copy of the order.

F. Typing the Order

The original copy of the requisition is sent to the purchase order typist who in this case, provides five copies of the order. The number of copies on order and the means of producing them vary widely. Some companies make the requisition on a reproducing master from which are obtained requests for quotation, follow-up copies, and any number of copies of the purchase order. Added copies of the purchase order are required in the case of purchases of direct materials on cost plus fixed fee government contracts. If government inspection is required at the source, four additional copies of the order are required. Divisions of a larger company are usually required to give a copy of each order to the central as well as the branch accounting offices. The needs of the business will determine how many copies of the purchase order should be prepared. The most should be obtained from each and no more than needed should be provided. Where information only is required and not future reference, the information should be abstracted and the reference passed on to other users.

G. Checking the Order

No unnecessary filing should be tolerated. After the order has been typed, the buyer should carefully check the order prior to signature. A check list could be used. But experience has shown that errors are more frequently detected by a careful and concentrated reading of the
typed order than interrupting eyes and mind by shifting from a list to
the order.

**H. Filing**

The requisition is filed by purchase order number. It may be
put to other uses but since we trust that the major points are covered
by the order copies are the only remaining occasion to use the requi-
sition which is used to compare with the order or sometimes for audit
purposes. Thus it is filed numerically by purchase order number against
such an eventuality.

The vendor receives two copies of the order one of which he
is instructed to sign and return. This makes for uniformity of contract
and provides proof that the vendor got the order and agrees to its pro-
visions. The acknowledgement copy is placed in a vendor file by date
due in while the order is open and filed numerically by purchase order
number when completed. The buyer's copy is filed alphabetically by vendor
both when open and complete. The accounting copy is filed alphabetically
by vendor within the sales order file. The requisitioner's copy is
filed numerically by drawing number in a file by sales order. No purchase
register is kept. But by reference to the proper file information which
is always available by vendor, purchase order number, sales order number
and drawing number. However, reference to the central stockboard should
provide answers to most questions arising. It will be noted that the
stockboard keeper posts information but retains no files. Again is
emphasized the need for excellent personnel in this position.

The buyer keeps his copy alphabetically because his contact
is by vendors. Thus the use of alphabetic files is indicated.
Both accounting and material control or production control maintain sales order files of which purchase orders are a part. Accounting keeps their copy alphabetically by vendor within this file to provide a final check on invoice prices and material cost allocation.

The requisitioner's copy of the purchase order is sent to the stockboard for posting to form FMC-1; thus increasing the amount due in. It is then forwarded to the requisitioner who compares it with his requisition prior to filing numerically by part number within the appropriate sales order file. The materials control group charged with the responsibility of initiating purchase requisitions may determine readily what has been ordered on a job without the need for maintaining a set of records for orders placed.

II. Receipt of Material

The paper work involved in the receipt of material is illustrated in Chart II. Upon receipt of material from a vendor (A), a receiving report is prepared in quadruplicate (B) after the incoming count. The receiver's pencil pushing activities are minimized in order that he be able to concentrate upon accurate identification of incoming material and prompt transmission of goods to incoming inspection. One copy of the receiving report is attached by the receiving clerk to his copy of the purchase requisition. When the order is complete, it is held by the receiver for ten days and then destroyed. Open order posting, receiving logs and registers are dispensed with in favor of more accurate work elsewhere. The receiver then concentrates on identifying goods, writing up receipts, and moving goods to inspection. A clerk typist takes the receipts to the previous day and prepares a reproducible master showing purchase order, vendor, item and quantity,
copies of which are disseminated to the stockboard for posting, buyer, materials control, inspection, etc. The clerk clips the receipts to the requisition and refiles them alphabetically by vendor, if incomplete, and in the ten day pending file if complete. The receipts and requisitions for the ten days previous are then destroyed.

Three copies of the receiving report accompany the goods to inspection, after which the results are entered upon the receiving forms with the aid of a waxed spot (Shaw, Walker Kopi Spot or equivalent) in the space provided. One copy accompanies the goods to stores, a second copy is sent to the stockboard for posting to form FMC-1. After posting at the central stockboard, the slip is returned to inspection. Here the item is checked off on the inspection copy of the receiving log. The receiving report with the results of inspection contained thereon is then placed in a sales order file by drawing number which is maintained at inspection. The original copy is sent to the buyer who posts the receipt to his order and retains the receiving slip until it accompanies the vendor's approved invoice to the accounting department for payment.

III. Return of Rejected Material

The procedure for handling the return of rejected material is shown in Chart III. A duplicate debit memo is prepared and written in triplicate by the buyer. The original and a copy accompany the goods to the vendor, the original is signed by the vendor and returned to the buyer. This document also accompanies the vendor's approved invoice to accounting for payment. The second copy is sent to the stockboard for posting and thence to the receiving department where the clerk
A Goods shipped from vendor

B Receiver counts goods &
"Fills" receipt in quadruplicate
3 copies accompany goods to
Inspection.
1 kept at receiving (cf. Text)

C Inspection results entered in
triplicate on receiving slip

1 Copy to stock board for posting
To Form FM-1 Thence to Inspec-
tion where filed by Part #.

2 Copy with the goods to stores

Original to Buyer who post receipt
To back of purchase order: Buyer
Retains receipt which later
accompanies vendor's approved
Invoice to Accounting. for Payment

D Paid Invoice to stockboard for post-
ing to Form FEU-1

E Paid invoice returned to Accounting
Where filed numerically by voucher
Register # together with order
And original receipts.
assigned to help the receiver attaches the memo and the requisition
and places the reopened order in the receiver’s file alphabetically
by vendor. The receiver’s pending file allows ten days for rejects to
be returned. The receiving log sent to inspection provides a daily re-
minder that no articles may remain at inspection for more than five days
from their receipt. By means of proper scheduling the return time for
defective goods is not to exceed and in most cases a cash discount may
be taken on the vendor’s invoice within the ten day period with the
knowledge that cash is being disbursed for acceptable merchandise.

After the paid invoice has been posted at the stock board
(Chart II-D) to form FEC-1 it is stapled together with the purchase order
(except in partial payment) and the receiving tickets for which the bill-
ing was made. It is then filed by voucher register number (Chart II-E)
in a file by months, numerically by voucher register number. In the
event of audit the accountant can show an invoice, evidence of receipt,
and in many cases, a purchase order to support the voucher register
entries.

It is ever the objective to obtain maximum utilization from
work papers while they are current and then to file them, if need be,
in such a way that lends itself readily to the answering of such in-
quiries. Care should be taken to distinguish between those records
which require supporting paper thus requiring filing and retention of
the source material and those records which do not. The number of copies
of a form may be reduced by placing these record keeping activities in
series with retention file recording done last. Duplication should also
be avoided. If the copies of the same form are filed in different depart-
ments by the same method, one or both of these retention files may be eliminated.
CHART III
RETURN OF REJECTED MATERIAL

A. BUYER PREPARES HANDWRITTEN
   DEBIT MEMO IN TRIPlicate

B. COPY TO STOCKBOARD TO POST
   ON FMC-1; THEN TO RECEV'R
   10 DAY FILE TO REOPEN ORDER

C. TWO COPIES WITH GOODS TO
   VENDOR: ORIGINAL SIGNED
   AND RETURNED TO BUYER

D. SIGNED DEBIT MEMO ACCOMPANIES
   INVOICE AND RECEIPTS TO
   ACCOUNTING FOR PAYMENT

[Diagram with circles and triangles indicating operations, storage, and transport]
CHAPTER IX

CONCLUSION

I. Aims of Office Manager

That the day is just so long and that overtime is expensive are facts of business life. The wise manager will try to insure that the important things are done before secondary matters. As the scale of office operations becomes more complex, the continuity of a task must not be lost and obliterated by either volume of work or the number of workers.

A. Flexibility

Whatever systems are devised the office planner must strive to maintain the same flexibility that a seasoned radio operator has in being able to "copy behind." That is, to allow the transmitting station to accelerate its rate of transmission without losing the text. This is accomplished by providing a temporary storage in the mind for the incoming text. Similarly, temporary shelving may be provided for office tasks whence the major jobs may be selected and the minor ones will not become overdue or lost. Thus wide variations in work can be handled without increasing or decreasing the office force periodically. The manager must fully understand his business in relation to the industry and economy as a whole in order that he may recognize the more permanent shifts in the level of activity.

B. Eliminate Duplicate Work

Duplication of effort and defensive record keeping (records maintained to justify the actions of the department with incomplete in-
tegration with the rest of the firm's work) should be eliminated. This critical attitude should also be applied to machines that are obsolescent. Here the manager must be attuned to the latest methods and devices for doing work and accept the premise that the current method is the best one for the time being only. There is always a better way. Business activity and the means of administering it are constantly changing. Some features of both shift more rapidly than others, but to death and taxes we may add the inevitability of change.

C. Cost Control

Office work should represent a fixed cost of doing business. Every effort should be made to maintain it as a fixed rather than a variable element of cost. This does not mean that low wages and sharp practices should be encouraged. Quite to the contrary, the best personnel available should be recruited and made to want to stay. Under the proper conditions responsible workers with a cooperative attitude will make suggestions for improvements. The elements of control as previously discussed are how and when. The latter is the element which must be constantly checked by a vigilant manager. Clearly it is better to do one job completely than to start several without pursuing them to completion. But to work out this precept completely in a multi-departmental system of organization is a large order. Gantt charts, tickler files, Productrol Boards, and memoranda filed by due date are means of calling attention to work which must be done by a given time.

II. Importance of Personnel

Excellence of both methods and scheduling techniques will accomplish nothing unless the workers have confidence in management and
thus a willingness to work cooperatively. Management must therefore maintain morale by fair and equitable treatment of the people who make any system work.

Recommendations which lead to greater office efficiency include selection, training, and retention of personnel with above average intellectual capacity, centralization of controlling information on the details of a company's business at one spot, and the development of an office planning group.

The first of these is the most important. Thus, this paper has concentrated upon the technical side of office planning. But many of the shortcomings present in office work today can be overcome by a willingness on the part of management to cultivate a more intelligent office force.

III. Centralization

Centralization of vital information means less searching for answers. Decision making can be speeded up when delays in obtaining factual data are reduced. The centralization of information in a single record keeping facility gives the management a training ground where likely prospects for future advancement can become familiar with the details of how the business operates. Managers may also become familiar with the person who serves them in such a position.

IV. The Administrative Viewpoint

The final recommendation is that each office manager become familiar with planning and scheduling techniques. Knowing several ways to perform a task and still to want to find a better method is a healthy outlook for office supervisors to have. Curiosity about new
machines and administrative techniques should not be allowed to lag.

Careful scheduling of work should be a constantly sought objective for office managers in order that the required work be done on time with cost minimized and delays eliminated. No situation or problem in methods or scheduling should ever be considered as completely solved. Improvements can be made based upon the needs of current business techniques as well as the nature of business circumstances. A planned system which answers the need at one point of time should not be regarded as the final of ultimate decision. The formalization of plans and procedures for doing work must not allow the systems and techniques used to become inflexible. System is a means to the end of transacting business. It is a useful tool which, however, must be regularly sharpened and over-hauled to provide continuous satisfactory performance. Office the work is the procedural backbone for most of economy. Improvement of office efficiency is a top priority assignment for management, because office work is the means whereby modern business is transacted.
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