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SUBSCRIPTIONS — Single Issue $1. Yearly Rates: U.S. and possessions $5; Canada $5.60; Foreign countries $6.20. (Make all checks payable in U.S. dollars.) Write for organizational bulk rates.

EDITORIAL POLICY: PERFORMANCE Magazine umbrellas those performance factors which improve the competitive advantage and excellence of American Consumer/Defense products and services for the markets of the world. PERFORMANCE is dedicated to the effective exchange of innovative technology and ideas as they relate to quality, reliability, safety, maintainability, cost reduction, value engineering, life cycle cost, management improvement, cost-to-produce, standardization, cost engineering, integrated logistics support, defect prevention, suggestion systems, motivation and productivity.

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PERFORMANCE Magazine is published by Charger Productions, Incorporated, 34249 Camino Capistrano, Capistrano Beach, California 92624. Second class entry at San Clemente, California 92672.
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By CHARLES H. MEADE

Our society has been based on individual initiative since its beginning. These qualities of individuality and self-sufficiency have indeed created the national strength, vitality and diversity required for our spectacular growth and continued competition in the world marketplace. The social values ingrained in the American mind reflect this philosophy and manifest themselves as 'upward mobility.'

But this individualistic attitude, when viewed in the context of today’s industrialized society, places some interesting constraints on individual desires. The young manager, participating in a management development program, is well-schooled in the art of leadership, but he continually ponders the system and worries about its effect on him and the sublimation of his individualism. There have been intense interest, study and spending allocated to develop leaders for business and government, and to actually provide that path to the top we all hope to follow.

THE GAP

Such management development is essential, but is lacking when the receiver attempts to apply the usual leadership techniques on-the-job. For example, the new first-line manager, or aspirant to management, receives leadership training which is oriented to effectively managing his employees. In reality, he has limited authority to put into effect all the techniques he has learned. The environment on the job is frustrating and filled with compromise.

A common complaint (usually heard) is, “I’m frustrated because I wish I could do all the things I’ve learned; but that’s not the way the organization really works.” This standard comment illustrates the need for followship training as a part of leadership development.

Unlike the outgoing process of leadership, followship is a mental attitude that must be developed within each of us. Before this attitude can be established, we must come to the full realization that in today’s society, success in our job and life is directly related to our willingness to accommodate the goals and desires of others: Especially if one happens to hold a minority opinion.

Developing the followship role of a leader will not cure the ills of an organization, but it will create an understanding among managers which should mitigate the frustrations of working in a real-world organization with its less-than-optimum environment. A manager’s position as the man in the middle is very real and requires a complete understanding of the need to follow as well as to lead. Indeed, followship is the foundation upon which leadership is based.

DEVELOPING FOLLOWSHIP

There should be no problem in integrating the study and practice of followship into existing management development programs. All that is needed is a partial reorientation away from the downward-oriented leadership emphasis to accommodate the role of the manager as a follower.

Several sessions should be devoted to discussion of this role, cases solved, and role-playing situations — created to emphasize the environment which fosters compromise decisions from higher management. It should be stressed that we must not only

Continued on page 6

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FOLLOWSHIP
Continued from page 5

practice empathy with those we lead, we must also understand and recognize the position, opinions and forces that influence those who lead us. For just as their policies form our working environment, those very policies are the result of accommodations at higher levels.

This upward empathy, once developed, will provide the framework for understanding the pressures and environment in which decisions are made. Feedback should be encouraged through periodic individual and group seminars to discuss the effect of followship on managerial style and effectiveness. In addition, management questionnaires and interviews will also yield valuable data on the understanding of followship within the organization and its effect on the decision-making process.

If managers at all levels practiced all the techniques of good communication and participative management, the need for developing the followship role would be considerably diminished. But that's just not the way it works and, realistically, providing first and middle-level managers with the knowledge to better understand their varied roles will reduce worry and increase efficiency.

THE NEED

Today's organizations are fertile ground for the study of human interaction and have provided many solutions for the people problems of a modern society. Until recently, it could be said that the American worker had been conditioned to follow: through involuntary military service, unions and all the restrictions that have been imposed on an individual. These conditioned social values are slow to change, but are changing.

For example, Viet Nam and recent political upheavals have dealt severe blows to traditional social values. It is imperative that our future managers understand their followship role in order that they may provide the informed leadership necessary to motivate employees and maintain viable, productive organizations. F
NASS PAPER AWARDS

Three papers were selected for top honors in the National Association of Suggestion Systems' recent International Papers competition. The judges awarded first place to Thomas N. Knowles' paper "Procedures and the Suggestion System." Knowles is the director of Operations Analysis at Florida State University in Tallahassee. Author Eddie Gunter, Jr., and collaborator Neil George received the second-place award for their submittal, "An Analysis of the Basic Criteria for Evaluating the Administration and Performance of an Employee Suggestion Program." Both are employed by the Naval Nuclear Fuel Division of the Babcock and Wilcox Company at Lynchburg, Virginia.

The third-place award was made to Eve M. Capps, Incentive Awards administrator, Training and Incentives Branch, Civilian Personnel Division, Administrative Support Center, Defense Supply Agency, Cameron Station, Alexandria, Virginia. Her paper was titled, "Are You Getting All Available Benefits from Your Suggestion Program?"

Cash awards of one hundred, fifty, and twenty-five dollars, respectively, were presented at the Association's Annual Conference held at Atlanta, Georgia, in September, 1974. In addition, each author and collaborator received an engraved, marble-based desk pen set. Knowles also received an additional award of fifty dollars for the best paper submitted before July 1, 1974.

WORKERS EVALUATE MANAGERS

Members of the Transport And General Workers Union in Wales are forming management disciplinary tribunals to collect data and deal with inefficiency by management people. According to one union official, the demand for such tribunals came directly from the shop floor stating that the workers were fed up with seeing their suggestions for improvements ignored, and tired of having the unions constantly blamed for disrupting society when bad management is often the cause of the trouble. Suggested punishment for inefficiency would range from a reprimand to a recommendation that the inept offender be sent to management school.

SETTING WORKERS STRAIGHT

If you have to correct an employee, try following these four steps: let him know you understand why he erred; break the news gently by giving him a pat on the back before correcting him; don't magnify the importance of a mistake to impress it on his mind; once you've made your point, close with such words as "I'm counting on you."

These comments were published by Prentice-Hall, Incorporated, newsletter Executive Report and went on to report on a Texas company that spotlights the number of production rejects from each area by posting monthly standings. A healthy competition has resulted in this idea; and no prizes have been needed to keep incentive high. A work group seeing its name in first place has proved to be an adequate reward.

JOINT NPMA/DCASR MEETING HELD

The North Texas Chapter of NPMA and DCASR Dallas jointly sponsored a regional property workshop in Arlington, Texas, June 5-6, 1974. Over 100 attendees heard Major General Don Nunn, then commander, AFCMD (General Nunn has recently received an appointment as assistant to the Chief of Staff, USAF for Management), discuss "Air Force Contract Management Trends and Objectives." Other distinguished speakers included Messrs: Charles P. Downer, OASD (I&L); Roy Bullock, Hq. NASA; Ward A. Wollard, DIPEC; Joseph Joers, Hq. USAF (SAFIL); John E. Robinson, Hughes Aircraft Company; Commander Wright A. Brunson, NAVPRO-Dallas; E. O. Clark, LTV-VSD; John E. Finn, VP-Bell Helicopter International; Fred Randall, VP-LTV-VSD; and Messrs. Chandler M. Bush, Frank Edwards and Ray Harrison, LTV-VSD. The program was concluded with a problem-solving workshop panel session with Messrs. Clark; Robinson; Edward H. Ames, DCAS-Dallas; and Knox Lowe, NAVPRO-Dallas, sitting as panel members.

A broad range of property management policy and problems was discussed. The regional activity is viewed as a precursor to the National NPMA Seminar scheduled for Boston, October 3-4, 1974.

FILM ON ENERGY PROBLEMS

Management groups interested in borrowing a full-color print of a 16mm motion picture entitled "Energy Management: The Vital Difference," may get one from the U.S. Commerce Department. The film relates solutions to energy shortages. To order the twenty-minute sound film, write Domestic Division, New York District, 26 Federal Plaza, New York, New York 10007.

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LEONARD J. MARCHINSKI received his BS in aeronautical engineering in 1947 and his MS in 1959. His twenty-five years of experience includes six years as vice-president and general manager of a 400-engineering-employee consulting, design and engineering firm which served the aerospace industry, and eight years of experience with Boeing, including service as chief stress engineer. As such, he supervised ninety men engaged in stress analysis of all Boeing Vertol helicopter components. Besides the helicopter experience, he has been responsible for structural analysis and design of subsonic and supersonic fixed Army aircraft.

He presently is manager of Cost Engineering for Boeing Vertol Company with technical and management direction of the company effort to reduce costs by implementation of cost engineering concepts.
SYSTEM COST COMPARISONS

In some systems it is not feasible to develop a regression analysis for cost; in these cases, historical cost for the various components can be compared. A cost for every part of each system can be developed, building up to the total cost of that system. Table III shows the landing-gear costs for the CH-46 and the CH-47 aircraft and the cost for UTTAS. The nose-gear strut of UTTAS seems expensive at $5,000 when compared with the CH-46 and CH-47, which cost on the order of $2,000 and $4,000. This pinpoints an area for designers to investigate. Cost engineering must make visible to the designer this cost inequity so that he can adjust his design to reduct those costs.

Similarly, the hydraulic system shown in Table III received the same type analysis. Costs of all components of hydraulic systems in historical aircraft were gathered and grouped into families of parts, such as valves, filters, tanks, hoses, and fittings. The filter costs on the CH-46 are $223, $342 on the CH-47, and $382 on the UTTAS. The indication that possibly the filters on the UTTAS aircraft

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<th>TABLE III. Costs Per Part Of The Landing-Gear And The Hydraulic Systems</th>
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PERFORMANCE
are expensive alerted the designers; designs and specifications were reviewed and cost trades were made to reduce these costs to below historical trends.

Cost-estimating relationships must be derived not only for systems and subsystems, but for components. Figure 16 shows some work that has been done on the cost of utility actuators used for door openers, ramp openers, and rescue-boom actuators, but not the sophisticated flight-control system actuator. From five points of data, a cost relationship was developed involving weight, stroke of the actuator, rated load of the actuator, and the quantity built. The correlation is a fantastic 0.999972. This relationship permits a fairly accurate estimated cost for actuators. These are parameters which the designer can control; or if he cannot control them, he can at least understand them and the effect these parameters have on cost.

**OTHER METHODS TO REDUCE COSTS**

Most of the previous data has been on airframe components, drive systems, and mechanical components. The manufacturing and detailed fabrication of every system is important, but another major cost-driving factor is the installation of all these components and subassemblies into the airframe structure. Figure 17 shows an example of what can be done to reduce the installation cost of electrical equipment. The wiring terminations used in the past require tools such as wire strippers, screwdrivers, probes, and pliers. The UTTAS, on the other hand, is using a wiring-termination design which requires only stripping the wire and then inserting the wire into a small hole in the termination block. Only two small tools are needed.

Newer techniques and newer materials can reduce costs. For example, cost studies of a fiberglass rotor-blade system showed that by changing the fiberglass supplier and by changing the resin to one with a lower curing temperature, a cost reduction in material can be realized. The lower cured temperature is a by-product cost reduction already demonstrated in the order of fifty percent. Additional studies show an additional potential cost reduction of fifty percent on the new figure is possible in the purchase of fiberglass pre-preg material.

Probably one of the most difficult areas for design to cost is unrealistic specifications and requirements. For example, why should panel instruments be designed to withstand vibration levels of 10g when historical data shows vibration levels on instruments on only about 0.2g? After a review of the UTTAS specifications, the requirement for the instrument panel was reduced to 2g. This will produce a cost saving in production of about $4,000 per aircraft.

Since most aircraft are made up of fifty percent manufacturing costs and fifty percent procurement costs, the cost of components which are purchased is a major design-to-cost item. The program to address this area can be outlined as follows:

Include parts count and cost targets in RFO to vendor;

Require vendors to submit their design-to-cost program, including definition of cost-driving factors;

Assign significant value to vendors' cost programs in proposal evaluation;

Include incentive formula based on performance to cost target; and

Utilize fixed-price incentive contract with fees awarded at time of production commitment.
COST-ENGINEERING DATA

FUSELAGE STRINGERS (COST TRENDS)

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NOTES: V.E. NO. (103P) 1
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COSTS INCLUDE: MATERIAL, FORMING, CUT TO LG, PRIME

Figure 18. Costs of Fuselage Stringers — Sample Page From Cost-Engineering Manual

COST-ENGINEERING MANUAL

A cost-engineering manual is another important area in cost reduction. A cost-engineering manual must provide designers with information they can easily use, information they will easily retain, presented to them in a manner which will make it easily accessible. An example of the type of information that should be contained in such a manual is shown in Figure 18.

This chart shows the relative cost of the simplest design versus the most complex. A variety of stringers or structural stiffeners are used by most designers, possibly in the selection of the type of stiffener. In many cases they do not consider cost. The man utilizing this stiffening arrangement will think twice before he uses a hat section versus a J section, with a commensurate cost of almost twice as much. The chart is simple and easy to use and will be easily remembered by the designer. It is not necessary to go to the cost manual every time he must make this kind of decision.

Another sample of information for a cost manual is shown in Figure 19.

A tolerance of 0.005 inch or so is relatively easy to achieve. But a designer can tell from this chart that changing from a tolerance of 0.002 to 0.001 inch will increase the machining cost by a factor of 4, a fact that is very easy to remember and very easy to use.

CONCLUSION

The Boeing Vertol Company has an active, ongoing and meaningful design-to-cost program. Designers now consider

Figure 19. Costs of Machining Tolerances — Sample Page From Cost-Engineering Manual

cost a design parameter along with weight and performance. Every design decision includes a thorough understanding of the costs involved. But to meet the requirements of the design-to-cost philosophy, personnel on each program must be dedicated to work the cost problem. These personnel must be motivated from top management down to the man on the board to reduce costs. Most important is to provide detail visibility to designers as to what each part and each component costs. The designer must also understand the factors affecting costs and the various trades which they can make to reduce costs. The weights department has a motto, "Design it right, make it light." I would like to propose an equally meaningful motto: "Design to cost or all is lost."
By Dr. Barbara J. Marting

NEED FOR TIME UTILIZATION STUDIES

The amount of time which a manager spends on each activity depends on the requirements of the job situation. A study of 179 board chairmen and company presidents reveals that their time is not always spent effectively. They worked a 63-hour week — 53 hours in the office and ten hours outside. The outside hours consisted of attending meetings or conferences, reading, and having dinner with customers. Other studies show that the executive who consistently works more than 45-55 hours a week is in serious danger of impairing his productivity. But the executives did not consider themselves overworked; only 34 percent thought they put in too many hours and only nineteen percent thought they worked longer hours than other executives.

Also, the studies show that 57 percent of the executives think the telephone disrupts their schedules and decreases efficiency. Eighty-seven percent spent one hour or more on the telephone each day and forty percent spent two hours or more. It is noteworthy that fewer than half had secretaries to screen their incoming local and long-distance calls, and only one-fifth had secretaries place their outgoing local calls.

Another way to utilize time is through the use of dictating machines; only 21 percent used dictating machines and forty percent wrote letters and memos in longhand. Many wrote in longhand and then dictated to secretaries, which is a needless duplication of effort. Additionally, the majority of the respondents read the letters before sending them out; efficiency experts recommend that this be done only in very important letters.

As a result of the inefficiency in time utilization, 72 percent of the respondents stated that they didn't have time to think and to plan; only two hours could be called their own each day. Thinking and planning are the heart of the manager's job; if time is not available, it should be taken!

Little reading was done; 83 percent of the respondents spend only one hour each day for reading trade or other printed material; the same percentage stated that they can't keep up with the mass of literature they get. Thus, much of the reading material probably is carried home at night in a briefcase. However, the briefcase no longer is a status symbol; now if carried home at night, it is considered a symbol of poor performance.

Not enough information is in the literature on time utilization studies; comparisons of effective time utilizations should be available for similar job situations. A time utilization study was done with the conference members to this National Association of Suggestion System managers seminar one month before they came to this meeting. Primarily, the results showed that time allocations involved the following activities: (1) speaking, 40.2 percent (face-to-face contact of 69 percent was the highest percentage activity in the speaking allocation); (2) writing. 21.5 percent (letter, report and memo writing of 76 percent was the highest percentage activity in the writing allocation); (3) reading, 13.8 percent (letter, report and memo reading of 70 percent also was the highest percentage activity in reading allocation); (4) leisure, 13.1 percent (contact with co-workers of 41 percent was the highest percentage activity in the leisure allocation); and (5) thinking and planning, 11.4 percent (personal notes of 55 percent was the highest percentage activity in the thinking and planning allocation)

After comparing one's time allocations to certain activities with other persons' allocations in the group, perhaps new priorities need to be determined for the best utilization of one's time. Or, perhaps the job situation necessitates spending a certain percentage of time in each activity, according to the management functions performed. However, these time utilization studies do not pertain to the actual functions of management; i.e., senior performance.
Managers should spend more than fifty percent of their time guiding and developing subordinates. Many junior managers don't get sufficient guidance regarding the best utilization of their time.

Many effective managers keep a checklist of accomplishments, in priority order, that they want to achieve each day. In years past, checklists have been considered a very insignificant method of thinking since they provide merely viable data with which reasoning is done. However, use of a binary number system in programming computers has called for a new thoroughness of analysis and brought checklists back into prominence.

Schedule time so priority tasks can be accomplished; keep points in mind. In considering short and long-range activities to be accomplished, the first step is to list long-range goals. Second, decide upon priorities; certain goals are necessarily more immediate than others. For example, when the boss is waiting for a report, there's no question about which activity takes top priority order, that they want to do. For this reason, a manager's activities account for approximately ninety percent of his effectiveness. Thus, the secret to knowing how to spend time effectively and avoiding unproductive events rests in concentrating on a few activities. Ten percent of events account for the bulk of a company's business, so do perhaps ten percent of a manager's activities account for approximately ninety percent of his effectiveness. Work on big, important jobs and don't really have to do. Devote resources to those ten percent of events which make up ninety percent of your return of effectiveness.

**TEN COMMANDMENTS FOR TIME UTILIZATION**

1. Think and plan ahead; five minutes of thinking can often save an hour of work later. Devote time to problem now; unique situation becomes crisis because it wasn't dealt with when it could have been handled in one hour by planning — now it will take eight hours to solve.

2. Stop procrastinating; procrastination is the thief of time. Avoid triple evils of indecision, postponement and procrastination by adopting slogan of “put off until tomorrow that which by tomorrow might not have to be done at all.” One cannot save time-squeeze by putting off until tomorrow.

3. Change your attitudes or work habits to improve the use of time. Limited time cannot be controlled; instead, control your behavior in the time available. Develop a respect for time and a sincere desire to get more done; a respect and desire that pervades your management activities and shapes them accordingly.

4. Delegate jobs to subordinates who have more ready access to pertinent information; proper utilization of staff is one of the biggest time savers a manager can have. Beware of overemphasizing parts of job you know best; delegate parts of job you know best and perform those parts you need to learn.

5. Maintain harmonious relationships with others; compromise facilitates action, controversy impedes it. Master the art of communication to boss, peers and subordinates; save time by effectively communicating and creating understanding among people, thus unifying efforts, reducing confusion and eliminating wasted motions.

6. Determine how you spend time; find out what you are doing now and compare with what you would like to do. Perfection is the child of time; if you are too efficient, you are doing many things you don't really have to do.

7. Decide what to work on by first deciding what not to work on; eliminate those jobs where effort is unproductive. Work on big, important jobs and leave small, unimportant ones until later, even though they seem urgent. Work on causes that will ultimately win rather than on those that will probably fail; work on the project whose time has come.

8. Invest time and effort in growing aspects of your business or profession, similarly to investing money in growth company rather than stagnant one. Discontinue those projects that are no longer productive; don't continue an activity just because it was started two years ago to solve a problem that existed then.

9. Events manage your time; free relatively large uninterrupted chunks of time for analyzing and dealing with large problems. Allow no interruptions, close the door for quiet thinking time. Let no interruptions or unplanned activities eliminate your thinking time; for every interruption, a train of thought is broken — this is time wasted. Go to other person's office; save time getting other person out of your office.

10. Devote time on opportunities; too much time is spent on problems and too little on opportunities. Devote resources to those ten percent of events which make up ninety percent of your return of effectiveness.
Inventory by Exception

JAMES M. WHALEN, past president, Central Florida Chapter of NPMA and treasurer and charter member of North Texas Chapter NPMA, is the supervisor of Property Administration and Capital Accounting at Honeywell Aerospace Division, St. Petersburg, Florida. Whalen has received several awards for innovations resulting in more cost effective Industrial Property Management. His experience also includes Contract Administration, Business Systems Engineering, Facilities Requirements and Industrial Instrumentation.

by James M. Whalen

Inventory by Exception is a recent addition to the improving methods of industrial property management. It is an effective, cost-saving method of eliminating expensive wall-to-wall inventories. The advent of the computer has created this capability.

Inventory by exception is a method by which each time an item of tagged accountable equipment is transferred, moved, calibrated, maintained or physically handled or touched by some service function or operation, this action is reported and the master computer file is updated with the most current activity or transaction date. This provides a fresh inventory date for all items in the computer system. In addition, periodically or as desired, a list (sort) of all items in the computer system not inventoried can be requested to complete the total inventory.

Using this method, plus the addition of a code designation in the computer run for all equipment bolted down (does not move), will further reduce the physical inventory requirements. Projections, based on the types and amount of property in-house that would probably pass through such a system, versus those that would not, indicated that an estimated eighty to eighty-five percent of the total property population would be inventoried using this method over a two-year period. With this technique, the normal course of transactions over the typical two-year inventory cycle should cover the majority of the inventory task. The remaining un-inventoried items can then be reported from the Data Bank on an exception basis prior to the end of the cycle period and physically inventoried to complete the cycle one hundred percent.

The Property Administration Department isolated more than fifteen different types of activity centers throughout the division where actions to accountable property qualified as an inventory taking place. Within these fifteen types of activity centers there are more than thirty-seven actual information reporting points.

Figure 1 indicates some typical inventory reporting centers and illustrates the type of actions that can qualify as acceptable inventory actions from which information received will update the computer IBE date for each item reported.

A new form was designed as a trial vehicle for documenting transactions at these activity points. This form is in a system compatible keypunch format, and after receipt and verification by Property Administration, is forwarded directly to Data Processing to update the master file. A test of the feasibility of total implementation was started during January 1973. The first activity center tested was the guard gates. The test proved successful. Information is now received weekly from all guard gates of all property, by tag number, passing through these perimeters. The second activity center, implemented the following month and now furnishing information on all office machines, is the Industrial Engineering Department. The remaining activity centers were adopted as feasible until the total information system was working. The total system is now a comprehensive information input network.

A new computerized property control system implemented in 1972 enables this flexibility and instant or perpetual inventory service. This system of inventory by exception has reduced annual division inventory costs considerably.
This new system of inventory by exception is a definite service improvement to the division and the government and one of the many practical uses that is being made of property records and the computerized system. For contractors performing under government contract, the IBE system of inventory meets and enhances the requirements of ASPR Appendix B, Part 5, Physical Inventory.

The trade-off or payback of an implementation investment of approximately $5K to $6K a year (hiring a property clerical employee) will result in initially saving the division over $40K in wall-to-wall inventory costs per year. As the system is further refined and improved this initial investment as an annual recurring cost will be further reduced.

In considering implementation of an IBE system, it should be noted that the investment required is directly proportional to the total property population and the additional monthly transactions anticipated.

This system has now been in full operation for over one year. Sufficient time has elapsed and documentation accumulated to substantiate the initial projected results. A review of results at this time reveals satisfactory results beyond those anticipated.

IMPLEMENTATION

In our computerized Property Control system output report sorting is available by inventory date field in numerical sequence. Additionally, the system has the capability of sorting by inventory date within class (tooling, test equipment, etc.), within location (building, plant, column) and within owner or contract. This unique sorting capability enhances the output benefits of IBE substantially. Some benefits are: automatic aging of property in the warehouse, inventory status of the total population of a specific tool crib and, after a period of time, some indication of items that are suspect to low or no utilization.

Step two of the implementation plan was to determine from where within the division the IBE information could be supplied. This was accomplished by reviewing the Division Organization Chart and a personal extensive tour throughout all the buildings. Figure 1 reflects the initial areas selected as system feed points.

Step three was the determination of what type information was required and what vehicle would be used to transmit the information. The minimum required information selected was: 1) item identification number, 2) date of transaction, 3) location of transaction (the location of the transaction was also an indication of the type transaction), 4) the employee name and number attesting to the transaction. An existing keypunch document with a little cut and paste provided a simple inexpensive document for IBE transaction reporting, all fields numbered and ready to go. Reproduction of the master copy provided a supply of trial forms at minimal cost.

This source document used to report an IBE activity to Property Administration for accountable record update is then retained as evidence of inventory.

Next it was necessary to write a procedure to define what type transactions would qualify as an inventory, who would do the reporting, how and when.

Several methods of obtaining approval for implementation are available. Authority to proceed with implementa-
tion can be accomplished in one fell-swoop by top manage­
ment issuing an edict to do it. In the interest of expediting
implementation and to preclude the possibility of non-
acceptance, the writer elected to convene several small, in-
formal meetings with the immediate supervisors of the areas
that would do the reporting and proceed on a trial basis
with their assistance.

You all are familiar with the initial response; additional
work, need more people, it won't work, and so on. With
individual, separate negotiations, each supervisor agreed to
the implementation of the original proposal or some minor
variation or modification thereof. The original objective
was to implement one reporting point per month until all
reporting points were implemented. It happened much
quicker than expected, within a six-month period.

Taking advantage of the use and flexibility of the com­
puter, coupled with the individual intended use of prop­
erty, now makes inventory by exception an economical
feasibility.

The initial approach and plan for implementation of any
system of IBE reporting, of course, depends primarily on
flexibility and adaptability of the existing in-house auto­
mated property system. This includes the availability of
unused fields, or the substitution of information in fields
already in use, and the output report sorting sequence
capabilities. If the system has space available for the added
information but cannot sort by IBE data field (inventory
transaction) in either an ascending or descending sequence,
the output information and IBE report tabulation will be­
come a laborious manual effort.

The original plan, after analysis of this writer's automat­
ed system, was to utilize a three-character field normally
used to enter the department number in which the property
was physically located during annual inventories (the
Found Department). The numeric characters used represent
the year and month of IBE inventory transaction, e.g., 738
would represent 1973, in the eighth month. Where the
digits in the month of inventory exceeded the one character
limit of the field, an alpha character was used, e.g., A=
October, B=November, etc., hence, 73B would represent

OPERATIONS

During the early stages of system operation, it was notic­
ed that some information feed points transmitted the IBE
source input forms religiously, but others began either dry­
ing up or became intermittent. These were normal growing
pains and because this was anticipated a simple check list of
input stations was devised and maintained on a monthly
basis. This check list created a record of the information
received each month and where it came from. If the normal
input information was not received by an indicated or
routine receipt date, the property clerk now had a tool for
being alerted to a follow-up action requirement. A manual,
monthly accounting log was also created so that various
statistics could also be maintained. Examples of the type of
backup maintained and made a matter of record include:

a) The number of items reported from a given feed
point.

b) The number of accountable items selected for input
to the computer included in (a) above.

c) A monthly figure of the total division accountable
inventory base.

d) The percentage of items inventoried during the
month.

e) The percentage of items inventoried from inception to
date.

ANALYSIS

Analysis of log and check sheet information led to re­
finements of the input information. In one case it was de­
termined that the majority of inventory information sup­
plied from one feed point was consistently tagged expense
items, and only a very limited amount of items were the
desired accountable type property. The time involved
monthly in sorting out the few wanted items wasn't worth
the time invested. This feed point was subsequently elimi­
nated. Other results of analysis included the findings of
duplications of input information. The same item would be
calibrated consistently in sixty or ninety-day cycles and
would be recounted in the manual record as it again passed
through the system. This required more refinement of the
manual log to eliminate unneeded or redundant informa­
tion. During initial system implementation the manual log
was an excellent cross-check system for comparison to the
statistics derived from the computer. The modified log is
now used only as a check on the input from feed points,
and a monthly ballpark status of IBE results.

As a by-product the log can also be utilized to evaluate
the performance of the property clerk. By comparisons of
the numbers of items reviewed by the clerical from month
to month, the employee's output results become measur­
able.

As mentioned above, multiple countings of the same
item passing through the same feed point or through several
feed points ballooned the manual record percentage count of items inventoried in a given time period. This multiple counting cannot occur within the computer. By use of an inception baseline date and counting forward, the computer will only indicate the most recent occurrence of inventory as the new IBE date and always eliminates the previous date, thereby creating a count of only one.

**HISTORICAL RECORDS**

In order to retain a history record of acceptable inventory transaction documents as backup for corporate and government auditors, a standard manila folder is prepared for each month of the year. This folder is then filed by inventory date. The inventory date is identical to the date indicated in the computer report. This enables the auditor, when reviewing inventory backup documentation, to go directly from the item inventory by exception date in the computer report 738 to file 738 (or from the file to the item) and locate the source document that updated the item IBE date. A problem discovered in this area was that it became extremely time-consuming to locate exact document within the file that an individual item was listed on once you went to the file. This situation was remedied by preparing a master listing of all the various forms used to input information to the IBE system, then assigning an alpha character code to each type document: Guard Gate input Code A, Tool Crib 17 input Code B. Now each time the IBE date is updated in the computer the input source document alpha code is also input into the system and prints out on the computer report. This leads the auditors directly to the proper file and document within that file.

The system is now working, government approved and is saving the division costly wall-to-wall inventories. The system has been proven successful. The automated IBE system enables the division a flexibility of instant perpetual inventory service. This system also reduces the expended time requirements of periodic inventory reports imposed by prime or higher tier contractors in that only the exceptions need to be located to complete the inventory request. IBE is a definite improvement in Property Administration and a benefit and significant betterment in the control of government property. It is one of the many practical uses that can be made of the division's property records and computerized system.

**REPORTS**

Periodic reports are issued. The initial report was issued six months after inception date of the system (inception date: July 1973). The most recent report was issued in July 1974 and included the first year of operation. The report is short and simple and is prepared in a minimum of time from information generated by the computer. The report is divided into three major categories vertically. They are: 1) Government Property, 2) Company Property, and 3) totals of Government and Company. Each major vertical category has two sub-categories: 1) items, and 2) dollars. The horizontal structure of the report matrix is divided into four categories:

1. Accountable items and dollars in the system (The baseline).
2. Items not inventoried by IBE.
3. Items inventoried by IBE (inception to date).
4. Percentage items/dollars inventoried (inception to date).

The first six-month report and one-year report statistics were as follows:

<table>
<thead>
<tr>
<th>IBE Totals (%)</th>
<th>Items</th>
<th>Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six Months</td>
<td>39.4</td>
<td>55.3</td>
</tr>
<tr>
<td>One Year</td>
<td>53.7</td>
<td>65.1</td>
</tr>
</tbody>
</table>

*Inception to Date

In a division service organization such as Property Administration, it is a difficult task to justify existence by economic results produced. But as this system has proven, Property Management can be a money-making business. The least a good Property manager can do is save the company operating expenses.

**THE FUTURE**

Refinements and improvements to the system are now planned. With hard documented evidence of successful results in hand, selling newer innovations should come easier. Future planning includes streamlining the input document so it can be fed directly to keypunch; analyzing the feasibility of including material in a similar type system; and finding additional feed points. And, by use of the excess aging date, expediting excess items through the screening process to relieve warehouse storage space; possible utilization studies; and for uses such as calibration and maintenance recall purposes.
A Challenge to SAVE —

John J. Riccardo - President Chrysler Corporation
1974 SAVE Presidential Citation Recipient

This address was presented by Mr. John J. Riccardo, President, Chrysler Corporation at the 14th annual SAVE National Conference Awards Banquet in the International Hotel in Los Angeles on April 30, 1974.

Mr. Riccardo was the recipient of SAVE's Presidential Citation in recognition of Chrysler's excellent and continuing programs in Value Engineering and Value Control. Mr. C. P. Smith, SAVE president, noted that Mr. Riccardo is the first president from private industry to receive the award, established in 1966. Previous recipients were from government or the defense industry.

Mr. Riccardo said Chrysler uses the term value control because the technique is applied to more than product engineering. Value control also analyzes the efficiency of line and staff operations, many different manufacturing operations, and determines the most efficient ways to meet Occupational Safety and Health Act standards. In addition, Chrysler is also developing a value control program for suppliers. The Chrysler president urged SAVE members to apply value engineering techniques to keep the competitive system strong so business can "provide the materials and products and services to meet the world's needs."

PERFORMANCE
Thank you, Mr. Smith, for those kind words about Chrysler Corporation and our value engineering programs. I am pleased to be at your conference and to receive your Society's 1974 Presidential Citation.

Chrysler and the Society have a lot in common. While it's difficult to compare a business and a professional society, it is apparent that we share similar goals—to provide the best value at the lowest cost.

I am impressed that 9 different countries are represented at this conference. This is probably the biggest single collection of international inflation fighters ever assembled in any single location.

This worldwide representation illustrates the international character of business today. We are operating in a worldwide economy. Business is in a head-to-head competition around the world not only for customers, but also for capital, management talent, and raw materials. I can't remember a time when the competition has been tougher, and when it has been harder to earn an adequate profit.

I don't have to tell you that steadily rising costs are putting heavy pressures on profit margins of most business in most countries. And the automobile industry has been hit harder by these pressures of inflation than any other industry.

For example, since January 1972, our costs for labor, materials, and parts have increased by $537 per unit, while the prices for these items have increased by $216 per unit. As a result, we have incurred unrecovered costs of $321 per unit in this period.

Even more serious is the recent rapid increase in material costs since the start of 1974 model production last August: Steel is up $35 a vehicle; aluminum is up $20 a vehicle; castings are up $18 a vehicle; copper and rubber products are each up $11 a vehicle; plastics are up $9 a vehicle; zinc is up $8 a vehicle, and fabric and trim materials are up $5 a vehicle.

We have taken strong measures to adjust our operations to these higher costs in an all-out effort to improve our profit margins. And we are also working with our 25,000 suppliers to help them find ways to hold back the inflationary pressures they are facing.

Value engineering helps us reduce our costs. We think it can help our suppliers, too.

At Chrysler, we use the term value control, not value engineering, because we apply the techniques to more than product engineering. For example, we have used it to analyze the efficiency of line and staff operations, and many different manufacturing and technical operations. We have even used value control techniques to help determine the most efficient ways of meeting Occupational Safety and Health Act standards, to prepare job descriptions for our personnel office, and to organize an engineering department.

Our purchasing office is working out details of a plan to enable Chrysler and our suppliers to apply value control techniques in a joint program. I'm sure our people are using value control techniques to work out the details so we can get this program in operation as quickly as possible.

This joint venture will make Chrysler and our suppliers more competitive in the marketplace, and it will mean the consumer will obtain even greater value for his dollar.

We see value engineering helping all business in obtaining the most efficient use of their resources. And since no one has yet repealed the law of supply and demand, that job is going to be tougher than ever.

According to the Interior Department, the United States depends on imports for more than half the supply of six of 13 basic raw materials required by an industrial society. As more countries of the world increase their standard of living, there will be more competition for the limited supply of basic raw materials. Cost pressures will become even greater as these raw materials become even more scarce.

Now, more than ever, business needs new approaches to keep our competitive system strong, and to provide the materials and products and services to meet the world's needs.

I'm not a value engineer by training, but if I were asked to make a FAST diagram of the society, I would say your basic function is to SAVE RESOURCES—manpower, capital, material, and energy to keep business competitive.

It's a big challenge, but I think the Society of American Value Engineers is equal to it. Value engineering is one of the basic management tools business needs to build a healthier, happier, and safer world for future generation.

Thank you very much and good luck.
Mankind has a tendency to follow set patterns and/or procedures as illustrated by the poem, “The Calf Path.” It seems to me Suggestion Systems administrators are doing this in their program appraisals. It appears this aspect of our job should be carefully examined.

What is the basic criteria for evaluation of performance in our Suggestion Systems? Our answers indicate that we follow that pattern set forth by the NASS STATISTICAL REPORT. This report is a valuable possession for Suggestion administrators and in itself is worth the NASS membership fee. However, let us not close our minds by just accepting what we have. Instead, let's broaden and explore other approaches to program performance standards.

We will cover several areas that we hope will stimulate the thinking of all administrators to develop new approaches for measuring standards of performance.

The first of these areas is:

I. STATISTICAL

Program standards should be set prior to the beginning of each calendar year. This can be accomplished by carefully plotting on a graph certain known mathematical factors and then establishing a norm for each category of appraisal.

Let us explain one segment. The Suggestion Program has been in operation for five years. How many employees were eligible to participate each month of each year, and how many ideas were submitted each month for each year? Plotting a norm for submission by month can readily be established.

The accompanying chart is a hypothetical example.

Such a chart gives information we can use in evaluating and establishing goals for the Suggestion Program. For example, it shows clearly that the months of June, July and August are the months when emphasis on submission is needed. Another factor is that a realistic goal for improvement over each month in the year can be set. Ten extra suggestions per month in this case would make a fine improvement and should be easily attained.

This same mathematical appraisal can be done for the number of employees who participate; number of ideas accepted; and amount of awards paid.

These appraisals clearly point out how the program is progressing. It is an individual appraisal and not a comparison with other programs. This is a more significant appraisal because no two programs operate under the exact same set of conditions.

Another area to be considered in a critical appraisal is:
II. EMPLOYEE'S CATEGORIES

This is a vast area and about all we can do in this paper is to touch on the basics and let them guide the administrator to do the detail work. Administrators should look carefully at:

- Age limits of participating employees. Plot participating employees in age groups, i.e., 20-24, 25-29, 30-34, etc. This will show the age groups of those participating.

- Sex of employees participating. It is important to know how many participants are male and how many are female employees. This tells us that one of the groups may need special attention to increase participation in the program.

- Job classifications of employees participating. The listing of job classifications for employees eligible to participate by plotting the number of eligible employees in each classification and the number who participated for each classification over a certain period. This will reveal which job areas should have special attention.

III. PROMOTION AND PUBLICITY

I am not an advocate of special campaigns or special contests. However, the success of Suggestion Programs do depend upon good publicity and occasionally a special emphasis program is necessary. A good, hard look at this phase of a program can reveal a great deal. It may point out some weaknesses we have as suggestion administrators. Let's examine this in a general way and then the administrators can look more critically at their own programs.

TYPE OF PUBLICITY
- Posters. What kind are used?
  - Commercial?

Performance

Do we have clearly defined guidelines?
- Are our forms simple, easy to follow and complete?
- Do we protect the supervisor from adverse criticism in his processing of a rejection?
- Are our reports to management interesting, factual and distributed on a regular basis?
- Do we create opportunities to involve management in awards presentations?
- Do we get their reassurance on policies?

Suggestion Systems cannot be successful without management support. It will be given to the administrator who seeks it.

In summarizing, if every administrator looks at his or her program and uses these guidelines honestly and sincerely in the major areas, the strong and weak spots will become evident.

I. Statistically, goals need to be set annually and measured against set standards.

II. Employee categories for participation by age, sex and job classifications.

III. Promotion and publicity should be planned and scheduled and should be unique and changed often to maintain interest.

IV. Management support is the administrator's responsibility to get and hold by personal involvement, clear instructions and good reports.

Whoever acquires knowledge and does not use it is like one who plants Community News Media
- Newspaper articles?
- TV and radio?
- No news media?
- Special events only?

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PROPERTY SYSTEM APPROVAL PROBLEMS AND STRUCTURE ALTERNATIVES

BY RAYMOND W. HARRISON

(This article is based on a presentation given at a recent NPMA Central Region Seminar/Workshop.)

I would like, first, to comment on the difficulty of securing management approval for the development of a Property Information and Control System, and then to outline some basic actions and alternatives that are available in the development process.

Certain government property problems were brought into focus at Vought Systems Division (VSD) several years ago by our Naval Plant Representative Office (NAVPRO). As a result, a Property Administration Department was established. This was when we began to study property problems from a long-range viewpoint.

We did all the things that we thought good systems people were supposed to do: We studied the problem exhaustively, analyzed it carefully, identified alternatives, and selected a preferred solution. We then began the task of developing a system to implement our solution.

To develop a system you have to have management support. This is where we ran into trouble! We found it very difficult to get management approval. I want to make it clear that this was difficult, but I do want to assure you that the most difficult problem you will face in the development of a property system will not be technical; it will be to secure management approval.

After considerable thought and frustration, I concluded in my own mind why this was so. The reason being that management simply is not aware of the cost associated with the possession of property. The real villain behind this is the inconspicuous nature of the cost of property. Spoken more directly you could say, "the hidden cost of property," but this implies a deliberate act to conceal and such is not the case here.

To illustrate this point, I would like you to think of a company as having but two major assets, people and property. I would like to compare the control systems that companies establish for these two major assets.

Supplement three to the Armed Services Procurement Regulations (ASPR) establishes ten categories for property. If we consider that these ten categories represent the significant events that occur in the life cycle of property, we can compare the control systems for people and property using these ten categories. These are:

- ACQUISITION
- RECEIVING
- RECORDS
- STORAGE AND MOVEMENT
- CONSUMPTION
- UTILIZATION
- MAINTENANCE

INVENTORY

SUB-CONTRACT CONTROL

DISPOSITION

Taking a look at the more important categories, let us look at Acquisition and Receiving first. Most of us know how these two categories are supposed to work for property. Have we ever considered how they work for people?

When a company needs a new employee, a department somewhere fills out a requisition form and processes it through supervision, much like they would do for property, only this requisition ends up in the people department (personnel) instead of a property department. When the applicant's screening is completed (similar to vendor screening), and a price agreed upon, the new employee arrives at the people receiving dock (personnel). He is immediately identified (photographed), classified (job classification), and tagged (badge and employee number). These are actions that are always thought of in terms of property control, yet how many of us could tell horror stories about property found on company grounds that somehow escaped these actions, that you found, and wondered "who it belonged to" and "where it came from"? In all the years in industry, however, I doubt that anyone in this room could tell of one single exception to this procedure for processing people.

Records are another good source
for comparison. If a property item escapes the acquisition-receiving procedure, it will automatically escape records; it gets into the system without an accountability record being established. An accountable record for each person, however, is always set up in personnel without exception and all significant data recorded and maintained up-to-date.

Utilization and Disposition are also good points for comparison. Utilization standards and measurements, however desirable, are difficult to attain for all the different types of property. Therefore, in most instances, utilization remains an unachieved goal. For people, however, there are systems upon systems to develop standards and methods for utilization measurement.

Property, once purchased, is assumed to be a sunk cost and the importance of utilization downgraded. When a person is employed, companies consider the situation entirely different, and constantly monitor his or her utilization to determine whether that person is still needed. When this utilization becomes too low that person is readily classified surplus to the department's needs. Excess screening is then performed in all departments to determine if that person's capability can be used elsewhere. If a positive response is received, that person is transferred along with his custodial record and all changes entered into his accountable record in personnel. If a negative response is received, that person is processed without delay through disposition.

With this similarity between people and property system functions, wouldn't you think it would be obvious to companies that they should have equally effective control systems for these two major assets; that they would expend comparable amounts of time and money? Yes, but in reality property runs a very poor second. Why? Well, I'll say it one more time: The reason for this inconsistency in exercising management control is the inconspicuous nature of the cost of possession of property.

As an example, let us look at the costs associated with people. Consider that companies really lease people and the lease payment is the weekly paycheck. Here is a cost item that occurs weekly and is directly attributable to one particular individual. Could there be a more consistent reminder to management of the clearly identifiable cost associated with that person? No, management's attention then is clearly focused on this, expense. The employee's contribution to the company, therefore, will be constantly compared to his lease cost to justify his retention on the payroll. Can you imagine the property control system a company would establish if property costs were given similar exposure and consideration?

Let us now look at some of these property costs that we have been talking about. I have identified three types:

ACQUISITION COSTS — These costs appear in and are buried in a facilities budget which is established and approved basically once a year, with a quarterly review possible.

BORROWING COSTS — These are the interest charges on money borrowed to purchase property, or the cost of capital, where company funds are used. These costs are buried in the financial records of the company.

OPERATING COSTS — These are the costs of maintaining, calibrating, moving, storing, repairing, insuring, obsolescence, physical deterioration, etc. All these are buried in and a part of the operating budgets of the using departments of the company.

These costs appear infrequently before management and, for the most part, are not separately identifiable to a particular item. These property costs, then, are very much inconspicuous in nature and by comparison to other costs receive little management attention.

However, there is one final question which needs to be asked: Are these costs significant? And the answer is yes. For instance, at VSD we have approximately $80 million worth of company owned or leased plant equipment. What does it cost a company to keep that much property around? We have conducted studies that approximate this cost to be twenty percent of the acquisition value of the item in possession costs. For VSD this would amount to $16 million per year.

With this amount of costs involved, wouldn't you think it would be worthwhile for a company to establish a property control system that would accurately tell you what property you have, where it is, what condition it is in, who is using it, how much it is being used, and maybe, just maybe, how much you are not using and can process for disposition? Remembering that for every $1 you dispose of you save $.20, for every $1 million you save $200,000 and for every $5 million you dispose of you save the company $1 million per year.

This is the story you must convey to management if you really expect to obtain management support for the development of a truly effective property control system.

If securing management approval is the most difficult problem encountered in the development of a property system, the second most difficult problem would have to be Structuring the Property System. All too often, when the need for a new system becomes apparent, the initial action evolves into a discussion of who is going to do what before any serious consideration is given to determining what is to be done. This is especially true for a property system, because it cuts across almost all major functional and administrative organizations in a company.

Keeping our efforts in the proper order of priority, the job of structuring a property system can best be accomplished by performing the following tasks in the order given.

1. Identify and clearly define all property functions.
2. Sort these functions into logical groupings.
3. Assign the responsibility for performing these logical groupings.

These tasks appear deceptively simple. They are more easily said than done. The first task, identify and clearly define all property functions, we accomplished at VSD by surveying industry. We talked to many companies from coast to coast about proper-
functions together, reworking this list over and over again until we were satisfied the list contained the activities we wanted to include in our proposed system.

The second task, sort the functions into logical groupings, we accomplished concurrent with the reworking of the functions’ list. Figure I shows how the list came out, sorted into four logical groupings.

The Administrative Control functions provide a company with policy guidance. The Primary Control functions provide accountability. The Supporting Activities constitute the life cycle of property. The Custodial Control functions represent user requirements.

The third task, assign the responsibility for performing these logical groupings, should be attempted only by stout-hearted senior management, under a favorable horoscope, after carefully considering early retirement!

We can at our level, however, assist such people in making correct assignments. Looking then at the Custodial Control functions first, these are activities that can really be done best only by the organization that has physical control over the property item — so there is little argument here over who should do what. Each user must do these tasks independently under the direction of the administrative and primary control organizations.

Next, let's look at the Supporting Activities. These are performed essentially by organizations established specifically for each activity, so again there's little argument here over who should do what.

The Administrative Control functions could be performed by any one of several existing organizations in a company, but certainly not effectively; so again there's little logical argument against a central Property Administration group to do them.

That brings us down to the last grouping, the Primary Control functions. These functions are important in that they represent the heart of a property system, whereas the functions previously discussed represent the extremities, the arms, legs, fingers and toes.

In assigning the responsibilities for performing these functions, there are three alternatives.

1. Each property user perform his own.

2. One central property organization be established to perform all of them.

3. A combination of 1. and 2.

Alternative one, if implemented, will give you a property system that will be, to some extent, ineffective, inefficient, inconsistent and redundant. From a systems viewpoint, it is absolutely beautiful! But, from an organization viewpoint, it's absolute suicide!

The man who advocates this alternative could, in a worst-case, lose his job. If he doesn't, after awhile such an occurrence might seem a blessing. In a best-case situation, he might retain his job and merely lose all the friends he has in the company.

Alternative three, then, might be considered a reasonable compromise, allowing its supporters to keep their jobs and merely lose most of their friends. This alternative consists of reducing the number of organizations performing the primary control functions from some high figure to a manageable number between four and ten. It requires adapting basic property control.
control concepts to the particular company; that is, selecting the Primary Control organizations and the Custodial Control organizations and establishing the relationship between these control points.

Since automation is important in property control, let us examine briefly how you would automate each of these alternatives.

Alternative one would normally require separate systems; therefore, each user would develop, implement and operate his own system. However desirable or undesirable the end result might be, the automated systems themselves would present no major difficulty.

Alternative two would require the development of but one central record and data handling system, with one organization providing or controlling both input data and output information. This system would present no major technical problems to its creators.

Alternative three in its simplest form would require a data system for each of the Primary Control organizations (points). If we are intelligent enough to reduce the Primary Control points to a manageable number, however, surely we have the capability to devise a single automated system that would service more than one control point. Ideally one data system would service all primary control points.

The problem facing us with alternative three, then, is to develop an automated central record and data handling system that will provide service to as many Primary and Custodial Control points as possible, as well as Supporting Activities. If this were done, many of the advantages of alternative two could be incorporated.

A complication inherent with this alternative, though, is that the data input into the record by any one control point or supporting activity must not interfere with the data from any other control point or Supporting Activity. Gaps must be filled and redundancies avoided. This can be done, but it requires a level of technical sophistication in the systems design that is not required in the other alternatives. This is simply the price you have to pay for the political compromises made in selecting the system structure.

These then are the basic actions and alternatives that a company has available in developing a property control system. It is important to realize that these three steps in developing a property system must be completed before attempting automation. When and only when you have selected and implemented your system structure do you design your computer system. You then design your computer system around your selected property system structure.

At Vought Systems Division, we have selected alternative three as our system structure and have identified six Primary Control points, four major and two auxiliary. We are now in the process of developing an automated system that will provide, from a single record source, all the data processing requirements for two of the four major Primary Control points and several supporting activities and Custodial Control points.

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PROCEDURES AND THE SUGGESTION SYSTEM

By Thomas H. Knowles

An often overlooked aspect of suggestion systems administration is the need for detailed procedures that translate system policies and regulations into actual practice. Such desk-top procedures promote the orderly, objective processing of suggestions. They can minimize training time when turnover occurs in the system staff or when a new committee member is appointed. Desk-top procedures can also help avoid misinterpretation of policies and regulations, and can remind system personnel to do the little things — such as personally thanking a suggester for his idea — that keep participation growing.

Basically, a desk-top procedure is a document that tells a person or group of persons how to do a specific job or part of a job. It provides a detailed, step-by-step description of the work, commencing with a clearly defined starting point and ending with a clearly defined termination point.

As the name implies, this type of procedure typically is concerned with the actions that take place at a work station — a desk in many cases. But, it also may describe actions that are not associated with any particular workplace. The distinguishing feature of these procedures is the level of detail; they lead a person through a specific job.

DEVELOPING DESK TOP PROCEDURES

The development of desk-top procedures is not a difficult or mysterious process; but, there is a methodology. The methodology consists of analyzing the present system, effecting any desired changes and writing the procedures. In this paper the emphasis is placed on analyzing the system and writing the procedures. If the analytical techniques described below are used, most changes needed to improve the system will become obvious. Although this article is oriented towards the development of procedures for a suggestion system, the principles and techniques to be discussed are applicable to virtually any system that involves paperwork.

Ideally, the development of desk-top procedures should be approached as a cooperative venture with the supervisor — in this case, the suggestion system administrator — serving in a coordinative capacity. While it may be necessary for the administrator to develop some of the procedures, there are advantages to involving staff and committee members in this task. It provides them with an opportunity to express their perception of their responsibilities, and gives the administrator a chance to compare their perceptions with established policies, regulations and his own perceptions. Inconsistencies can be identified and resolved before problems occur. Developing a desk-top procedure also requires the staff or committee member to think about the way the job is performed. This self-analysis may reveal ways in which processing can be streamlined and made more efficient. Finally, involving staff/committee members in the development of the procedures usually will facilitate their acceptance of the procedures.

ANALYZING THE SYSTEM

The key to developing effective desk-top procedures is to break large jobs and complicated tasks into smaller jobs and uncomplicated tasks. This is why the starting and termination points of the procedure must be selected with care. If these points are too far apart, the procedure will not cover enough of the process to be useful. Consideration also should be given to selecting starting and termination points that are readily identifiable; this helps relate the procedure to the work and avoids confusion as to which procedure applies in a given situation.

Before attempting to select the starting and termination points for procedures, the processes to be covered by the procedures should be reviewed in detail. Normally, the amount of effort required to write the procedures is inversely proportional to the effort spent on the preliminary review of the system; a careful, thorough review of the system will make the writing of the procedures much easier. This is particularly true if a technique known as flow charting is used in conducting the review.

A flowchart is a diagram consisting of words and certain
symbols that describe the flow of work. It provides a way of showing the relationship between the various steps in a job and between related jobs. Because of this feature, flowcharts can bring order to what would otherwise be a bewildering mass of information. But, perhaps the best feature of flowcharts is that they are easy to construct once the symbols and their meanings are understood.

Symbols are used in flowcharts to draw attention to the kinds of activities and to any inactivity that take place in a given process. Also, the position of the symbols on the chart graphically portray the relationship of these activities or delays to the overall process. The flowcharting symbols defined by the American Society of Mechanical Engineers (ASME) are widely accepted as the industry standard. Exhibit 1 is an adaptation of these symbols for use in charting paperwork systems.

Prior to flowcharting a process, a block diagram should be constructed to show the basic system as a set of individual process blocks (see Exhibit 2). This shows the relationship of the various processes with respect to the overall system. Next, select a process (block) and determine its starting and termination points. Do this for each block in the system. Try to select starting and termination points that other persons can identify readily.

Now, the actual flowcharting can begin. A process is chosen and, commencing at the previously determined starting point, the activities of the process are sequentially followed through — and diagrammed — to the termination point. The diagram may branch into several channels, especially if there is any decision-making activity occurring in the process. This may result in the diagram having several secondary termination points. It also is possible for the diagram to have several secondary starting points if other inputs occur during the process. Exhibit 3 is an illustration of a flowchart with some of these features.

Here are some things to consider when constructing a flowchart.

- Use lined computer printout paper to draw the chart.
- It provides ample room and the preprinted lines help keep the chart neat.
- Describe each activity with concise phrases that start with a verb.
- Label each leg of a branch.
- Describe the starting and termination points.
- Label the flowchart with a descriptive title, the name of the person who drew it and the date it was drawn.
- Try to be neat. Use a flowchart symbol template (obtainable at any drafting supply store).

Once the flowchart is completed, it should be checked to ensure that it is accurate and that all activities occurring in the process have been included. Ways of streamlining the process should be very evident on the chart; look for unnecessary steps and avoidable delays.

To convert a flowchart to a procedure, simply list the steps in the sequence shown on the flowchart and modify the activity narrative as necessary to adequately describe the action. At this point, all pertinent information about the system should be known. Now, this information needs to be presented in a clear and concise manner so that a person unfamiliar with the system can understand it readily.

WRITING THE PROCEDURES

When writing a desk-top procedure, it is important to keep in mind who will read it and why. The audience can be thought of as a member of the staff or committee who wants to learn a particular part of the routine for processing suggestions. The writer's purpose is to explain the process as specifically and as clearly as possible. Plain language should be used; no flowery, obscure, or overly complicated words — just plain talk. The message should be stated as directly as possible without long-winded explanations. With care, the procedure can be made warm and personal; use second person pronouns wherever appropriate.

A consistent format should be used for all desk-top procedures, arranged so that the document is clearly labeled as...
an office procedure. Limit the amount of heading information to the barest essentials. The date that the procedure was issued should be shown. Each page should be identified with a page number and the page total. The title of the procedure should appear in a conspicuous location on each page. Select a title that uniquely identifies the procedure and that, generally, describes the process covered by the procedure. The heading material and the body of the procedure should be arranged on the page to give an uncluttered appearance that invites reading. Exhibit 4 is an example of a desk-top procedure that incorporates these features.

In describing the steps of a process, the following techniques have been found to avoid confusion and add to reading convenience.

- Provide a brief introductory statement that clearly identifies when the process starts.
- Plainly list each element as a distinct step with each step sequentially numbered to indicate the order in which the work is to be performed.
- Always end with the last step describing the termination point.
- If an abbreviation is to be used repeatedly, the first time it appears state the title or phrase in full followed immediately by the abbreviated form enclosed by parenthesis; for example: “State Awards Committee (SAC).”
- When forms are involved, indicate where they come from or where to obtain them, what is done with them and how they are to be distributed or filed. Be sure to account for the original and all copies. Identify each form involved by its title and form number, if it has one.
- Mention the location of files, reference materials or other items if it will add to the clarity of the procedure.
- If references are cited in the procedure, give the full title or description of the reference the first time it is mentioned, then subsequently refer to it with an abbreviated title. For example: “The State Awards Committee Policy Manual (September, 1971)” would appear in full the first time it was mentioned; subsequently, it could be referred to as the “Committee Manual.”

For reading convenience, all desk-top procedures for a given staff or committee member should be kept in a loose-leaf binder and retained by the individual. The procedures will remain legible indefinitely if each page is placed in transparent plastic jacket.

The suggestion system administrator should maintain a master copy of all the procedures. The first page of each procedure in the master copy should contain a list of the staff/committee members who use that particular procedure. New procedures and any changes to existing procedures should be approved by the administrator with the concurrence of the committee — if the system incorporates one. The administrator should see that the new procedures and changes are disseminated to all persons who use them and to the master copy file.

CONCLUSION

Desk-top procedures should be an integral part of every suggestion system. They should be developed with the needs of the user in mind. Clarity, accuracy and consistency are the prime objectives. Their development will require the investment of some time and effort. With care and attention to detail, this investment will be returned many times in terms of decreased processing time, reduced training time, and a better understanding of the operation of the suggestion system by all concerned.

EXHIBIT 1
FLOWCHARTING SYMBOLS

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>▲</td>
<td>Starting point — Identifies where the channel or flow starts.</td>
</tr>
<tr>
<td>□</td>
<td>Operation — Includes typing, writing, opening envelopes and tasks not covered by other symbols.</td>
</tr>
<tr>
<td>►</td>
<td>Transportation — Includes moving things from one location to another, such as sending a form to another office.</td>
</tr>
<tr>
<td>▼</td>
<td>Decision or Multiple Operations — Includes sorting and decision-making functions. Usually precedes a branch in the flow.</td>
</tr>
<tr>
<td>◾</td>
<td>Delay — Includes delays or periods of inactivity that occur during the process. These may be either avoidable or unavoidable.</td>
</tr>
<tr>
<td>▼</td>
<td>File — Identifies any type of filing operation.</td>
</tr>
<tr>
<td>◾</td>
<td>Termination Point — Indicates where the channel or flow ends.</td>
</tr>
</tbody>
</table>

EXHIBIT 2
PROCESS BLOCK DIAGRAM

```
Assignment of Suggestion Process 1

Evaluation of Suggestion Process 2

Meeting Scheduling and Agenda Preparation Process 4

Post Evaluation Processing Process 3
```
EXHIBIT 3
FLOWCHART EXAMPLE

Arrange Meeting
and
Prepare Agenda
Process 4
S. Smith 4/1/73

Day before committee meeting prepare agenda and arrange next meeting.

1. Contact chairman, determine next meeting date. See if he has any announcements for agenda.

2. Obtain outstanding suggestion folders from file.

3. Select one folder, refer to assignment form, determine if suggestion was assigned more than two weeks ago.

If yes, go to step 4. If no, go to step 7.

4. Write down the number of the suggestion and the evaluator’s name.

5. Aside the folder, return to step three if more folders. If not, proceed to next step.


7. Type the agenda, refer to past agendas in file for format.

Orig. Agenda

8. Send to chairman

Copy


Copy in file.

Continued on next page
Three years ago we took a chance and she turned out to be one of our best investments.

When Maggie applied for the job, we had reservations about hiring her. That was three years ago and she has long since proved herself one of the most energetic and successful employees we have.

EXHIBIT 4

EXAMPLE OF A DESK-TOP PROCEDURE

ASSIGNING STATE AWARDS SUGGESTIONS

Standard Office Practice
12/10/73
Page 1 of 1

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open envelope and remove the suggestions.</td>
</tr>
<tr>
<td>2</td>
<td>Check the suggestions to see that all materials are present — if pages appear to be missing, call State coordinator’s office.</td>
</tr>
<tr>
<td>3</td>
<td>Prepare a folder for each suggestion. Be sure to label folder with suggestion number above the suggester’s name.</td>
</tr>
<tr>
<td>4</td>
<td>Obtain mimeograph assignment memo forms (lower left-hand drawer in desk).</td>
</tr>
<tr>
<td>5</td>
<td>Go through the committee member’s assignment cards (located in file-card box on top of desk) and select members to evaluate suggestions. Try to assign each member an equal number of suggestions to evaluate. Note, if you have any questions as to whom a suggestion should be assigned, see the director.</td>
</tr>
<tr>
<td>6</td>
<td>As you assign suggestions to members, record the suggestion number on the member’s assignment card and prepare the assignment memo (type in member’s name, suggestion number and response date).</td>
</tr>
<tr>
<td>7</td>
<td>Obtain 8½ x 11 mailing envelopes from supply cabinet and evaluation report forms (lower compartment of cabinet behind desk).</td>
</tr>
<tr>
<td>8</td>
<td>Address an envelope to a member and insert the following: Assignment memo Suggestion Blank evaluation report form</td>
</tr>
<tr>
<td>9</td>
<td>Place copy of the assignment memo in the suggestion folder and place the folder in the file (series 8 section).</td>
</tr>
<tr>
<td>10</td>
<td>Repeat steps 8 and 9 until all suggestions have been processed, then seal the envelopes and place them in the “out” box for mailing. [P]</td>
</tr>
</tbody>
</table>
FOR BETTER MORALE —
PAY ATTENTION TO NEW EMPLOYEES

"For the past two decades," says industrial engineer John W. Moran, "managers have tried participative management techniques and increased benefits to upgrade morale, only to find that the workers were still discontented."

As a teacher of Personnel Management and Techniques of Supervision at Rivier College (Nashua, N.H.), Moran decided to check out a newer theory: that the way people are treated on the job, rather than monotony of the work itself, is the true source of employee dissatisfaction.

Students were assigned to find out how new workers were treated on the first day of employment. They interviewed 510 persons who had recently been employed in a variety of positions, ranging from managerial to hourly paid, in industry, government agencies and private institutions.

SUPERVISORS DON'T CARE

"We found," Moran reports, "that most supervisors are interested only in getting the person to work as soon as possible, without wasting time on non-essential details such as orientation."

Eighty percent of the interviewees reported that they received very little orientation from their immediate supervisors. Each recalled having received most of the information concerning the job, company benefits and company policies from fellow workers. Usually it was one of the old-timers who helped the new person get started. Usually a negative attitude about the company was transmitted in the process. And usually the new employee discovered later that the veteran had given out a good deal of misinformation.

WHAT THE NEW ONES WANT TO KNOW

The student interviewers asked these recently hired employees what their immediate supervisor should have supplied in the way of orientation during the first few days. The responses emphasized:

- Introduction to fellow employees.
- Explanation of company benefits, policies and security regulations.
- Overview of company.
- Explanation of department's objectives, duties and structure.
- Explanation of job duties and performance expected.
- Explanation of support groups.

Continued on page 32

PRODUCTIVITY & PERFORMANCE IMPROVEMENT CONFERENCE
February 6, 1975
Los Angeles Hilton Hotel

Rising costs, shrinking profits, diminishing sales, mean one thing — PRODUCTIVITY MUST BE IMPROVED. Productivity improvement in 1975 will be impacted through an imaginative approach to the full utilization of people resources.

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Registration begins at 8:30 a.m. Meeting begins at 9:00 a.m. until 3:00 p.m. and includes lunch. Advance registration is $15 prior to January 20, 1975; $20 at the door. Send check or money order to: Mrs. Adela Harris, Services Division 322/M-190, Hughes Aircraft Company, Culver City, California 90230.

For additional information call Joe Martelli, American Medicorp, (213) 390-8066

Guest speaker will be Donald Johnson, Deputy Assistant Secretary for domestic and International Business Administration, U.S. Department of Commerce. His address is entitled, "The Administration's Economic Policy And The Important Role Of Productivity In That Policy."
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California residents add 66 cents for each hat ordered: $

Total remitted: $

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Address__________________________________________

City________________________State________Zip____

(Please print plainly)

BETTER MORALE
Continued from page 31

Explanation of advancement and pay opportunities.
Explanation of how the job to be performed fits into the final product.
Tour of the plant facility.
Introduction to general supervisor and department manager.
Information concerning lunches, breaks, parking.
Medical department information.
Telephone number and name of person to call when out sick.
Emergency information concerning fire, bomb threats, etc.

“Our list is not very long,” Moran says, “and perhaps every manager thinks his first-line supervisors or the personnel department are covering these items with new employees. The student interviews showed, however, that this responsibility is bypassed in the majority of cases.”

One of the interviewers (all of whom were evening students) found an employee in his own company who had been there two weeks and did not know where the cafeteria was. By the time his project was finished, this student had found that many of his co-workers were lacking even the most basic information on company policies, procedures, organizational structure and advancement opportunities.

TIPS FOR MANAGEMENT

“Managers,” Moran advises, “should re-emphasize to supervisors the importance of giving new employees a good orientation.

“Each supervisor should have a checklist of items to be covered, be knowledgeable about all applicable policies and benefits, and conduct the orientation in an organized manner with real interest. By doing this, the supervisor will make a good first impression for himself and the company.”

Further, Moran recommends at least two followup sessions during the first month, so that the supervisor may answer any questions and clear up any misunderstandings the employee may have.

Supervisors who are reluctant to devote time and effort to this are making a mistake, Moran believes. His study indicates that careful orientation would pay off in higher employee morale from the very first day. [P]
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Planning seminar on productivity and performance improvement techniques in Los Angeles are (L to R) Adela Harris, Hughes Aircraft Company; Eric Silberstien, district director, U.S. Department of Commerce; Bill Bailey, HITCO Corporation; Mike Richardson, The Boeing Company; and Joe Martelli, American Medicorp. The one-day conference, set for February 6, 1975, at the Los Angeles Hilton, is co-sponsored by the Department of Commerce and the American Society For Performance Improvement.

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