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FEATURES:

Evolution In The U.S. Construction Industry .......... Arthur F. Sampson 7
Feedback: Results Of The 1975 NASS Membership Survey . . . Robert E. Slough, Jr. 11
Inefficiency: The Reasons Why ......................... Douglas L. Bartley 16
Managing By Cost ........................................ Donald E. Parker 18
FAST Diagramming And Multiple Functional Analysis .......... C.E. Tammadge 25
The Japanese Quality Circle ................................ Frank H. Squires 32

DEPARTMENTS:

Performance Update .................................... 5
Comment: Where Do We Go From Here? ............... Robert K. Wilmouth 28

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Contributions in the form of articles, photos, letters to the editor, etc., are welcome. Editorial policy dictates the right to edit or reject any material submitted for publication. Views and comments of contributors do not necessarily constitute the endorsement or opinion of the American Society For Performance Improvement, the Society of American Value Engineers, the National Association of Suggestion Systems, nor that of the National Property Management Association.

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GLAD HAND EMPLOYEE RECOGNITION AWARD

Realco Services, Incorporated, and I/W Leasing, Incorporated, two Chicago-based railroad piggyback trailer and over-the-road trailer leasing companies, recently introduced an employee recognition program called the Glad Hand Award. A walnut, pen-calendar desk set, it features an actual trailer glad hand. A glad hand is the piece of hardware mounted on the front end of a trailer to which the air hoses from the tractor-truck, that operate the trailer's air brake system, are connected.

Purpose of the Realco-I/W Glad Hand Award is to recognize company employees — supervisory personnel and below — for outstanding on-the-job performance and/or community activities. According to Realco-I/W President Robert Budorick, "Outstanding employees have built our company's track record based on a reputation of good, old-fashioned hard work and service to our customers. The Glad Hand Award is one way the company can thank top employees for a job well done."

To qualify for the Glad Hand Award and a $25 gift certificate, company employees must be nominated in writing by their fellow employees. The nomination must cite a specific example of superior, customer-related job performance, an idea or suggestion resulting in reduced company operating costs and/or outstanding service in community activities. The nominations are reviewed and winners selected quarterly by a committee comprised of fellow employees.

PRESIDENT’S “E” AWARD TO DATAPoint

Datapoint Corporation was the recipient September 8 of the President’s “E” Award for Export by the U.S. Department of Commerce. The award was made on behalf of the Secretary of Commerce and in the name of the President of the United States. James A. Baker, III, Under Secretary of Commerce, made a formal presentation of the coveted award to Datapoint chief executive officer Harold E. O’Kelly.

The award to the San Antonio, Texas, headquartered computer manufacturer was made in recognition of company efforts to expand international trade and their successful results achieved over a three-year period. In accepting the government’s certificate of achievement and accompanying “E” flag, O’Kelly pointed out that although the computer company is only seven years old, it moved quickly into foreign markets through a unique exclusive international distributorship arrangement with TRW, Incorporated.

Continued on next page
UPDATE
Continued from page 5

Export revenues in 1971 represented only seven percent of the company's total revenues. In 1972 exports accounted for twenty-one percent of total revenues of $1.1 million. In 1973 they jumped to fifty-three percent or $9.9 million. By 1974, the last full year reported by the company, export revenues had jumped to $17.6 million, representing fifty-two percent of total revenues.

Datapoint Corporation has grown to be a leading independent producer of dispersed business data processing systems marketed worldwide for intelligent data entry, multi-location DATASHARE terminal and processor applications and complete stand-alone small-to-medium size business computer systems.

INTERNATIONAL SAVE CONFERENCE
Against the prevailing background of inflation/recession, the Chesapeake Chapter of the Society of American Value Engineers in Baltimore, Maryland, staged a most successful International Conference at the Hilton Hotel in May 1975. Preparations began in December of 1970, before Baltimore was chosen host city by the National Board of Directors of SAVE, with Walter L. Wichita selected by the local chapter as conference chairman.

Even though SAVE is a comparatively small professional society, more than five hundred people from the United States and Europe attended; including exhibitors, conference enrollees, guest speakers, wives and members of the local chapter. Additionally, there was an unprecedented sellout of all exhibition space allotted by the hotel.

Speaking to future conference planners, Wichita advises: “Get to work on your large expense items as soon as possible. Hotel accommodations, with all the ramifications of accessibility, comfort, convenience, etc., can make or break a conference. Have all commitments down on paper. It was only after prolonged months of getting cost estimates and personally checking out individual facilities that we were able to present a plan that was acceptable to our chapter and the National Society. The very day you are informed that your chapter or city is to host a conference, begin planning! Draft responsible leaders to carry out the innumerable and painstaking tasks inherent in this type of undertaking. Our Chesapeake Chapter of the Society of American Value Engineers had outstanding cooperation and teamwork. From the very beginning, we knew we could rely upon the individuals chosen to chair the strategic committees.”

The next International Conference of SAVE is scheduled to be held in late spring of 1976 in Minneapolis, Minnesota. The Twin Cities Chapter already is deep in the planning processes for this 1976 Conference. — Mary Jane Wichita

FREE BROCHURE DESCRIBES JOB-FINDING METHODS FOR ENGINEERS AND EXECUTIVES
A type of resume that demonstrates a person’s true abilities more effectively than the traditional resume is one of the new methods described in a brochure published by Edlund-Cather, Incorporated, New York, N.Y., an executive career consultant firm. The brochure also describes improvements in each of the seven major steps in the job-finding process. It gives tips on a variety of sales letters and other tools to reach seventeen sources of job leads, plus methods of offsetting such liabilities as age or lack of specific experience required by an employer.

Techniques for anticipating at least seventy percent of what will happen during a job interview and preparing for it in advance also are covered, plus methods for turning interviews into job offers by new follow-up methods. Free copies of the brochure are available from Michel-Cather, Incorporated, 488 Madison Avenue, New York, N.Y. 10022.

PRODUCT LIABILITY PREVENTION SEMINAR
The chairman of the annual Product Liability Prevention Seminar brought the meeting’s sixth session to a close with a plea for a multi-disciplinary attack on unreasonably dangerous products. “There is no longer an excuse in ethics, in law or in technology,” the chairman, Professor Richard M. Jacobs, said, “for the presence of patently unsafe products in the marketplace. Compared with the out-of-pocket cost of product recalls and of damage payments, and compared with the cost of product-induced suffering, the cost of safe products is low.”

Other speakers at the seminar in Hasbrouck Heights, New Jersey, held under the auspices of the Division of Continuing Engineering Studies of the New Jersey Institute of Technology, echoed Professor Jacobs’ theme. Said Alfred S. Julien, chairman of the Products Liability Committee of the Association of Trial Lawyers of America: “It’s cheaper to pay for safety devices, which enter into the price of a product anyway, than to try to meet a jury’s evaluation of what a maiming or a death may be worth.” A member of the New York firm of Julien and Schlesinger and a professor of law at the New York Law School, Julien said that in an era of consumerism “manufacturers of all commodities are now duty-bound to constantly revise their safety proce-

The parents were angry when she was hired. Now they’re glad she took the job.

The Twin Cities Chapter already is deep in the planning processes for this 1976 Conference. — Mary Jane Wichita

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I want to talk today on a somewhat different level than the other speakers — on a more general level. I want to talk about the forces at work in the U.S. construction industry today and how, in my view, those forces are going to change the industry.

All that is a little bit presumptuous on two counts. First, I'm not here representing the entire construction industry of my country — it may be too large and diverse for any individual to represent it in any case. Second, I'm not even a professional in the building business; that hasn't been the bulk of my experience.

I was trained as an accountant and a corporation executive, spent seven years in state government and came to Washington, D.C., as a generalist, a manager. But I'm going to talk about construction anyway. I've never been accused of being too shy. And I have had experience in the field — several very intense years as the commissioner of GSA's Public Building Service and a
continuing involvement with GSA's building program as the current head of
the agency.

Let me proceed in this way: First, I want to talk about the experience I
had in PBS; what I learned and the ways in which the organization changed. Then let me extend my remarks to the whole construction industry in the United States and the forces which I see acting today most strongly on that industry. Finally, I will go still further afield, into an area more open to speculation and individual interpretation: What are the long-range effects of forces operating on the industry? How will it respond? How will it evolve?

First, about the Public Buildings Service: PBS is a major builder and the
largest landlord in the United States with 1700 construction projects
underway, a billion-dollar budget, 22,000 employees and an inventory of
a quarter of a billion square feet of space all over the country. And PBS
was a manager's nightmare, with odd lots of master plumbers and architects,
guards and real estate experts and a host of others scattered around the
country in a rigid hierarchy.

Performance was poor. It was taking PBS sixty-four months to complete
the design and construction of a $10 million building — a building that private
industry, an International Business Machines or a General Electric,
could complete in twenty-four months. And it wasn't that our buildings were that much more complex or well designed — they weren't.

And the organization of PBS at the time was no help either. It was based on
separate skills, on geography, on personalities - none of which, of
course, have anything to do with getting a building built well and on
time. Getting new ideas and new cooperation into this kind of rigid
organization was extremely difficult.

Let me give you an idea how we changed the Public Buildings Service. These changes, starting in 1969, form the foundation for the way we operate today and they are paralleled by changes taking place in the U.S. construction industry as a whole.

Two documents were used as the blueprint for making these changes. First was a report on construction contracting systems then in use. The report recommended sweeping changes in the way in which PBS contracted and managed the design and construction services. It served as the basis for our developing project management and construction management techniques. That document brought PBS out from behind the scenes and behind the times and made it the visible and progressive force in the construction industry that it is today.

The second document may result in even more dramatic change in the long run. That was a performance specification for office buildings. That has led us already into a multi-million dollar commitment to the use of building systems in construction and profound philosophical changes in the way we view buildings and the building process.

As we began to make some fundamental changes in PBS operations, we also began to look around at our partners in the private sector, to look at the U.S. construction industry as a whole. What we saw was not very encouraging. One central image emerged.

The U.S. construction industry is incredibly fragmented. It is the largest industry in America, 140 billion dollars, eleven percent of our gross national product, bigger than the auto or steel industries. But much, much more diversified.

There are over 800,000 firms in the U.S. construction industry. But only a
little more than a third of these establishments maintain a permanent payroll. And, of these, most have only one to four employees. It's a giant industry of small businessmen.

It could be argued that this diversity is characteristic of a healthy, competitive free-market situation. And to some degree that is true. But it has some serious negative features.

For one thing, the industry as a whole has not yet found a creative balance between public and private interest. There is precious little discussion of the impact of construction on minorities, on the quality of life in our communities, on the duty of construction in helping us meet national goals. This has been changing recently. And PBS has been pushing for this kind of change. We are using our purchasing power and position in the industry in progressive ways — assisting minorities, helping the handicapped, improving the social, economic and cultural environment in communities where the federal government has a presence.

I have stressed this public interest theme in statements and speeches and
meetings over the past several years. Either the private construction industry must take positive action in these areas, improving its record of public service, or it very likely will face increasing government regulation.

Another disadvantage of diversity is the fact that there is little real improvement in the output of the industry over time. The fact that many firms in the industry work on a project-by-project basis, always as consultants of a sort, always with a new set of partners, puts limits on their productivity.

In the highly diversified scramble today, there is little shared experience and feedback. There is much duplication of effort, ignorance and reinvention. Again, this is changing to some degree. The construction industry trade press in the United States, in my experience, has become much more professional and much more potent over the past few years. It is beginning to serve as an information exchange.

And the Public Buildings Service has turned to the media in a very conscious fashion. We are actively reporting on our program, not for public relations purposes, but to share experience with the industry and to improve the output of the industry.

The fragmentation of this industry has one further disadvantage. That is, there is very little research and development going on by private firms. Small firms simply can't afford it. And experimentation in a highly competitive marketplace is not very palatable.

There is government research going on and PBS has a program of research. We are providing to the industry models of fire safety, energy conservation and building systems. But that's not enough. Until research becomes realistic for private firms, I think that technological progress in building can only be at best slow and steady.

Perhaps the biggest drawback of all in the current scattered state of the
U.S. construction industry is the fact that it's not being managed well. It can't be, really, because there is no place on the building team as it's constituted today for a general, well-rounded manager. The owner, the architect, the builder — no one has a license to manage the whole building process.

These are the difficulties that I see in the U.S. construction industry today: its lack of public purpose, the low levels of information exchange and experimentation, the absence of management. These aren't unique to the United States. I would guess they are problems shared by other countries.

But these are structural problems. They are derived from the project-by-
project nature of the construction process, from the nature of the building team as a loose assembly of consultants, from the diversity of the industry.

These are not the forces which I mentioned earlier. They are the by-products of the way we do business today. They do not in themselves push the industry to change and modernize.
But there are forces pushing for change in construction, forces largely external to the industry itself. Let's take a look at those forces and the changes they may create.

First on anybody's laundry list—a powerful and perceptible force at work on the construction industry: Inflation. Even words like skyrocket and spiraling become clichés if they are used enough—and used they have been in the past few years.

No examples, no figures are needed to illustrate the effect of inflation on construction. Every listener will have his own horror stories to supply—projects abandoned or stalled, or trimmed way back; unbelievable bids. There is a shared desperation and frustration today as designers watch quality and interest erased from their projects, as owners watch their buildings shrink before their very eyes, as contractors watch their profits melt away as prices rise.

Coupled with this inflationary force is increasing demand for buildings of all sorts. Together they mean a constant struggle for the construction industry, a struggle to get more for less. And this is a force that will continue. For the time being and the foreseeable future, it will continue to be news when a building is completed within its budget.

A second major force on the industry today is the growth of a conservation ethic. Posters design in our country, like our lifestyle itself, has been developed on the premise of energy consumption rather than energy conservation. Light structures, walls of glass, heavily heated, cooled and lighted homes and offices with every imaginable energy-saving—that is, human energy-saving devices built in—that is the legacy of the past three decades. That is not a special fault of designers or builders. They shared a blissful ignorance with the rest of us—ignorance of our sources of energy, of the fact that our energy was cheap, of the fact that all that could change someday.

Well, all that has changed today—and for all time. Material shortages, although they are not major at this point, could add pressure to the industry.

There is an awareness growing in the industry that first cost is not the only cost—or even the major cost involved. We are realizing that we can identify the costs associated with energy use, with the long-term commitment of resources that is involved in building, with the efficiency and flexibility of space. Techniques like value management and life-cycle costing are beginning to be used, but both need a great deal of refinement.

This conservation ethic, like the inflationary pressures on the construction industry are going to force changes in the way we build.

The third and perhaps the most important force on the construction industry in the United States today is a force that I will call the educated client.

By client, I mean both the owners of buildings and the users. Users are demanding even more, both individually and collectively through government, of the buildings built around them. More than ever before, our buildings must be socially, environmentally, culturally and aesthetically desirable. And it's getting harder all the time to satisfy those goals simultaneously on any given project.

Owners, on the other hand, are pushing for economy and efficiency. They always have. But the building industry hasn't often responded. So owners today are looking for and finding alternatives to the traditional ways of building. PBS is a major owner and we are demanding more and experimenting more than ever before.

 Owners are more sophisticated today—government builders and corporations, hospital boards and even home buyers. They have been burned before by cost overruns and delays. They are looking for the firms and techniques that are going to deliver buildings on time and within a budget.

These are the three major forces on the construction industry, then, in my view: inflation, a new conservation ethic and more demanding owners and users. They are forcing the industry to change its ways.

That brings me finally to the title of my talk, "Evolution in the U.S. Construction Industry." How are these forces going to change the industry? How will it evolve over time?

The industry has two responses. Reacting to inflation, energy and other shortages, demanding owners and users, the industry can either improve its technology or its organization.

I personally believe that technology will evolve, that the future of the industry is in the factory. The more work that's taken off the site and put under cover and under control, the more productive the economical building will become.

I see a trend toward increased quality control in building. Life-cycle costing and performance specification are leading us in this direction. They are leading us away from the acquisition-cost concept, a concept that has resulted in buildings of uneven or marginal quality.

Fundamentally, I believe there will be a whole new marketplace for building products in the future. The systems approach will identify major building components and their inter-actions. They will be evaluated by such new criteria as fire safety or energy efficiency or total life-cycle cost. Performance specification will create a climate in which innovation can take place.

And, programs like value management will reward innovation.

The result will, in my view, be higher quality products working together more efficiently and requiring less maintenance. This move to quality control responds to the forces of inflation, conservation and more sophisticated owners. And it will be reinforced by increasing mechanization and new organization of the building process.

The pressures on the industry today all foster the creation of a new kind of organization in the construction industry, an organization that is large enough and broad based enough to deliver buildings on time, within their budgets and without sacrificing quality.

These firms can be organized in many different ways. But I think the likely form is a corporation. A corporation because that has proven the most workable format for assembling diverse talents. A private corporation that can raise capital.

These organizations will be full-service construction corporations which will provide an owner with planning, programming, design, financing, construction, management, insurance and maintenance services. In short, they will give the owner a single source to deal with—one-step shopping for projects of any kind or scale.

That is what I see as the major change coming in the construction industry in the next ten years.

You can see the process beginning now: professional firms issuing stock to raise capital and take an ownership position on projects; other professional firms being bought out; some major builders already supporting research programs today and putting their new ideas into practice; firms producing production facilities from start to finish—oil plants, power plants, manufacturing plants anywhere in the world; major corporations getting involved in recreational developments, in housing and in new towns.

The movement to assemble and incorporate design and construction skills of all kinds has begun. And the firms that are following this course, diversifying their skills, are being recognized and rewarded. For example, a recent ten percent increase
CONSTRUCTION INDUSTRY
Continued from page 9

in total A-E billings went primarily to the biggest firms, the multi-disciplined firms.

The creation of building corporations is underway. And these organizations will be similar to those making cars or steel or chemicals. Similar in structure, similar in function and even similar in management.

As I see it, the characteristics of these corporations will be as follows:

They will be multinational, doing business and basing themselves in a number of countries. The export of American construction expertise has grown markedly this past year, fueled by petrodollars. Export of construction last year was up thirty-seven percent to seventy-five billion dollars.

They will have capital. They will develop and market their own projects.

They will provide complete services — planning, financing, real estate, design, construction management and marketing.

Most important, these corporations will be productive, building better, faster and less expensively.

Inflation, the conservation ethic and sophisticated clients are today making the construction marketplace more competitive than it has been before. And competition is an evolutionary process. It’s not a popularity contest. It has no moral principles. And, above all, it doesn’t respect the past.

Some of today’s firms will grow in size and will widen their expertise through mergers. Others, of course, will disappear in those mergers or lose their competitive edge and fail outright.

The new, higher-order construction organizations will sell stock to take an ownership position on projects, to finance the development of business, and to pay for research which will keep them one jump ahead.

The end product of this evolution will be a true building corporation — international, profit-making, planning and delivering and operating facilities of all kinds.

All that I’ve said is not so revolutionary. It is not science fiction. It is the logical result of forces on the industry, the outgrowth of the changes already taking place, the new ideas that others have talked about today.

Just five years ago, the concept of truly managing construction was really visionary. Today, we turn our full attention to it. The tomorrow I have predicted for the construction industry is not so far off after all.
The rationale behind the conduct of a membership survey is the assessment of the needs and wants of the people who make up the membership of that organization. One of the reasons for the existence of an organization such as the National Association of Suggestion Systems is to offer programs and services that are responsive to its members and meet their needs. The survey is, certainly, one good way for an organization to produce data about members and their needs that allows it to be responsive.

This article reports the results of the 1975 survey and deals with an assessment of the importance to members of the various services of NASS; various aspects of the NASS national conference, chapters, workshops and innovation groups; and an assessment of members' needs or preferences for topics to be presented at conferences and workshops.

The Sample of Respondents

Following is a description of the responses to the survey questionnaire mailed to all members in February 1975:

A total of 134 members responded. This is approximately twenty percent of the total membership at the time the questionnaire was mailed to members.

Of the total 134 responses, thirty-two (twenty-four percent) were affiliated with government organizations — city, state, national — and 102 (seventy-six percent) were affiliated with various types of business and industrial organizations.

Of the total 134 responses, thirty-one (twenty-three percent) had been associated with a suggestion program for one to two years; twenty-eight (twenty-one percent) from two to five years; sixty-five (forty-nine percent) for over five years. Ten members (seven percent) did not indicate their length of experience with suggestion programs.

It seemed that the above categories of members — government or business/industry affiliation and length of association with suggestion programs — should be looked at separately for commonalities and/or differences. This appeared to be a logical breakdown of responses, since needs, preferences and value for the various services of NASS could vary because of length of familiarity with suggestion programs or due to possible unique differences in government and industry programs.

In addition to total responses, the results of the above categories of members are reported where warranted.

A Rating of the Services of NASS

The questionnaire asked that the member rate each of the services of NASS as to its importance. He/she was asked to indicate whether or not the service was Extremely Important to her/him, Quite Important, Somewhat Important, Slightly Important or Not At All Important.

Figure 1 shows each of the services of NASS. For each service the percent of respondents who rated it Extremely Important or Quite Important is shown. The services are listed in rank order of their importance to the membership.
Figure 1 indicates that all NASS services are important to a significant number of members. All but two of the services are important to over one-half of the members. The four most universally important services are the Statistical Report, the Annual Conference, the Publications, and the Specialized Booklets offered by NASS.

Write-in comments indicate that the Management Advisory Service and the Reference Library need to be publicized, as many indicate a lack of familiarity with these services.

Figures 2 and 3 show the same information as in Figure 1, broken down by organizational affiliation and by length of time associated with a suggestion program.

As a rule of thumb, if a difference of ten percent or more is significant, Figure 2 shows the Statistical Report to be more important to industry members than to government affiliated members; the Newsletter more important to government members; Chapters, the Membership Roster and the Reference Library more important to industry members. The average rating of importance of NASS services is about the same for industry and government members.

Figure 3 shows that, on the average, the services of NASS are important to members regardless of their length of association with a suggestion program. However, there are differences when specific services are considered, some of which are:

Even though every service is rated important by a significant number of members, the basic help services — Consultation Service, Management Advisory Service, Reference Library — are more important to the less-experienced members than to the more experienced.

The two to five-year members more frequently say that Publications, the Newsletter, Chapters, Seminars/Workshops, NASSPAK are important to them.

The over five-year members give greater importance ratings to the Annual Conference, Chapters, the Membership Roster, and the Certification Program.

The Annual Conference
Several questions dealt with aspects of the Annual Conference as follows:

Do you prefer a metropolitan city or smaller city as a site for the Annual Conference?

Eighty-seven percent opted for a metropolitan city

Please list three locations where your firm/organization would sponsor your attendance at the Annual Conference. Over forty sites were mentioned. The five cities that received the highest frequency of mention were:

Chicago, New York, Washington, D.C., San Francisco, Detroit

The following results were obtained regarding the length of the Annual Conference:

Three percent want a one-day conference, twenty percent two-day, fifty percent three-day, twenty-eight percent four-day
The preferred date for the Annual Conference is as follows (month and percent):

January 0, February 3, March 5, April 5, May 13, June 3, July 0, August 3, September 23, October 37, November 8, December 0

Preference for a keynote speaker is as follows:

Twenty-three prefer a speaker from the behavioral sciences area, thirty-one percent from business, seven percent from government, thirty-eight percent want a motivational speaker and one percent religion

A number of excellent speakers were suggested by the members. This list will be used in planning future conferences.

A number of excellent suggestions for a conference theme were given. These will be used in planning future conferences.

In answer to the question, "Are you planning to attend the 1975 Conference in Chicago?" sixty-nine percent said "Yes."

A Rating of Topics Important for Conferences and Workshops

Nineteen topics of possible importance as subjects for Conferences and Workshops were presented in the questionnaire. The members were asked to rate them according to their importance — Extremely Important to me, Quite Important, Somewhat Important, Slightly Important, Not at all Important to me.

Figure 4 shows the rank of importance for the total group of respondents.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Percent who say</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Participation Improvement</td>
<td>88</td>
</tr>
<tr>
<td>Evaluation Procedures</td>
<td>88</td>
</tr>
<tr>
<td>Suggestion Quality Improvement</td>
<td>87</td>
</tr>
<tr>
<td>Supervisory Support</td>
<td>86</td>
</tr>
<tr>
<td>Suggestions &amp; Productivity</td>
<td>83</td>
</tr>
<tr>
<td>General Publicity/Promotion</td>
<td>75</td>
</tr>
<tr>
<td>Suggestion Processing</td>
<td>68</td>
</tr>
<tr>
<td>NASS Services</td>
<td>53</td>
</tr>
<tr>
<td>Techniques of Creative Training</td>
<td>48</td>
</tr>
<tr>
<td>Suggestion Program Comparisons</td>
<td>46</td>
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<td>Separate Plans for Management</td>
<td>45</td>
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<tr>
<td>Program Budgeting</td>
<td>44</td>
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<tr>
<td>Suggestion System Computerization</td>
<td>39</td>
</tr>
<tr>
<td>Journeymen's Club (Case Studies)</td>
<td>38</td>
</tr>
<tr>
<td>Record Keeping</td>
<td>33</td>
</tr>
<tr>
<td>Suggestions/Union Relations</td>
<td>32</td>
</tr>
<tr>
<td>Program Start-Up</td>
<td>39</td>
</tr>
<tr>
<td>State &amp; Local Government Programs</td>
<td>20</td>
</tr>
</tbody>
</table>

Figure 4 Percent who say Topic is Extremely or Quite important

The basics of suggestion program management and administration are of importance to industry and government members alike. There are some differences between industry and government members, but in the main all topics have a significant interest to both groups.

Figure 6 shows the above information regarding the importance of Conference and Workshop topics broken out by the length of time members were associated with a suggestion program.

There is a significant degree of interest in most topics, regardless of experience in suggestions. There also are some significant differences by length of association with suggestion programs. However, as noted above, the basics of program management and administration are universally important.

Seminar Workshops

The questionnaire stated that "NASS sponsors four annual workshops covering all aspects of Suggestion System administration" and asked "If a regional seminar/workshop is planned for your area in 1975, would you attend?"

Seventy-two percent said they would attend

The questionnaire asked, "When would you prefer to attend a seminar/workshop?"

Thirty-seven percent said in the Fall, sixty-three percent said in the Spring

Possible Sites for the Formation of NASS Chapters

The questionnaire stated, "NASS has twenty-one chap-
Figure 6

<table>
<thead>
<tr>
<th>Topic</th>
<th>Percent who say Topic is Extremely or Quite Important</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>1 to 2 yrs.</td>
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<td>Evaluation Procedures</td>
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<td>Suggestion Quality Improvement</td>
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<td>Supervisory Support</td>
<td>91</td>
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<td>Suggestions &amp; Productivity</td>
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<td>General Publicity/Promotion</td>
<td>74</td>
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<td>Suggestion Processing</td>
<td>65</td>
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<td>Legal Aspects of Suggestion Systems</td>
<td>40</td>
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<td>NASS Services</td>
<td>58</td>
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<tr>
<td>Techniques of Creative Training</td>
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<tr>
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<td>52</td>
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<tr>
<td>State &amp; Local Government Programs</td>
<td>30</td>
</tr>
</tbody>
</table>

| IMPORTANCE OF TOPICS FOR CONFERENCE WORKSHOPS BY LENGTH OF TIME ASSOCIATED WITH A SUGGESTION PROGRAM |

...
Continued from page 6

...dures, before the courts and the commission require them to do so. This will not only produce more safety, but in the long run great economies for the manufacturer."

NJIT's Dr. John Mihalasky, who headed PLP-75's program committee, noted that tens of thousands of product-liability claims cost business hundreds of millions of dollars annually. "There will always be a risk for those who deal in products and in services connected with products," he said, "no matter how innocent-seeming the product, no matter what the selling price, no matter how earnest the attempt to please the customer, and no matter how sincere the effort to achieve safeness. But the ideal of safety is approachable. Although risk is inherent, it can be minimized, if not erased."

Herbert E. Greenstone of the Newark law firm of Greenstone, Greenstone and Naishuler and past president of ATLA's New Jersey branch, called for "greater emphasis on advertising the safety of a product, rather than brainwashing the public on the appearance of the product. The public may be misinformed, but it no longer is naive about what it wants from a product. Manufacturers ought to work with engineering schools, professional organizations and consumer groups to hasten reform, instead of resisting regulation. Safety should not be compromised to meet competition."

Dr. S. David Hoffman, vice-president of Underwriters Laboratories, Incorporated, of Chicago, said, however, that manufacturers face "an incredible morass" in trying to determine whether they will ultimately be held liable for having created an unreasonably dangerous product. Summarizing what he said were court holdings and other expert opinion, Dr. Hoffman cited twelve factors that a manufacturer must weigh and balance: Usefulness of the product, availability of a safer replacement, likelihood of injury, probable seriousness of injuries, the obviousness of danger involved, and the public's expectations concerning the product's performance. Also, possible elimination of risk through care or warnings, possibility of eliminating risk without impairing the product, state-of-the-art of the particular industry, cost of making a product safer, consumer willingness to pay, and the manufacturer's bargaining power vs. the consumer's.

WOMEN'S RIGHTS DEFINED

A brand new guide, "The Working Woman's Guide To Her Job Rights," can be useful to employers and employees alike concerning working women's status — and it's free to those who send a self-addressed label to Women's Bureau, Department of Labor, Washington, D.C. 20210.

WORKER COMPLAINTS AND DEAF EARS

Under a new U.S. Occupational Safety & Health Administration policy, any worker believing a hazardous condition exists on his job can request an inspection from the nearest OSHA office. Previously, complaints had to be in writing, in some detail and signed. Now, OSHA staff members will assist in preparation of requests and keep the complainant's name confidential if requested.

Continued on page 33
Inefficiency: The Reasons Why

By Douglas L. Bartley

DOUGLAS L. BARTLEY is an assistant professor teaching management courses in the School of Business at Pan American University, Edinburg, Texas. Prior to joining Pan American in 1973, Bartley worked for twenty-six years with the H.J. Heinz Company, as department head of Personnel and Labor Relations for a plant of 3500 employees, and as a trouble shooter in general management. He has taught at Bowling Green State University in Ohio and the University of Pittsburgh in Pennsylvania. In addition to teaching, he currently is engaged as a management consultant.

Recent economic conditions in the United States have produced a problem that is hardly widespread in times of prosperity; namely, personnel layoffs of indefinite duration.

With hourly paid workers, particularly those who belong to a union, some predetermined plan is put into effect at the time of layoff. In most instances seniority prevails. Does the same hold true for exempt salaried employees? In far too many cases there are no set rules. Specific layoffs are influenced by a variety of criteria: skills involved, departments, divisions, plants, age, product lines, personalities and, unfortunately, by whims of the manager.

It would be interesting to know the number of senior employees laid off and younger employees retained during periods of payroll reduction merely because, in the opinion of the manager, the senior employee either was "not functioning properly" or was "not properly motivated."

Why was the employee not doing a good job?

Caditz's laws basically refer to slack; i.e., the lack of cost control when business is good and the concomitant accrual of fat in the organization when things are going well. Wouldn't the same principle apply to supervision? When business is prospering and plenty of work is scheduled ahead, there is a tendency for managers to neglect certain facets of their job, to go along with the rest of the group in primarily seeking to produce or to sell more. Once the work slackens, however, it may be obvious that conditions in some areas are out of hand. The reasons for this vary.

In today's business world, a company needs to make available the tools to do a good job — proper equipment, good raw materials, adequate facilities, sufficient personnel and a pleasant environment in which to work. Given such tools, ineffective employees can only be the result of one of three situations: one in which they can't perform properly; one in which they won't perform properly; or one in which top management is inadequate. How to correct the condition, of course, varies with the cause.

The Employee Who Can't

Too frequently the Peter Principle applies. Employees find themselves promoted to jobs beyond their capabilities. Competent in a different phase of the work, they have been promoted to a job similar in context, but requiring the use of skills that they do not possess. They become ineffective.

Similarly, previously satisfactory employees may find themselves on a job they cannot now perform, because the work in the department has changed.

These employees want to do a job well but can't. Part of the responsibility may rest with the management, which had a major part in effecting the changes. The solution, however, is simple: a transfer to a job that the previously capable employee can properly perform. Often a downward adjustment in salary will be acceptable to employees, since they may be frustrated and fully aware that the work is not going well.

In large companies, transfers can be made easily, and techniques are available that will allow the employee to save face when transferred. Transfers in small, single plant or office establishments cannot be camouflaged. The employee who can't must be reassigned or terminated if the work is to be accomplished.

The Employee Who Won't

The employee who is capable but who won't perform is quite another story. One of the most important functions of a supervisor is to know
employees. This means the same in management as it does to the major league pitcher who keeps book on the opposing batter. A good supervisor will study each employee’s personnel record to discover all there is to know about the employee — home and family life, education and work background, leisure activities or interests, ambitions, strong and weak points, motivations, etc.

This is not too great a task if one accepts the premise that management has organized the business properly. The span of control should not be too large, so that the number of employees to review will be small.

If supervisors do their homework, they should be able to pinpoint why the employees are not motivated and why they are ineffective. In some instances a transfer might be the answer, but it is questionable practice to transfer an ineffective employee who has the talent but who, for one reason or another, is not performing well. Usually, it is not done. In most companies an approach other than a transfer is used.

To give the incumbent every opportunity to succeed, a good manager should first review the work situation. Is management doing everything it can to provide the proper working conditions? Are there any bottlenecks, such as late arrival of materials, insufficient scheduling, breakdown in communications, poor preventive maintenance, or poor cooperation between departments that hamper the employee from doing a good job?

If the answer is negative, then the fault must lie with the worker himself. Usually, two steps are taken in an attempt to make an ineffective employee into an acceptable one.

The first is to point out to the employee the area of work that needs improving. Notice that no mention is made of the employee’s shortcomings. If a problem of work is attacked rather than a weakness of the employee, that individual is more apt to respond favorably to other suggestions that may be forthcoming.

The second step is to record all discussions or meetings held with the employee. Should eventual termination of employment be necessary, the manager can show his or her supervisor, a union or an employee committee that every avenue was explored in an attempt to salvage the employee, and that the discharge was warranted.

The approach taken by supervision in carrying out these steps varies by a number of factors — the location of the firm, the size of the firm, the prominence of the employee involved, the potentially adverse public opinion and, primarily, the job level in the firm’s organizational structure.

For hourly paid employees, and in a situation where perhaps a union is involved, a four-step procedure might be used:

**STEP 1. An informal meeting between the supervisor and the employee**, discussing on a friendly basis the problem in general and the possible solutions.

**STEP 2. If the conditions do not improve**, a repeat of Step 1, but with a union representative present and with a record of the meeting made in writing (a copy being given to the employee, to the union representative and to the supervisor). The written warning is issued to show the seriousness of the case and to place on record the problem at hand and what should be done to correct it.

**STEP 3. If conditions still do not change**, a third meeting with the same persons in attendance and with a suspension or a discharge given, depending on the seriousness of the circumstances. The length of suspension need not be long, since it serves only as a final warning that a discharge will be given unless changes are made. A written report similar to Step 2 also should be made. It should be noted here that rarely should the employee be demoted, as this evaluation concerns a capable employee who isn’t performing up to standard. Demotions basically are for employees who cannot perform the job they are presently assigned.

**STEP 4. If the employee was not discharged in Step 3, and if the conditions have not been corrected, termination from the payroll is in order.**

Action on exempt salaried employees varies according to the level of management that the employee occupies. For first-line supervisors and middle management, the same general approach as for hourly personnel is used, but with a slightly different twist.

Again, the work in the department is reviewed to see that the work conditions are acceptable for the employee to be successful. If they are, meetings are then held with the employee to pinpoint the problem.

Techniques such as Management Grid or Management by Objectives might be used. In companies where these techniques have not been adopted, the same basic principles can still be applied.

The important thing to remember is that two steps should be taken: get the problem out in the open; prepare factual reports on the meetings and the problem. With most managerial jobs, certain goals can be established and a fair and equitable system of evaluating the manager’s progress in reaching these goals can be devised.

Whether it be accomplished by Management by Objectives or simply by two people trying to set mutually acceptable goals, the results are the same. All interested parties are working toward a common goal.

If the employee accomplishes the goal, he no longer is a won’t, but has developed into an acceptable employee. If the supervisor tried to assist him in seeing that the job conditions were reasonable, and if the employee still did not meet the goals, in all probability a severance from the company is in order.

In most cases, management is doing a disservice to the employee by not terminating him. If the employee is capable but won’t adapt or be motivated to do a good job, he is on the wrong job and will not have much of a future with the company. Although a discharge is severe, it might be the best thing for the employee, particularly if he is young with many years of service ahead of him.

**Poor Management**

Too often in the managerial role, the underachiever is capable and would like to be successful, but for one reason or another he is not progressing as he should. In far too many cases it is not all his fault. His superiors must shoulder a major part of the blame. If the employee is an excellent manager, he may be able to overcome poor supervision from his superiors, but excellent managers are not the rule.

A manager has the right to expect that the organization is properly structured, that the span of control is workable, and that the department or office is reasonably staffed both in numbers and capabilities.

He should have the authority or power to act, as well as the responsibility for seeing that the work is properly performed. He also should have the necessary equipment, facilities and raw materials with which to do a job well. If these items are not present and if he still does not do an acceptable job, then it is either because he can’t or won’t.

If, however, these items are not present, management has a responsibility to see that the conditions are right for a job to be done successfully — not by an excellent manager, but by an average one who has the desire and motivation to do an excellent job.
MANAGING BY COST

INTRODUCTION

In these days of rapidly rising construction costs caused by inflation, labor problems, environmental concerns and scarcity of materials, much discussion is going on around the industry concerning cost control. It is as if one could control costs through some tangible, prescriptive means. Well, it isn't that simple because people are involved. And, their attitudes, feelings and concerns change with time.

In the good old days, when money was less of a problem, cost took the number-three position in its triad relationship with performance and schedule. It used to be performance at any price. After all, if it didn't work, if it wasn't higher, bigger or better than its neighbor, who would want it?

Of course, schedule was in second place. On occasion a project had to be on schedule or it wasn't as useful. In the rush to be the first tall building on the block, designs were frozen as soon as they were cranked out. Cost of construction was not as important as starting to get income from the building.

Now, times have changed. Cost has been forced into the uncomfortable position of equality in importance to schedule and performance. Owners are beginning to make tradeoffs between these three. Designers are beginning to make tradeoffs in performance to control costs. Uncontrolled cost is influencing schedule through the delay caused by high bids.

People's values are changing. They seem to grudgingly accept and demand less as costs go up. This can change, and will change, as members of the building team learn to cope with cost as an equal partner and learn to manage by cost as effectively as they have learned to manage schedule and performance.

At this point, it is well to define those project costs we are attempting to control and discuss. Figure 1 shows the total project costs as considered by the Public Buildings...
Service of GSA. It is the Estimated Construction Cost element only of the total project cost that is being addressed in this paper. This cost element represents from fifty percent to seventy-five percent of the total acquisition costs for a facility.

We are concentrating on construction cost because that, to some extent, influences cost in the other management areas shown in Figure 1. It is also the cost element that gets high owner and public visibility at bid opening. Equal time and effort should be devoted to controlling the hidden management costs for a project, but that is the subject for another paper. It is sufficient to say that much of the philosophy and procedures outlined here to control construction costs can be adopted to control management costs. What then, do we mean by control?

**THE CONCEPT OF CONTROL**

There is a difference in managing cost and controlling cost. To manage something is to succeed in accomplishing. To manage by cost is, then, to succeed in accomplishing a present cost objective. Management is the act or manner of handling, directing or controlling something. Control is a process, i.e., a systematic series of actions directed to some end. The dictionary defines the term control as having two meanings: to check or verify by comparison with a duplicate register or standard; to regulate, exercise authority over, direct or command.

This definition of control, when coupled with the term cost, gives no indication or solace that costs will not rise. What it does say is that you should have a project baseline against which to compare so that management can make a decision in a timely fashion.

The strong assumption in the term control is that management is willing to exercise authority — to make a decision.

Notwithstanding the need for management involvement and authority, a large part of effective cost control is cost consciousness. Managing cost or building value requires an emotional commitment to the task. It requires a belief in the importance of cost and value. Many new design-to-cost programs are being introduced in an effort to bring consciousness to the influence of their actions on cost.

Value engineering, now called value management by GSA, is another very effective program directed at cost control. It is effective because it identifies cost and makes cost visible to the designer. Designing-for-value — value management's counterpart to design-to-cost — requires even a higher level of human activity. Designing-for-value seems more idealistic than designing-to-cost. It certainly poses higher-level challenges to owners, architects, engineers, contractors: that of separating needs from desires to control costs.

It means a process of making performance tradeoffs between desires in order to control costs. It never means performance tradeoffs between needs. This is done through the process of establishing the worth of a component, system or building function and relating that to actual or estimated cost to see if best value is being provided for the required function.

I submit that better value can be achieved if everyone
involved is sensitive to value. It follows that cost control can be largely achieved through the cost consciousness of every member of the building team. This consciousness must begin right at the budget stage of a project, using a defined project baseline as the control mechanism.

CREATING A BASELINE

Many people feel that cost control means the control of money or a budget review. In fact, when you mention project baseline to some, all they think of is square foot of building and the cost estimate. Those that control costs by looking solely at estimates, money or cash flow are missing the boat.

Figure 2 is a FAST (Function Analysis Systems Technique) diagram that shows the way to control cost is by controlling scope. The diagram assumes that the function of control cost is a critical management objective consistent with the overall goals and objectives of the owner.

Figure 1 illustrates the relationship of cost control to other procedural functions. The figure considers control cost as one basic function of the organization. (This restriction excluded listing other basic functions not germane to the issue.) The figure indicates only major goals and objectives, with a few of the basic methods necessary to achieve cost control. Higher-order functions appear to the left on the figure with lower-order functions to the right. Critical path activities are located on the centerline. The figure may be read by inserting any shown verb-noun activity into one of the following two questions:

"Why is it necessary to ________?"
"How is ________ accomplished?"

The answer to the why question appears in functional form to the left of the activity inserted. The answer to the how question appears to the right of the activity inserted. For simplicity, the figure omits many detailed procedures that could be generated by asking these questions in greater depth. However, the detailed recommendations in this paper all have been influenced by just such questioning. It is important to note from Figure 2 the relative high-order placement of the control cost function in relation to other functions shown. Achievement of the control cost function is dependent on successful achievement of all functions shown to the right of it.

The key to achieving cost control through scope control lies in the definition of scope. The old-fashioned idea of viewing scope as cost per gross square foot isn’t sufficient. Scope control is achieved by identifying all requirements and generating a baseline document to record them. Such a system requires close monitoring by management, but it does permit verification to take place in order to regulate; thereby achieving the control function.

The scope of a project includes the three elements of cost, time and technical requirements. Each of these should be well documented in the baseline created to determine budget requirements. Eventually, this baseline can be inserted into the designer’s contract as a performance target schedule and technical requirements.

The project’s baseline should be a model that presents or assumes the essential conditions upon which costs are based. These might be:
**UNIFORMAT**

<table>
<thead>
<tr>
<th>COST ELEMENT</th>
<th>QUANTITY</th>
<th>UNIT OF MEASURE</th>
<th>UNIT COST</th>
<th>ORIGINAL BUDGET</th>
<th>% COST</th>
<th>CURRENT COST</th>
<th>VARIANCE</th>
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</thead>
<tbody>
<tr>
<td>01 FOUNDATIONS</td>
<td>02 SUBSTRUCTURE</td>
<td>03 SUPERSTRUCTURE</td>
<td>04 EXTERIOR ENCLOSURE</td>
<td>05 ROOFING</td>
<td>06 INTERIOR CONSTRUCTION</td>
<td>07 CONVEYING SYSTEMS</td>
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<td><strong>FIGURE 3</strong></td>
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**FIGURE 4**

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</tbody>
</table>

**FIGURE 3**

**FIGURE 4**
1. Functional areas, i.e.: square feet of office, auditorium, cafeteria.
2. Number of occupants, i.e.: permanent occupants, visitors.
3. Configuration, i.e.: number of floors, height, perimeter, volume.
4. Design elements, i.e.: tons of air conditioning, fixture units of plumbing energy loads, live loads, dead loads, wind loads.
5. Special system, i.e.: sprinkler, emergency power, master clock.
6. Geographical location, i.e.: climate, cost indices, foundation assumptions.
7. Schedule, i.e.: design, construction and occupancy dates.
8. Cost model, i.e.: a multi-element estimate based on the above seven data elements.

**QUANTIFYING A DREAM**

Most owner and designer cost-control problems are created at the budget-planning stage of a project. At this time, client needs sometimes are understated in order to sell or justify a project. It is easy to oversimplify client needs at the budget stage and do it quite innocently without a definitive building concept. The estimator is being asked to quantify a dream. Yet, it is known that the reliability of an estimate improves in proportion to the amount of information available when it is created. The opinion that estimating is an art and not a science is only partially correct. Only when there is no information is estimating all art.

There must be information at the budget-planning stage on which to base an estimate. If an owner can't state what he wants in terms of the first seven elements shown above, he has no business making a budget, getting a mortgage or hiring a designer. If the owner doesn't have standards and criteria, then the city or local code does. At the last resort, the owner or his designer can make written assumptions about everything to be in a project, covering all of the first seven elements if necessary. That is as good a baseline as any.

The eighth element in quantifying a dream is preparation of the budget or cost model and the estimating talent you hire to do the job. Estimating in most organizations needs to be elevated. Too many consider it a technician's job. Designing-to-cost requires cost management. The recognition of estimating as an effective management tool requires that cost disciplines become a part of the management team and elevated in the organization to be effective.

Before a decision is made to use such a system to control cost, you must reverse your thinking concerning estimating. The current way is to create an estimate during or after design. It then becomes a bill of material — a buying list — that indicates the cost of things that you are buying. Under the new design-to-cost philosophy, management prepares the estimate before the fact — before design — and it becomes an authority list that authorizes what can or cannot go into the design. As part of management, the estimator can give direction during design and guidance to the owner in controlling cost.

**THE NEW COST MODEL**

One of the construction industry's problems has been a lack of uniformity, standardization and coordination. This is a serious problem in the cost area. We cannot speak to each other about costs, because we use different languages. We cannot trade cost information and use it effectively. Government cost data is not acceptable for commercial work, even though we both use the same concrete, glass and steel. Something is being done to correct this.

The General Services Administration and the American Institute of Architects are working jointly to develop a standard format for cost estimates. This is called UNIFORMAT — Figure 3 — and consists of twelve basic cost elements. UNIFORMAT represents one type of cost model that can facilitate the exchange of cost information between the government and private industry.

UNIFORMAT is proposed for use at the budget-planning, design, construction, operation and maintenance stages to record and monitor cost. Each of the twelve UNIFORMAT elements will be broken down into a series of subelements and go to the level of detailed cost estimates as design progresses (Figure 4).

The cost model created at the budget stage can be made differently, depending on the historical data used. The most common way to present building costs is on a SF (square foot) between different classes and types of buildings. Retrieval and reapplication of cost per SF data requires extreme care, good judgement and a complete understanding of the separation of classes inherent in the SF statistics.

For this reason, some professionals in the cost field are using component costs, system costs and parameter costs. Preparation of an estimate using these costs does require a clearer concept of the building to be budgeted and designed. It forces one to prepare or assume some of the baseline model data suggested above in order to generate the quantities needed for the unit costs to be used. The following definition of terms will put this into clearer focus:

**COMPONENT:** A part, constituent or ingredient of the whole. Such as: Light fixtures are a component of a lighting system; a lighting system is a component of an electrical system.

**SYSTEM:** A set or arrangement of things so related or connected with other subsystems as to form a unity or whole. Such as: An exterior wall system including inside and outside finishes; an air-conditioning system including controls and wiring as well as generating equipment.

**PARAMETER:** An arbitrary constant, each of whose value characterizes a member of a system. Such as:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural</td>
<td>SSA, LFC, KW, JS, TONS, FU</td>
</tr>
<tr>
<td></td>
<td>Supported surface area, Lineal foot of column, Kilowatt of substation load, Number of junction boxes, Block cooling load in 12,000 BTUHs, Number of fixtures that have drains</td>
</tr>
</tbody>
</table>

Reviewing definitions we see that the most commonly misused and misunderstood term is the parameter. For example, a building's cost per SF is commonly referred to as a parameter cost. Yet, this violates the definition of a parameter. It is neither constant nor does it characterize any particular system.

Yet, it is with the parameter that I see the greatest opportunity for controlling cost. It is this area that needs cost research to explore the many potential different units of measure for each building system. The parameter is good for cost control because it facilitates the creation of quantifiable design targets for each design discipline.

Coupled with cost targets and schedule, design targets create the third ingredient defined earlier to constitute scope. Figure 5 portrays a list of parameters that are
<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PARAMETER</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundations</td>
<td>APSF</td>
<td>Adjusted pounds per square foot of total load</td>
</tr>
<tr>
<td>Structural</td>
<td>AKIP</td>
<td>Adjusted kip, i.e.: adjusted thousands of pounds of live load, dead load, wind load, seismic load</td>
</tr>
<tr>
<td>Exterior wall</td>
<td>SA</td>
<td>Square feet of surface area</td>
</tr>
<tr>
<td>Roof system</td>
<td>SQ</td>
<td>Square, i.e.: units of 100 square feet of surface area</td>
</tr>
<tr>
<td>Interior constr.</td>
<td>ACF</td>
<td>Adjusted cubic feet</td>
</tr>
<tr>
<td>Elevators/escal.</td>
<td>LFT</td>
<td>Total lineal feet of travel</td>
</tr>
<tr>
<td>Plumbing/drainage</td>
<td>EFU</td>
<td>Equivalent fixture unit count</td>
</tr>
<tr>
<td>HVAC</td>
<td>ATON</td>
<td>Adjusted ton, i.e.: the sum of heating, cooling and ventilation loads in BTUH divided by 12,000</td>
</tr>
<tr>
<td>Electrical</td>
<td>CKW</td>
<td>Connected kilowatt load (Not input substation load)</td>
</tr>
<tr>
<td>Special syst/equip.</td>
<td>LS</td>
<td>Lump sum allowance (based on accompanying list of items)</td>
</tr>
<tr>
<td>General constr.</td>
<td>ACRE</td>
<td>Site acres</td>
</tr>
<tr>
<td>Utilities</td>
<td>BSRA</td>
<td>Building site ratio acres, i.e.: acres external to footprint area of the building</td>
</tr>
</tbody>
</table>

FIGURE 5

suggested for further research. As a group of parameters, they illustrate another way to estimate the cost of facility. They are intended to complement and not replace existing methods of calculation.

With new management procedures, new systems of formatting cost, new cost parameters and design targets to apply, we should be ready to master our cost problems. We should be ready to provide an owner a complete and usable facility, within the budget, the first time around and with enough confidence that deductive bid items are no longer necessary.

However, no sooner than we've learned to manage acquisition cost, we hear rumblings about managing life-cycle costs.

DEALING WITH LIFE-CYCLE COST

The construction industry is changing. Owners not only want a facility to stay within the budget, they want it to express concern for environment, inflation and energy considerations; all of which can be translated into life-cycle cost calculations. Congress now is considering a bill to require life-cycle cost calculations on all government projects.

Even though LCC has been talked about for years, nobody ever has done an LCC calculation for an entire building. Bits and pieces have been done in the form of economic analysis of fuels, structural systems, HVAC systems and electrical systems. However, no owner ever has formulated an LCC budget and controlled it through design and construction and then validated its achievement during use.

The definition of LCC is not universal. People use different definitions of life-cycle costs. They tend to include those costs that they are sure of or know about. Some attempt to pick only the significant costs as life-cycle costs. Others exclude costs from their calculations, such as salaries or services, because quantification of these costs is beyond the present state-of-the-art. Nobody has addressed themselves to the productivity question in LCC analysis. The definition I like comes from the Department of Defense:

"The LCC of a system is the total cost to the government of acquisition and ownership of that system over its full life. It includes the cost of development, acquisition, operation, support and where applicable, disposal."

In an ideal sense, a system would include a building and its occupants. The term full life would then refer to its intended term of use or need, rather than to the life span of pieces of hardware. Where life spans of building hardware differ from life spans of intended use, consideration would then be made to replacement costs and residual values.

At GSA, we are using different definitions of LCC as we gain knowledge and expertise in the area. This is a constructive approach that I recommend to all. Use whatever definition of LCC you feel comfortable with, and modify it as you gather new data and conduct research. In this paper I will discuss LCC cost application in GSA from two perspectives: application during procurement, which seems to be the easiest because it provides visible results; and application during building design which poses the more difficult problem of motivating designers to incorporate life-cycle costing in their day-to-day operations, while preparing plans and specifications for bid.

LCC IN PROCUREMENT

Our first procurement on the basis of LCC considerations involved contracting for seven building systems on a performance specification basis. The seven systems were HVAC distribution, electrical distribution, the finished floor, the finished ceiling, illumination, partitions, and structural frame.
By using this performance specification for building systems concept, rather than the normal procedure of design drawings, we awarded, in March 1973, a $29.6 million contract for three Social Security Administration Program Centers. The contract was awarded to the firm that had the lowest LCC based on the summation of acquisition costs: forty years cost for HVAC, space adjustment and luminaire operation, and a nine-year system maintenance cost.

These three buildings will save an estimated thirty-seven percent in cooling energy and twenty-five percent in lighting compared to buildings of similar size. Moreover, we have achieved a thirty-nine percent reduction in the capacity of cooling equipment normally used in conventional buildings. Electrical power substation capacity has also been reduced by twenty-five percent.

We learned from this experience and revised our life-cycle costing formula. We now are in the midst of a second procurement for the Social Security Administration’s Headquarters Expansion Project in the Baltimore area. This project includes the $92.4 million Metro-West Office Building in downtown Baltimore and a $68.7 million computer center in suburban Woodlawn.

To complete our efforts at LCC in procurement, we incorporate a Value Incentive clause in all construction procurements; which encourages contractors to submit recommendations based on life-cycle cost savings. Upon approval of a proposal, the contractor shares in twenty percent of the average annual savings. We paid contractors approximately $130,000 in FY 1974 in life-cycle savings shares in eight proposals. This represents an annual savings to the government of $650,000, which will continue for years into the future. This is a small beginning. Life-cycle costing is clearly in its infancy, but its potential is unlimited.

The reason for this is obvious. Most decision makers are forced into living from day to day on the money available. They are restricted to operating within prescribed little packages at any given point in the life cycle. Results today seem to count. Future money is the next person’s problem; he’ll budget for that tomorrow. Somehow, the design-to-cost philosophy must be changed to a design-to-life-cycle-cost approach. Something needs to be done to encourage each participant in the decision-making process to base his declarations on life-cycle-cost considerations. When decision makers realize that life-cycle calculations can be implemented, that they are not a waste of time, that the budget-design-procurement structure is geared to accept them, then these calculations will be made and applied without lip service.

In June 1974, GSA announced new selection procedures for architect-engineers who design our buildings. Within five years GSA will award A-E contracts on the basis of fully developed project proposals that include evidence of technical and professional distinction, planning and design concepts, estimated fees and both construction and life-cycle cost estimates.

The Public Buildings Service is currently engaged in a major research contract to develop a Life-Cycle Planning and Budgeting Model. The intent of this model is to provide a system to promote designer sensitivity to the total cost of ownership. The model will aid in establishing life-cycle cost budgets at both the building and systems level before hiring the designer. The time will come when it will be possible to set forth life-cycle cost performance targets for building systems and be able to use the computer-based model as a tool to review the architect’s design concepts. Some of the LCC cost elements being explored are shown in Figure 6.

Our vision is to use the project baseline documentation, discussed earlier in this paper, to create design parameters that, in turn, can be quantified to be used in calculating both acquisition and LCC targets. Only then will one have a hope of truly controlling life-cycle costs. The parameters, in essence, will have become the scope.

Such is the story of managing by cost. But it is not a new story. As discovered in Luke 14:28, by Rudy Kempter and Bob Rossman, “Which of you, intending to build a tower, sitteth not down first, and counteth the cost, whether he have sufficient to finish it?”

This is all I am reminding you to do.
Fast Diagramming and Multiple Functional Analysis

By C.E. Tammadge, C.V.S.
SAVE National Director of Standards

In most products, it will be found that several components of an assembly perform the same function. In this case, if the individual component costs are accumulated, the total cost for each function can be determined. However, it is possible to have a single high-cost component that performs many functions. In this case, cost can be assigned to each function on an arbitrary, judgmental basis or, if the costs are sufficiently high, a more detailed analysis may be warranted. This paper presents itself to the problem associated with very high-cost single components that perform many functions.

This technique was developed from the use of the Functional Analysis System Technique (FAST) diagramming. Because this technique is not yet widely used and because the practitioners of this technique have different ground rules, the ground rules for FAST diagramming used by this author will be described first.

The Functional Analysis System Technique

FAST diagramming is a technique that specifically shows the functional relationship and interrelationship of all identified functions within a product. At first glance, it may appear to be similar to a PERT diagram or flow charting; however, FAST diagramming is different in that it shows functional relationships and is not time orientated. The FAST diagram is intended to show pictorially the relationship of functions of a product or service with all functions shown in the verb/noun combinations. The ground rules for this technique are shown in Figure 1 and the following is a description of each function within this figure.

1. The scope of the problem under study is shown by two vertical dashed lines. Everything that lies between the two scope lines is defined as the problem under study.
2. There is a critical path of functions going from left to right between the scope lines.
3. Only required secondary functions and the basic function(s) are found inside of scope on the critical path.
4. The higher-order function lies to the immediate left of the left scope line on the critical path.
5. The assumed function(s) lies to the immediate right of the right scope line on the critical path.
6. The basic function(s) always lies to the immediate right of the left scope line.

PERFORMANCE
7. All other functions on the critical path lie to the right of the basic function and are required secondary functions (normally not aesthetic functions).
8. All other secondary functions that the product does, lie either above or below the critical path.
9. If the function happens at the same time and/or is caused by some function on the critical path, the function is placed below that critical path function.
10. If the function happens all the time, the product is doing its work, such as an aesthetic function that is placed above the critical path to the extreme right of the diagram.
11. All one-time functions, such as start-up functions, are placed above the critical path in the center area of the diagram.
12. If there are specific design objectives to be kept in mind, they are placed above the basic function and shown in dotted boxes.
13. To determine whether the proper arrangement and relationships of the functions exist, there are two logic test questions that must be answered: How? and Why?
14. For the how test, the question, How do I (verb) (noun)? is asked of any function. The function answer should lie to the immediate right. Every function that has a function to its immediate right should logically answer the how question. If it does not, the function has either been improperly described or is in the wrong place.
15. The why test works the same, but in the opposite direction. The question, Why do I (verb) (noun)? is asked. The answer should be in the function to the immediate left and should read: So that I can (verb) (noun). The answer must make sense and be logical.
16. All functions that lie on the critical path directly support the basic function. All other functions on the FAST diagram are subordinate to the critical path function.

Development of the Multiple Functional Analysis Technique

The component used in the development of this technique was the metal liner of a pre-stressed concrete vessel used in the design of a high temperature, gas-cooled, nuclear power plant. This liner is shown pictorially in Figure 2 and the overall dimensions will provide some concept of the liner size. The cost of such a liner is several million dollars.
The analysis of this liner indicated that the functions being performed by the wall thickness could be divided into six distinct secondary functions. Limiting the consideration of this problem to these functions, a FAST diagram was constructed as shown in Figure 3. The basic function was to Prevent-Leakage.

In order to develop cost and assign cost to the individual functions, a curve was drawn indicating plate thickness against cost as shown in Figure 4. This curve includes both the basic plate material cost, the fabrication and the erection cost associated with the liner.

It was then necessary to determine the minimum plate thickness required to perform each of the six functions. This calculation is not normally performed in the design of such a liner. The conventional method is to size the thickness of the liner on the highest functional requirement, and determine the stresses in the liner from the other functions to prove that these are within the allowable stress for the material. Figure 4 indicates the minimum plate thickness required for each of the functions.

Costs were then assigned to each function by identifying the cost required to provide the additional thickness over and above the thickness required to perform other functions. As an example, costs associated with Resist-Pressure were only those costs to increase the plate thickness from \( \frac{3}{8} \) inch to \( \frac{1}{2} \) inch.

Having completed this diagram direction, the problem became clear. Eliminating or replacing the function of Support-Weight would not reduce the required thickness of the liner plate, but would introduce additional costs by performing this function in some other way. However, attempting to perform the Resist-Buckling function in some other manner could reduce this plate thickness from \( \frac{3}{4} \) to \( \frac{1}{2} \) inch. There was another advantage found, in that the remaining \( \frac{1}{4} \) inch of plate would still be performing two-thirds of the required Resist-Buckling function. In this particular case, it was found that if one-third of the Resist-Buckling function could be provided for less than twenty-five percent of the total plate cost, then a better value product could be achieved.

As with all functional analysis, this technique does not solve a problem, but it gives direction where previous techniques did not.
Comment...

WHERE DO WE

ROBERT K. WILMOUTH was elected president and chief administrative officer of Crocker National Corporation and its chief subsidiary, Crocker National Bank, in February 1975. Prior to his association with Crocker, Wilmouth had been executive vice-president and a director of the First National Bank of Chicago and its parent organization, First Chicago Corporation. He left there after twenty-five years in various official capacities. Most recently, he was in charge of the Corporate Banking Department, a post to which he was appointed in January 1974. He is a native of Massachusetts, a graduate of Holy Cross and holds an MA from Notre Dame. Wilmouth is a member of the governing council of the American Bankers' Association, serves on the Board of the Bankers' Association for Foreign Trade and is a member of Robert Morris Associates.

To know what direction to go from here, we'd first better take a look at where we are now. What is the real state of our economic health? Most observers of the economic scene say we are at the bottom of the recession. The disagreement seems only on the question of how rapid the recovery will be, and perhaps how long it will last.

The view of our Crocker economists is that the recovery may not be as sudden and steep as others believe. There is still a ten-month inventory of housing lying dormant on the market. Not much rise in capital spending is forecast for the immediate future. Budgets are set for the year. Profit margins in many industries are still squeezed. And probably most significant of all, consumer confidence is still at a low ebb.

Indeed, consumer confidence in government, in business, and in most of our other institutions is at a low ebb. It is not just a wait and see attitude; it is downright disillusionment. Nor is it a surprising attitude for a citizenry that was bilked in the 60s by the get rich quick merchants of penny stocks, letter stocks and Equity Fund-type securities. It is a citizenry that then was ravaged by a pernicious inflation, betrayed by its President, and finally stunned by the worst recession in the memory of most adults. Through it all it was fighting a war in a far-off land for reasons it found equally remote.

Where We Are Today

So properly to assess where we are today requires something more than a reading of the economic indices. It requires, in my view, a perspective of the mood of society. It requires, as well, an understanding not only of where we are, but how we got here. We have been following a lot of unwise policies for a long time. They have induced serious economic illness and probably a sociological illness, too. We have come to a time when we must understand where our policies are leading us, and decide if we want to continue in the same direction or alter course.

A recovery from this recession, later this year or early next, is nothing but a temporary high resulting from injections of hallucinogenic economic drugs. The upturn from the bottom of this recession will not reflect any recovery from the economic illness I talk about today. In fact it could be only a high fever just before the relapse.

I am a banker, not a philosopher. So my remarks will be limited to a discussion of some basic changes I believe we need to make in economic policy. But, like any citizen, I am uncomfortably aware of the erosion of other values in our society. That is another speech for another day by someone more expert than I. I do suggest, however, that restoration of a truly sound and productive economy is not entirely incompatible with restoration of a healthy society.

Much of what has been done to erode and inflate our economy has been done in the name of social enrichment. It hasn't worked out that way. The poor and the deprived are still poor and deprived. Much of what has been done to enrich them has, instead, exploited them. A sound productive economy may not be the sole purpose of human existence, but without it, none of the other purposes are attainable.

Someone once said that our economy is to society what blood is to the human body. It may not be the reason for living, but without it life is not possible.

Quick Fixes Will Not Solve Our Problems

That exhausts my philosophic capability for today, so let me turn to a discussion of a few basic realities of our present economic predicament, and what we might do about them. Our real economic troubles are not going to be remedied by controls, allocations or rebates. Those are all quick fixes that either obscure the trouble or fix it long enough to last until the next election.

It will come as no surprise to any of you to hear me say that the overriding economic problem of this country is that we have created an economic climate in which the accumulation of savings, hence the accumulation of capital, is discouraged. Without accumulation of capital our economy and our freedom die. Inflation discouraged...
GO FROM HERE?

By Robert K. Wilmouth

Debit-To-Equity Ratios Rising Steeply

When you couple irrational fiscal policy to confiscatory tax policy and to the disillusionment of the individual investor following the sorry sixties and wrap it all in inflation, it is no wonder equity markets dried up. In such an economic climate it is only natural that debt to equity ratios have been rising steeply. For U.S. industrial companies, the ratio has gone from twenty-five percent to forty percent in the last ten years.

Banks like mine have been called upon to perform feats of corporate finance that prudently and properly can be performed only in the equity markets. As a result, we have been criticized for allowing loan portfolios to become disproportionately large for our capital.

Much criticism of banks may be justified, and perhaps some of this criticism was, too. However, in my view, banks have been performing heroically during this period when equity was unavailable. If they had not performed as well as they did in finding ways to substitute debt instruments for equity, the present recession would have been upon us sooner, been more severe and lasted much longer.

Commercial banks were not designed to furnish the capital requirements of business; nor were corporate structures intended to carry debt instead of ownership.

Unemployment is at unacceptable levels in this country, and I guess a lot of politicians are preparing to run for office on platforms that promise to reduce it. However, politicians aren’t the only ones concerned; all of us in business are, too. Most concerned of all are the unemployed, now including forty percent of the teen-agers in minority groups.

In addition, we all had better start being concerned about the magnitude of the unemployment problem we will face by the end of this decade, if we continue in an environment not conducive to the formation of capital.

Needed: 14 Million Jobs

Between now and 1985, fourteen million more persons will enter the U.S. job market. It is estimated that at today’s prices it requires about $21,000 of capital to create one job. That means that if we can get squared away by the end of this year, we will need to accumulate and invest capital at the rate of about $1.5 billion a week during the five years remaining in this decade, just to provide jobs for new citizens.

Now, any of you could form a subcommittee that could, in probably an
hour's time, come up with a list of tax reforms and other legislation that, if enacted, would drastically improve the climate for capital formation in this country. On such a list, for example, you would probably include:

* Increase depreciation allowances.
* Eliminate taxes on savings account interest.
* Eliminate double taxation of dividends.
* Lower rates on capital gains to levels that prevailed prior to 1969.
* Lower the corporate income tax rate.
* Allow tax deductions for cost of facilities installed to reduce pollution.
* Substitute something like a negative income tax for the present system of welfare payments.
* Modernize and simplify regulatory structures like the ICC.
* Remove interest ceilings.
* Remove controls and allocations on energy resources.

Those are all items on which we could probably agree here in this room. A solid economic argument can be made in support of each, and it can be easily demonstrated that each is in the long-run public interest.

But how many do you think would have even a slight chance of approval in the present or, for that matter, any recent Congress? There isn't a single one with any political moxie to it. Indeed, most are political anathemas. Yet, without some or all of them we will become economically stagnant and socially regressive.

We must have more than logic on our side. Even attempting to serve the public interest won't necessarily win votes. We must understand the political as well as the economic nature of proposed reforms. We do live in a democracy, and we must be heard in the political arena if we are to be heard at all. I would like to suggest three ways we might generate a few decibels.

Political Keys To Economic Reform

It seems to me that the first political key to achieving real economic reform is to focus attention on the extent to which the working people of this country have become dependent upon capital formation and growth. Look at who owns corporate America today. Employee pension funds own approximately thirty-five percent of the common stock of U.S. corporations. In fact, therefore, the future economic independence of today's working people will depend in a large measure upon the health of corporations.

Labor has an enormous stake in making sure that capital structures are adequate and that equity markets are available to enterprise. If corporate debt becomes disproportionately heavy, both the dividends earned by pension funds and their growth are imperiled.

Because of this broad and growing ownership of corporations by the people who work in them, Peter Drucker has gone as far as to suggest that we are building the ideal socialist society. It is a society in which the workers own the means of production without government having to act as intermediary.

However you wish to characterize this substantial ownership of our companies by working people, it seems to make it that much more likely that you will be able to find ways to rally their political support for measures designed to make the economic climate more healthful.

A second political key lies in the fourteen million new jobs I spoke of a moment ago. Those are fourteen million new votes, and isn't there some political appeal in the argument that it is better to have voters with jobs than to have voters without? The issue of jobs is always a meat and potatoes issue with politicians.

Those of you who are familiar with the effort by Lockheed to persuade Congress to enact the loan guarantee will recall that Congressional support was not won by arguments that Lockheed should be preserved because it is important to national defense. The battle was won because Congress wanted to preserve the jobs of Lockheed employees.

Fighting Unemployment

We ought to be able to demonstrate that mere appropriation of public works funds does not alleviate unemployment in the long run, nor does it create any new jobs. Only by encouraging savings, and by investing those savings as capital in productive enterprise will any jobs be created. Just consider the situation in each of your own companies. How many jobs might be created in your company and in those who supply you if you had access to new capital at acceptable costs tomorrow?

Fighting unemployment. That's a strong platform on which to win support.

The Teachings of Tragedy

Then, finally, we should be able to generate some political support for major alteration of economic policy by pointing to the two examples, now increasingly visible to everyone, which dramatize sadly, but vividly, the ultimate consequences of the policies we have been following. The two, of course, are the United Kingdom and New York City.

They both demonstrate the ultimate folly of irrational fiscal policy, substitution of controls for competition, confiscatory taxation and growth of debt. They should demonstrate for politicians everywhere the folly and injustice of mere political expediency. Both the United Kingdom and the New York governments have ended up exploiting, not serving their citizens.

I think it is tragic that the great city of New York has allowed its creditworthiness to erode to the point where there is no market for its bonds, despite warnings extending many years back. I can certainly understand Mayor Beame's frustration. But I cannot understand why the city expects other political entities to assume or guarantee the obligations. Investors and voters are the same persons. If individuals refuse to buy New York City bonds, why should those who refuse to buy be forced to underwrite them with their taxes?

Tragic as are the predicaments of both England and New York, they may, if properly understood, warn us away from the economic policies we have been pursuing. They may serve a useful political purpose. Politicians can, in effect, point to these examples as justification for altering their own political stance.

The point of all this is our troubles need political as well as economic solutions. We have the economic solutions well in mind. But until now, the political solutions have eluded us.

Spreading The Word

What might you and I do about all this? Probably the least we can do is begin to advance these and other political arguments to those outside our relatively narrow spheres of business and finance. New ideas and new ways of thinking about old problems always have their genesis in word-of-mouth communications among thoughtful people. Then later they are picked up in the written word and in the mass media. If you want to do more than that and become really active on the political front, some action is necessary.

So where do we go from here? We depend upon a large measure on where we want to go and how effectively we can make our ideas heard in the political arena.

The future of our business depends upon our political as much as our managerial acumen, and that future begins today.
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Just how do you celebrate a Bicentennial? You’ve had lots of practice celebrating Christmas, New Year and Thanksgiving. But there has never been a Bicentennial...and there will never be another. Just as regular holidays depend on people to celebrate them, so does the Bicentennial. And all the Bicentennial commissions and administrations combined can’t celebrate it for you or without you. Trying to celebrate the Bicentennial without a flag is like Christmas without a tree. Our flag is the one emblem that has stood for our country for the past 200 years. So start now. Fly a flag on your house, on your lapel, and on your car window and bumper. If you have a flag, fly it proudly. If you don’t, use this convenient order form. Our publication has been authorized by the U.S. Bicentennial Society to make these hard to find, high-quality flag materials available at prices lower than you would expect to pay (made possible by the large quantity involved with this national program). Order now. Start celebrating our one and only Bicentennial today!

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<th>Quantity</th>
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<td>A1. Home Flag Set(s)</td>
<td>@ $9.95</td>
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<td>A2. Flag without Accessories</td>
<td>@ $7.76</td>
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<tr>
<td>A3. Flag Window Sticker(s)</td>
<td>@ $.35 (any 3 for $1)</td>
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<td>B. Bicentennial Bumper Strip(s)</td>
<td>@ $.50</td>
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<tr>
<td>C. Bicentennial Lapel Pin(s)</td>
<td>@ $1.00</td>
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THE JAPANESE QUALITY CIRCLE AND “UPSTAIRS — DOWNSTAIRS”

By Frank H. Squires

Imagine a group of five or six line workers staying after hours to figure out how to correct a quality defect. Imagine further that the group forms spontaneously, or with no more than a slight nudge from management, and you have the Japanese Quality Circle.

Add to this that, while the members of the circle may be paid overtime rates, this is no more than a mark of management's appreciation — the circle is just as likely to be rewarded with the Japanese equivalent of coffee and doughnuts. The true reward is in the solution of the problem and the consciousness of having made a contribution to the welfare of the organization.

How many Quality Circles are there? W.S. Rieker of Lockheed, writing in February 1975, reports that there are 600,000 circles with a membership of approximately six million! When did this remarkable phenomenon get started? As recently as 1962.

Why do Japanese workers do it? What is there in the Japanese situation to inspire in machinists and assemblers such loyal devotion to the affairs of their employers? Hiroshi Hazama of the Tokyo University of Education, an acknowledged historian of Japanese socioeconomics, replies, “Speaking...”

JAPAN’S WORLD RANKING, 1969
(SELECTED INDUSTRIAL PRODUCTS)

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<th>First</th>
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<tr>
<td>Shipbuilding</td>
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<td>Radio sets</td>
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<td>Motorcycles</td>
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<td>Rayon &amp; acetate filament</td>
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<td>Cement</td>
<td>USSR</td>
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<tr>
<td>Plastic resin</td>
<td>USA</td>
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FIGURE 1
NEW CHEMICAL LIGHT OUTLASTS FLARES

New and unique Cyalume Chemical Light generates light without heat or flame. Device is made in the form of a compact, self-contained plastic tube containing two sealed liquids. The light is activated by bending the tube, allowing the chemicals to mix together. Resulting yellow-green light is said to be safe in areas that contain possibly explosive gases or fumes, making it particularly useful in industrial situations that require extreme safety procedures.

About the size of a cigar, the Cyalume unit provides three hours of useful working light, plus an additional eight to ten hours as a marker light. It is reported to be impervious to wind and water, will not corrode or break, and works ten to twenty times longer than normal flares — even under water. Additional details are available from: Chemical Dynamics, Incorporated, Dept. P, P.O. Box 395, South Plainfield, New Jersey 07080.

REALITY VS RULES

According to Roy W. Walters and Associates, managers sometimes ignore some needs because they don’t fit accepted job design rules. In one case the consultant firm suggested to a company that four workers performing unchallenging, repetitive jobs be rotated to break the boredom. The workers didn’t agree, arguing that even though the job wasn’t the most interesting, they worked well as a team and didn’t want to change.

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QUALITY CIRCLE
Continued from page 33

accept the authority and guidance of the head of the family. He acquired obligations to various members of the family that might take a lifetime to repay, but were not, therefore, represented.

The habit of submission to a formal hierarchy (whether of the family or an industrial organization) made it easy to accept management guidance. Lifetime employment was conceived of as an obligation laid on the employee by the employer; since he might spend a lifetime repaying family obligations, so he would spend a lifetime repaying his obligation to the organization.

This pattern of family life — wherein the members are held together by a matrix of mutual obligations and where there is a recognition and acceptance of hierarchically ordained authority — is elegantly described by Ruth Benedict in "The Chrysanthemum and the Sword."

Although our ancestors all lived like this at one time, it is difficult to comprehend such a system from the viewpoint of a contemporary U.S. citizen accustomed to the primacy of the individual in social theory, and to the individual's freedom to stay or to get up and go. It would seem to him that he was under constraint and, thereby, his individual autonomy and dignity were diminished.

It happens that there is an example of a hierarchical society being shown on TV all over the U.S. It is that brilliant British series "Upstairs-Downstairs." It depicts hierarchy in its purest form.

Those below stairs do not challenge those above, although, on occasion, they offer advice. Those above accept the services of those below with easy grace, and treat them at all times with a most proper dignity. The hierarchical order exists not only between those upstairs and those downstairs, but also within each group; the butler below and the husband and father above.

Indeed, the butler seems to have an easier time of it than the lord and master. As can be observed, those below are diligent in their duties and loyal to the family.

The Japanese situation is not by any means a replica of "Upstairs-Downstairs," but it's sufficient for an illustration. The acceptance of the hierarchy as illustrated in "Upstairs-Downstairs" was swept away by two World Wars. How long it will survive in Japan is a question of considerable import for Japan's industrial competitors.
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