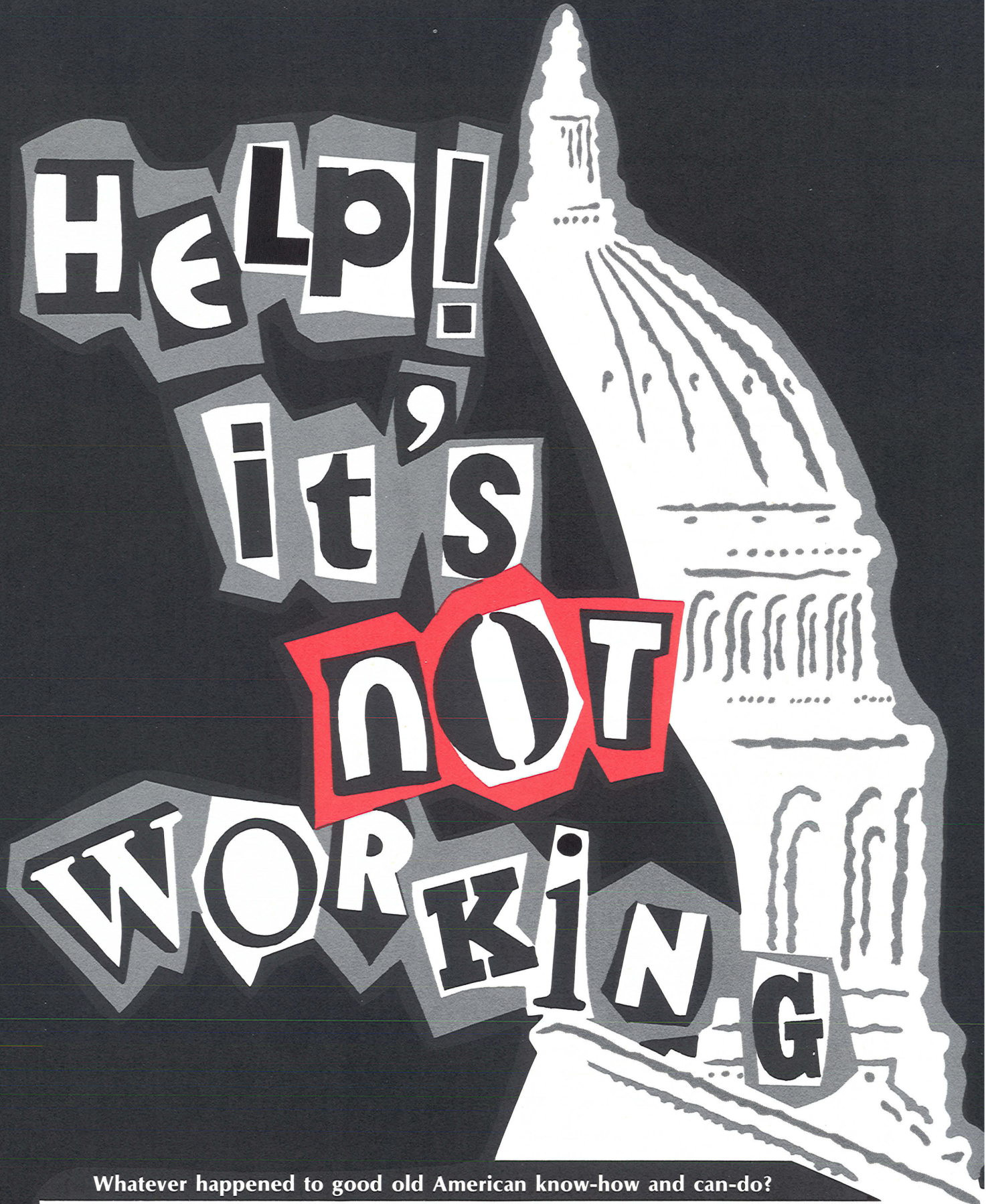


Dividend

The Magazine of the Graduate School of Business Administration • University of Michigan • Spring, 1981



Whatever happened to good old American know-how and can-do?

Some Misconceptions About the U.S. Productivity Slowdown

by Edward M. Gramlich
Director, U-M Institute of Public Policy Studies

Editor's Note: This material was prepared as introductory information for the Dividend Round Table on Productivity, in which Professor Gramlich was a participant (see pages 4-9).

There are several common misconceptions about the U.S. productivity problem, and we could do a service if we could straighten some of them out. Let me try to do that.

There is no doubt that there has been a productivity slowdown. Using the year 1973 as the watershed, growth in total output per hour worked in the U.S. economy was 2.9% from 1960-73 and only 0.8% since that time, a slowdown of 2.1 percentage points (see Table 1). If this slowdown persists, it will alter normal expectations about economic growth in America, and it should not be dismissed lightly. However we should remember that these figures are just broad aggregates that count some things we do not want counted, and do not count others we do. For example, the numerator in the number is total real output in the private business sector. One industry where there has been a slowdown is retail trade—the reason appears to be that stores are staying open longer hours, making it more convenient for us all as shoppers but showing up as reduced productivity growth. Another is mining, because we are digging and drilling deeper for coal and oil. Another is manufacturing, in part because the value of cleaner air and safer work conditions are not counted in the output measure.

A second problem is the labor input measure. One reason that overall productivity, as measured by output per hour worked, is growing at slower rates is that lower wage workers are joining the labor force and working longer hours. Hence in the second row of Table 1 we see that the slowdown in real GNP/capita is less, from 2.9% to 1.5%. Essentially, the sacrifice here is the leisure time of those joining the labor force, and if some estimates are correct, that "leisure" time has relatively little value.

A third misconception is that the slowdown is related to a drop in the share of natural output devoted to private investment. That share may be too low or too high—I do think it is too low. But it has not declined at all in the recent period, as the third row in the Table attests.

A final misconception regards international comparisons. To hear some tell it, the U.S. has dropped way behind in the productivity sweepstakes in recent years. But while U.S. productivity growth has dropped in recent years, the

Table 1
Measures of U.S. Productivity Change (%)

| Annual | 1960-73 | 1973-80 | Change |
|-------------------------------------|---------|---------|--------|
| 1. Growth in Labor Productivity | 2.9 | 0.8 | -2.1 |
| 2. Annual Growth in Real GNP/Capita | 2.9 | 1.5 | -1.4 |
| 3. Investment/GNP Ratio | 15.3 | 15.3 | 0 |

U.S. is actually *catching up* in the international sweepstakes, as is shown in Table 2. In our supposed rapid growth period, from 1960-73, the U.S. had more rapid real GNP growth than only one OECD country, the U.K. In the recent 1973-80 period, U.S. real GNP growth fell off, but by less than any other country. Now we have actually moved ahead of West Germany and the "rest of the OECD" in the growth rate race, and have dramatically narrowed the disparity with Japan, the most rapidly growing OECD country in both periods. We have also narrowed the disparity with the Soviet Union, though not with Eastern Europe.

Table 2
International Comparisons of Real GNP Growth

| Country or Area | 1960-73 | 1973-80 | Change |
|-----------------|---------|---------|--------|
| U.S. | 4.2 | 2.4 | -1.8 |
| Canada | 5.4 | 2.6 | -2.8 |
| Japan | 10.5 | 4.2 | -6.3 |
| France | 5.7 | 2.9 | -2.8 |
| West Germany | 4.8 | 2.3 | -2.5 |
| Italy | 5.2 | 2.8 | -3.4 |
| U.K. | 3.2 | 0.9 | -2.3 |
| Rest of OECD | 5.4 | 2.3 | -2.1 |
| USSR | 5.0 | 2.9 | -2.1 |
| Eastern Europe | 4.1 | 3.3 | -0.8 |

It is not clear what should be made of these numbers, because countries do not directly compete on growth rates and they ought to be allowed to make growth decisions on their own. But we can take some pride in the fact that the U.S. has managed to get through the recent period with less damage than our major trading partners. The figures also suggest that pervasive international events, such as food and energy shortages, may be causing a productivity slowdown that is quite general throughout the world.

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Spring, 1981

Productivity has become a buzz word these days—one that brings a certain amount of uneasiness to Americans who are trying to get used to the idea that we may not be Numero Uno in this department any more. In this issue, we explore various aspects of productivity. Beginning with the problem that people don't even agree on how to measure what we are talking about and going on from there, we hope the following articles will throw some light on an extraordinarily complicated subject.

The Dividend Round Table on Productivity 4

We invited four experts from different fields to sit around a table and discuss the causes of American productivity decline and what can be done about it. Herewith, an edited version of their two hour discussion.

Managing the Defense Department: Why It Can't Be Done 10 *by Harold Brown, former U.S. Secretary of Defense*

Every defense secretary comes to office declaring that he will cut back, save on waste, and organize and manage better. This article explains why each of them leaves office with a certain amount of frustration.

Laziness: Is It Real? by Larry Steinmetz, Ph.D., '64 15

What causes an employee to be unproductive at work? What can supervisors do to cope with the unsatisfactory performer? The author argues that laziness, to some extent at least, is a relative thing.

Reversing the Decline in American Productivity 18 *by Elmer B. Staats, former Comptroller General of the U.S.*

The author discusses some of the sources of American productivity decline, and talks about the need for the development of a national productivity plan.

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A Dividend Round Table on

PRODUCTIVITY

Editor's Note: This is the second in a series of Dividend Round Table discussions on issues of public concern. Our experts spent two hours discussing the causes of American productivity decline, and what can be done about it. An edited version of their remarks follows. Our experts include: Edward Gramlich, professor of economics and public policy and Director of the Institute of Public Policy Studies; Patricia Shontz Longe, professor of business administration, economist, and member of the boards of directors of five major corporations; Stanley Seashore, professor of psychology and program director of the Institute for Social Research who has conducted numerous studies on the quality of work life; and Richard Wilson, professor of industrial and engineering operations whose primary research interest is in automated manufacturing systems and robotics.

Seashore: We need, I think, to include in our conversation today some analysis of the specific factors that cause a particular firm to gain or lose in productivity, because the gross figures on GNP and international comparisons conceal a great deal of change at the level of the individual

firm. My own work focuses on particular firms and particular production systems, and there is a very great variability from one firm to another. For example, in one firm over a five year span, the productivity of the work system as a whole was rising very nicely, but measures of productivity at the level of individual workers were holding steady or even declining. In another firm, the relationship was just the opposite. The system productivity was declining, but effort and input of the work force was rising. People were working harder but getting less output. One factor to look at is the organizational arrangement of the work place and the facilities provided. Also, I understand that 20 years ago something like \$50,000 worth of equipment and facilities were available for each person employed in manufacturing. Today, our new investment rate in manufacturing, after accounting for inflation, is not enough to maintain that amount of capital resources per worker.

Wilson: I too am more concerned about output over input at the firm level than I am at the national level, and I agree with Stan that the improvements will have to be made individually in a lot of locations. I

think it is quite evident that many of the things we see imported from abroad arise from technologies originated in the U.S. But we seem not to be able to use the technology which we have and which has traditionally given us a leg up. So the key issue I think, is what methods, and what environment needs to be established to permit available technology to be more widely and effectively used in the U.S.

Longe: Many new technologies are not economically feasible to develop in the U.S. because of the relationship here between productivity trends and wage rate trends. For example, we know *how* to produce video tape recorders in the U.S. That's not the problem. The problem is we can't do it *competitively* vis-a-vis the rest of the world. The last thing I oppose is high wage rates. What I *do* oppose is high wage rates not justified by productivity. So if we want wage increases, we must provide the productivity to turn them into *real* wage increases.

Gramlich: One industry where the U.S. is not competing well with foreign industry is in automobiles. And of course it is true that in production methods, wage policies,

and output mix, the U.S. car manufacturers have fallen behind their Japanese counterparts. But we should be mindful of the fact that the Japanese government probably has helped their auto industry more than the U.S. government has helped our auto industry, both through hidden import restrictions and the greater reliance on value-added taxes (which can be waived on exports). I personally am very much opposed to having our government follow suit in such a policy, but it may be that our productivity performance is not quite as bad as it looks.

Dividend: What about the charge that American management wants bottom line right now, and thus does not put much investment into innovations that won't pay off until ten years down the line? The Wall Street Journal commented that this emphasis on short term results may have, in effect, "kept Americans breeding better farm horses, instead of trying to develop the tractor." Would you comment on that?

Wilson: I think there may be a difference between innovation in what I would call a conglomerate organization as opposed to industrial organizations committed to a particular line of products. I am beginning to develop a hypothesis which says that the movement of industries or companies from one field into another leads to an absence of technical innovation. I am concerned, for example, by an article in *Business Week* recently which said that utilities are now starting to diversify into other areas. It seems to me that people are saying, "Well, we can't make an early return to justify investment in power generation, therefore, we will abandon that field," which is equivalent to saying, "We will stop trying to be innovative in that field. We will let our current capital investment sit." That's been happening, I think, in a lot of industries. It reflects not only a lack of commitment to an industry, but also, maybe, to a geography. I see plants in Michigan that are saying, "Well, we can't make it here, let's go somewhere else." There are companies operating in 1930 or 1940 facilities with 1930 or 1940 equipment that are



"More top level management salary programs and incentives are being geared toward long-term performance. There is also growing recognition that MBO has its shortcomings, unless it is adapted to the longer run."

Patricia Shontz Longe
Professor of Business
Administration

saying, "we will run it until it is no longer profitable and then we will abandon ship." There is little going on in the technological sense in terms of their manufacturing processes. That seems to be very powerful evidence of a state of mind, a motivational factor that I don't see in Japan, from the outside at least.

Longe: The observation that U.S. corporations have been concerned with immediate results is, I think, quite valid and I think there are three primary reasons why it occurs. First, more and more corporate shares are held by institutional investors who are subjected to performance appraisals as they invest pension funds and the like. The pressure for these institutions to perform well and quickly motivates them to look for companies that are producing immediate, short-term results. The second factor, oddly enough, is the growth of the management by objectives philosophy. It turns out that objectives are much more easily defined and achievable if they are expressed in short-term time frames. The desire to produce results within the corporate structure leads to the easy concentration on measurable performance close at hand. The

third factor is that too frequently the CEOs of our major corporations have arrived in that spot with only five or six years to go in their terms of office. Most CEOs want to leave a record of specific accomplishment and therefore they look for something that produces measurable results within that framework. Unfortunately, the changes in technology, in the development of new industries and of new markets, take longer than five or six years to yield results. These three factors have been a severe problem, but in the last two instances, changes are being made. For example, more top level management salary programs and incentives are being geared toward long-term performance. There is also growing recognition that MBO has its shortcomings, unless it is adapted to the longer run. But in the U.S. we are babies in this field. The Japanese have pursued long term objectives virtually since they entered the industrial era following World War II, and Japanese companies are quite accustomed to unimpressive short term results in return for long-term advantages.

Dividend: What about attitudes dealing with the relationships between people and their jobs? Do these have a bearing on productivity?



“I am beginning to develop a hypothesis which says that the movement of industries or companies from one field into another leads to an absence of technical innovation.”

Richard C. Wilson
Professor of Industrial Engineering

Seashore: Nearly all of our organizations are committed to an outmoded idea of a “job”—a unit of work that needs to be done by a person. But a great deal of productive work now cannot be done by a person, or even by several persons in a series of operations in which each work station is distinct from the others. More often we see that productive activities involve interdependencies, such that the weakest part in that linkage determines the output of the whole set. Assembly lines, some of them, are an instance of this. Now there are ways to get around this, but these ways are not being very rapidly adopted by firms.

Wilson: What holds them up?

Seashore: Ancient practices are hard to change. The pay system, for example, is usually linked to a “job value,” and to change that feature of the pay system in a factory is a big endeavor indeed. To alter the concept of a job or a productive function or a set of responsibilities can be a very grave threat to anyone who regards the job as a form of property with ownership in that defined job. We somehow have to loosen up that way of thinking, so that the relationship of people to their work, their span of responsibilities, is more fluid,

more flexible, less delimited, and better adapted to the technologies.

Wilson: What about the question of resolving work force insecurity? That insecurity may be one of the reasons that it is so difficult to institute change. There is a high amount of insecurity involved in the fact that we do practice layoffs, with few protective programs other than unemployment compensation.

Gramlich: There is a contrary opinion expressed these days that in fact, as far as national policy goes, we are *over* protecting workers. We actually have quite an extensive program of safety nets against unemployment. We have unemployment benefits, we have trade readjustment benefits, we have workers’ compensation schemes, food stamps. All of these have some justification and we do want to have some form of social insurance, but they also have incentive effects. There is undoubtedly some encouragement of unemployment just through the systems of protection, so I think there is some limit to any further expansions. We may not be able to compensate the laid-off worker any more extensively than we do now, or maybe not even as extensively as we do now.

Wilson: I would like to see a program that addresses the question I keep running into—namely, that there are not enough skilled people out there. And yet large numbers of unemployed people seem not to be able to move into the position of being skilled people. Over and over I hear that a limitation to the introduction of new technology is the shortage of skilled people. Yet we have high unemployment.

Seashore: It is said that some major Japanese firms spend two or three percent—sometimes up to five percent, of their payroll costs—on training. I doubt if there is any American firm that regularly spends over 1/2 a percent on training.

Longe: What I envision is that corporations will themselves become major sources of education and training for the work force of the future. And corporations are certainly not going to train people for whom they have no jobs, so there should be a better match between the kinds of training provided and the kinds of positions that need to be filled.

Wilson: I’m attracted to the argument that industry will, in fact, pick up the training responsibility. It will not be a new thing for them. For example, apprenticeship training in the U.S. has typically been done by industry in-house. That’s been the only source of our tool and die makers for decades as far as I know. So it can be done, but it seems to me that the *transfer* from one technology to another is something which our industry probably will not do. For example, when the automotive industry is laying off people, it’s unlikely that they are going to train people for the electronics field even if there is a shortage of people in that area. And so there is a mismatch. It’s a difficult dislocation problem because the people involved would first have to make contacts in a different geographical area, and then pull up roots and move their families, to make a transition to another industry. That strikes me as the essence of the problem. I don’t propose that I know what to do about it.

Longe: Individual mobility has always been one of the answers. And

obviously, with the population and labor force shifts that have occurred, it is clear that many people are resorting to mobility on their own best-interest initiative.

Dividend: But in terms of policy, who should be helping with this? The government? Private industry?

Longe: Surely the resources the government has spent on countless individual programs might have been more productive if Washington had simply chosen a limited number of objectives and attempted to reach those. Let's take the spending on the Trade Adjustment Assistance Program. We're heading toward two and a half billion dollars a year for this at the current time. That money surely could be more productive if used in massive retraining than in simply providing income.

Gramlich: I guess I find some of this a little depressing—not because I think it's wrong; it's probably right. A lot of the ideas that have come up in the past hour on why our productivity growth is lagging are probably right. But it's not obvious to me what anybody can do about them, other than perhaps starting at the business schools and really trying to develop a different atmosphere or different feelings about management or about financial investment on the part of institutional investors or things of that nature.

Wilson: Since you raised the question of schools, I'd like to comment on what is going on in higher education in the production area. In the 1960s, engineering schools watched their work in manufacturing processes and manufacturing technology disappear. There was no research support in the area. There were few faculty available in the field. As a consequence, nationally we essentially abandoned production engineering. And I understand the same thing is roughly true in the business schools. Operations management was of little interest, and nobody taught in that area. What did we teach? We taught aerospace technology and electronics with defense applications, and focused on large enterprise issues, with the result that we abandoned not only the production technology

“To alter the concept of a job or a productive function or a set of responsibilities can be a very grave threat to anyone who regards the job as a form of property with ownership in that defined job. We somehow have to loosen up that way of thinking.”

Stanley E. Seashore
Professor of Psychology



but also, as I see it, a lot of activities having to do with entrepreneurship as well. I think that's now being rectified, but it's a difficult scramble. And in engineering at least, a comparison of numbers of graduates in the U.S. with those abroad is also very depressing. I think the problem extends right down into our public school system. If we address the question about where we get workers who are skilled and capable, I think the schools are part of the problem. I was really startled to pick up Bob Cole's book* and see an example of the kind of work that was done in the quality control circle in the Japanese firms. The level of technology the workers were using in a statistical, mathematical sense to approach the resolution of a quality problem was something which would require a college graduate here—and the workers there presumably were the equivalent of our high school graduates.

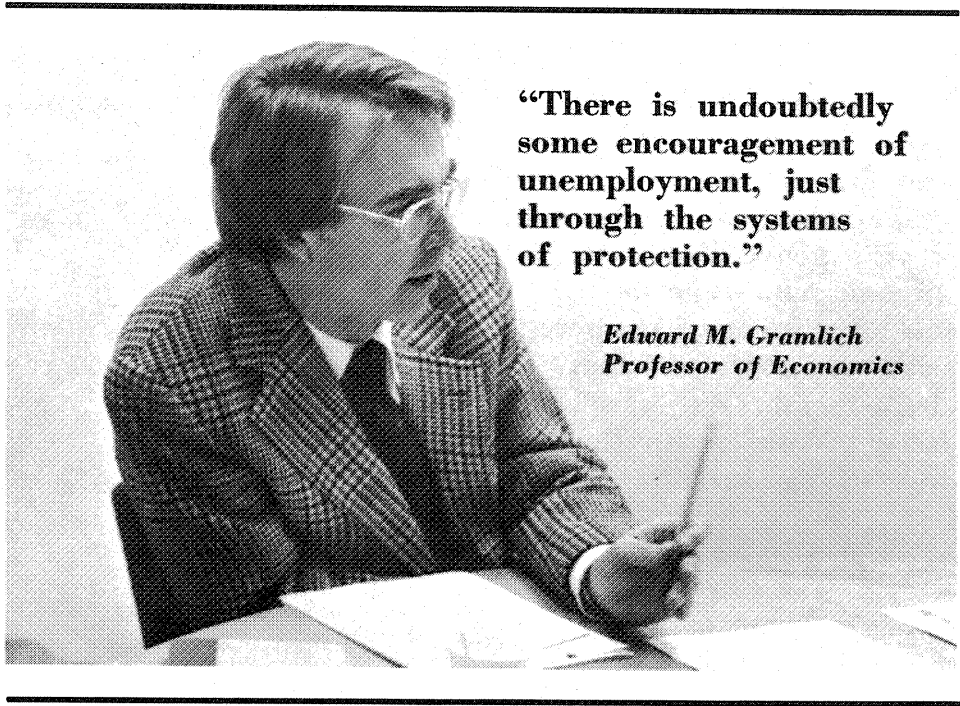
Seashore: It can be done. I know some firms that have extended on-the-job-

* *Work, Mobility and Participation—A Comparative Study of American and Japanese Industry* by Robert E. Cole, Director of the U-M Center for Japanese Studies—U. of California Press, 1979.

training into fields that are non-traditional. For example, they teach statistics to their production workers. Why? Because the workers need to know something about sampling and something about variability in order to do their own jobs better.

Longe: Actually, I'm optimistic about productivity in the future, and let me just mention some of the reasons. First, we have a greater awareness of the problem today than we did in the past; were concerned and ready to act. Second, there will be a slowdown in the rate of entry of workers into the labor force. The number of new entrants should decline by about 50% in the next ten years compared to the last ten years. In addition, the number of new marginal workers—the very young, the housewife/homemaker moving out of the home—will be fewer. And there is hope that the quality of education will improve in the 1980s. It's been scandalous but it's likely to improve because we're increasingly concerned as a nation over what's going on in the high schools, and I think that will help.

Seashore: I can't resist telling a brief story here. Some of my colleagues have been tracking several thousand boys starting from when they entered high school. Some of them, of course,



“There is undoubtedly some encouragement of unemployment, just through the systems of protection.”

*Edward M. Gramlich
Professor of Economics*

were dropouts from high school. So the interesting question is, what happens to dropouts compared to those who stayed in school? It turns out that within a few years the dropouts are indistinguishable from those who finished high school with respect to their occupation, their income, their knowledge of public affairs, their satisfaction with life, and so on!

Gramlich: I can see that many of the criticisms about short term management, inadequate structuring of work and so forth are appropriate, but it is not obvious to me why that wasn't the case in the fifties and sixties, and what is going to change it for the better in the eighties?

Longe: We had many things going for us in the fifties and sixties. New technologies were available that could be incorporated into the U.S. economy. There was a better relationship between monetary wages and productivity, thus producing better real wage results. We had tremendous export markets. We also had, if there is such a thing as a national mind-set, a feeling in the fifties that carried over into the early sixties that *jobs* were important, that company loyalty was important, that individual effort was important.

Much of this was the heritage of the unfortunate experiences of the thirties which most people remembered very vividly. I think we became wayward in the late 1960s and the 1970s. That is when we lost our edge in the rate of change in productivity. I should point out that the U.S. is still considered, by all imperfect measurements, to be the most productive country in the world. We are about 30% more productive than the Japanese. About 15% more productive than the Germans and about 5% more productive than our nearest competitors, the Canadians. What we are concerned about is the slowdown in productivity gains and what this means for the future. When Stan talked about the variation he saw from one firm to another in their productivity, we have a significant clue as to the best way to get an immediate jump in productivity—by immediate, I mean within three to five years. In almost every industry there are leaders in productivity and, if the methods they use, the techniques they employ, could be more widely disseminated so that the inefficient firms in those industries could capitalize on the best available practices, we would have a tremendous short-term spurt in productivity.

Seashore: I think the estimates are correct that suggest that a productivity gain in the range of 5% to 10% could be accomplished with little or no change whatsoever in technology. All that would be required would be some changes in the practices at the workplace and in relationship to management that have to do primarily with making better use of an existing technology. Some relatively small changes that are within the local control at the workplace, don't require any big new "program," but can add up to a significant impact. I have seen it happen. In a clothing factory, productivity went up about 20% in two years. Waste rates in a production system dropped from 30% down to about five percent in about six months. Nothing changed but the information flow and relationships at the work floor. These gains can happen, and they are happening every day somewhere, but not at the rate we need to make a significant impact on the economy.

Gramlich: One thing we haven't talked about very much is the role of national policy in all of this. Whether it has been at all to blame and whether it ought to be changed and if so how. I am for measures that try to stimulate investment. The fact that firms are not allowed current cost depreciation is undoubtedly a big impediment to investment. It may be that we rely too much on capital taxes such as the corporate tax, and that we ought to convert more to value-added taxes. Taxes in general do not recognize inflation, and it may be that indexing of various kinds would be a good idea. There are other suggestions like that, but all of them do add up to revenue loss. So unless something else is cut back, the budget deficit would rise and so would interest rates, and this would in turn lower investment. Thus a careful balancing of priorities is necessary. But something should be done to try to stimulate rational investment.

Longe: We have had a tax structure and a national economic policy for many years that has favored consumption at the expense of investment, and unless we right the balance, we probably are trying to increase productivity with one hand

tied behind our back. Moreover, too much so-called investment has gone in areas that are not cost effective. It is one thing to say we should invest in anti-pollution equipment and work-safety programs. It's quite another matter that the government does not permit industries to use the most cost-effective programs, but instead mandates specific responses, many of which have impaired productivity. So I think we have to face the fact that we have come to the end of the road where we insist on better and better standards with no demonstrable payoffs in terms of cost benefits. We must rewrite legislation to permit firms to choose the most effective techniques. Let me comment on inflation, which debilitates the economy and encourages laxity in virtually everything economic. We should *not* index; we should eliminate the causes. For example, today, if there were such a thing as a long-term corporate bond, it would yield rates in excess of 15%. If you look at those rates and compare them to a given investment opportunity, it means that today's projects have to yield 20% and more in order to be justified. Well, I am afraid many changes that *could* be made to improve productivity have rates of return far less than that, even though collectively they could produce tremendous results. But unless we can lower inflation and therefore interest rates, it's hard to justify many investments that would be useful.

Gramlich: I would like to make one negative plea about public policy. We hear from various sources that the U.S. needs an industrial policy. Nobody is quite sure what that implies. One thing it could imply is that the government gets into the question of picking out favored industries and giving maybe particular tax breaks to those industries. As I mentioned before, they do some of that in Japan. I hope we don't follow suit. It seems to me that what is *not* needed is to shield companies from the market, or from import competition. Such a policy would work particularly in the direction of insulating individual pay from productivity, and that is just the wrong thing to do. We want to create the incentives that we need for management and workers to

begin to see the connection between their own productivity and their own rewards.

Seashore: I think a significant change in the attitudes and views about productivity can be brought about by creating conditions so that people are rewarded for holding such attitudes and the behavior that goes along with such attitudes. I think we need to do more than we have done in the way of motivational analysis of economic problems. For example, if you examine the system for paying people in almost any firm, you will find that it has deviated far from any original intention to reward people appropriately for productivity. A lot of people say there is little or no connection between their pay and how well they perform. At every level of analysis there are motivational features that are treated rather cavalierly instead of being made a central issue. Some of the stimulus for change in our productivity may come from people who think about such things. Perhaps that impact could be as great or greater, in the short run, than the impact of speeding up technological development.

Longe: Incentive and reward systems for top management have never been more oriented than they are today toward producing the desired long-term results. The revolution in the board room has already taken place.

Seashore: How about our earlier conversation in which the opposite was being said?

Longe: I am reporting what I see happening now. Believe me, I am fully aware of what we said earlier being true. But the scene is changing rapidly.

Dividend: And what about the institutional investors, and their tendency to look for short term results?

Longe: Increasingly, firms are doing two things: 1) they are educating financial analysts as to the importance of long-run strategies and potential; 2) they are deliberately wrenching themselves away from running their companies to satisfy the institutional investors if it means future competitiveness will be undermined.

Further Reading

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Managing the Defense Department

Why It Can't Be Done

by Harold Brown
Former U.S. Secretary of Defense

The Defense Department was established over a third of a century ago, incorporating and organizing the elements of the national military establishment. Much of the impetus for that step came from the experiences of World War II and the immediate post-War years. One goal certainly was to integrate the military policy of the United States more closely with its foreign policy, a task aided by a single, central civilian management of the various armed forces and their activities.

A second motive certainly was the perceived need for efficiency of operation, the avoidance of waste and duplication, and the application of sensible business practices in procurement and other areas where such procedures could reasonably be expected to save the taxpayers money. The original hearings on the legislation establishing the Defense Department, the legislation itself, and the testimony on and text of various amendments that have gradually restructured the Department since, all make frequent use of such language and reference to such principles.

Certainly the activities of the Defense Department are vast enough

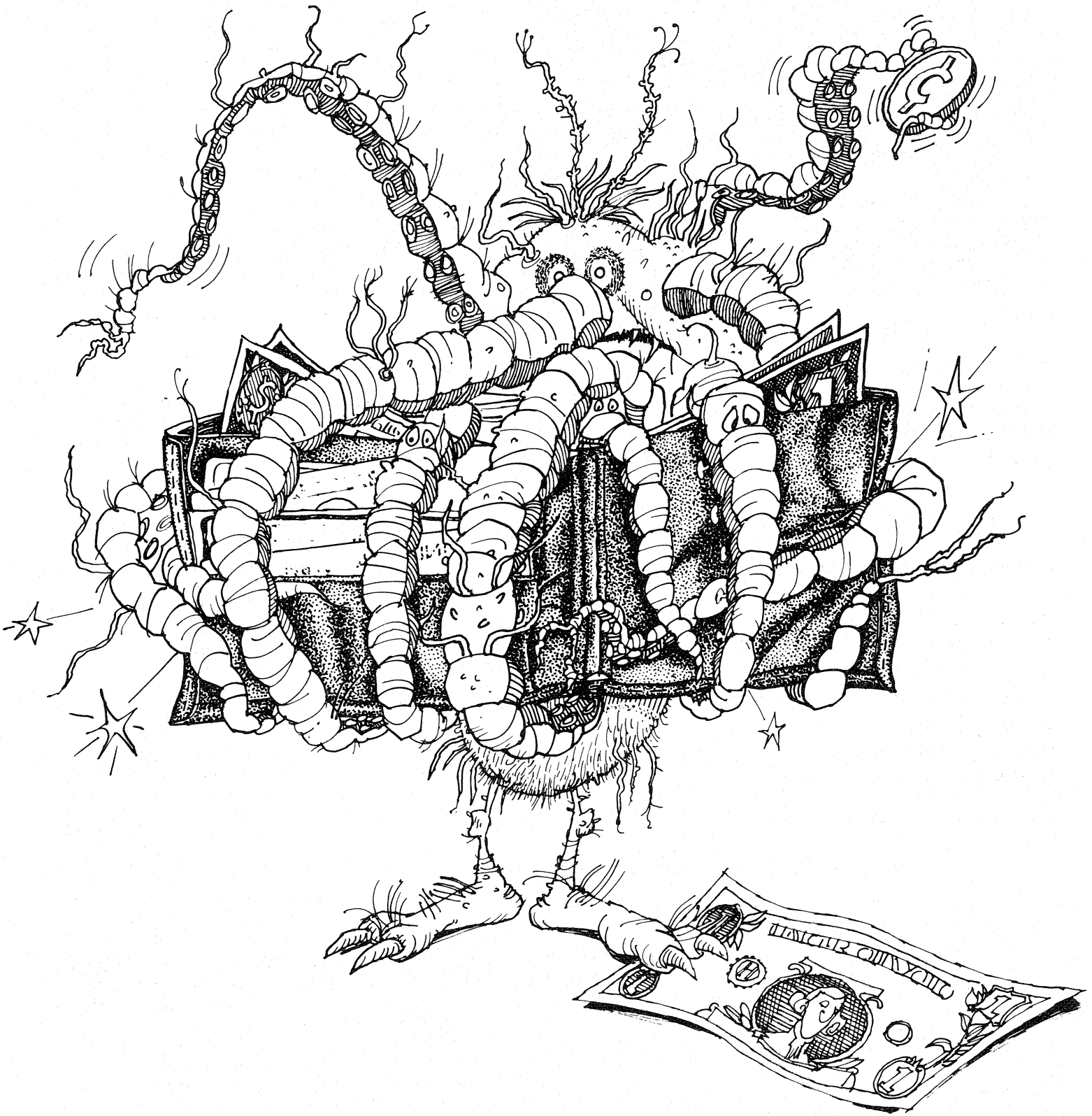
to offer considerable scope for management. Many of them seem—and some of them are—similar enough to business to allow the application of business principles and practices. And examples of obvious waste and inefficiency are not hard to find. Indeed, practically every year during the budget process a billion or so is pared from the totals (but never allocated to line items) on the basis that “waste, inefficiency, and fraud” can be reduced by that much.

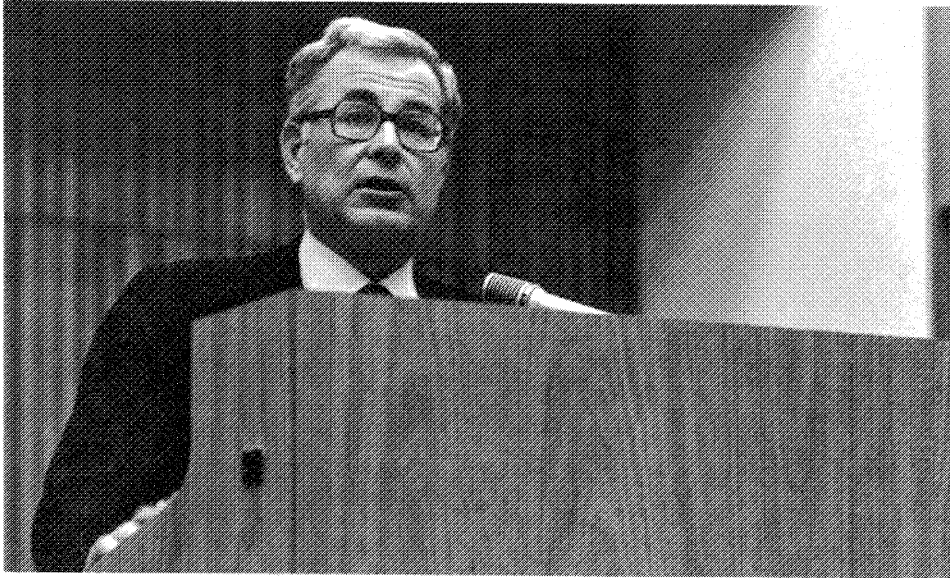
The comparison with various business enterprises is not hard to make in statistical terms. The defense budget now proposed for Fiscal Year 1982 is well over \$200 billion dollars. That used to dwarf individual enterprises—but I note that now it's only about double the annual sales volume of Exxon. In a way that juxtaposition shows that the comparison with business is far from exact: the Defense Department has an enormously diverse set of products, though only one line of business. In terms of people, the contrast with Exxon is more obvious: the Defense Department has over two million uniformed personnel, about a million civilian employees, and will be supporting in Fiscal Year 1982 about 2½ million

workers in defense industry. The processes associated with 70 billion dollars annually in research and development and in procurement (more like 90 billion in the Reagan administration's Fiscal Year 1982 budget) certainly bear substantial resemblance to corresponding activities in the private sector.

It is thus no surprise that every defense secretary comes to office declaring that he will cut back, save on waste, and organize and manage better. And each succeeds—to a certain extent; some are more successful at that particular duty of office, some less so. But each—including myself—has left office at least as frustrated at what he has failed to get done as pleased with what he has accomplished in improving management and efficiency. There are still four tactical air forces. There are still too many military bases and installations for the present or any reasonable prospective size of our armed forces. There is still a mismatch in the procurement of initial equipment and spare parts. There are still 50 cent nuts and bolts that cost \$50. Why?

I believe that many—though by no means all—of these disappointed hopes and expectations can be traced





“In many cases we defense secretaries have mixed in our minds, in our rhetoric, or in our actions different objectives, all of which need doing but which have differing—sometimes contradictory—criteria. Furthermore, the analogy with business, useful in some contexts, and some parts of the defense management process, breaks down in others.”

About the author: Harold Brown, former Secretary of Defense in the Carter Administration, presented the 15th annual William K. McNally Memorial Lecture March 25 in Hale Auditorium. This article is excerpted from that speech. Brown is a physicist with three degrees from Columbia University. He was director of defense research and engineering for the Department of Defense from 1961–65; Secretary of the Air Force from 1965–69, and president of the California Institute of Technology from 1969–77 when he became Secretary of Defense. He has served in advisory and consulting roles with the Polaris Steering Committee, the Air Force Science Advisory Board, the President’s Scientific Advisory Committee, the Conference for Discontinuance of Nuclear Tests. He was a U.S. delegate to SALT deliberations in Helsinki, Vienna, and Geneva between 1969 and 1977.

The full text of Brown’s speech can be obtained by writing the Division of Research, Graduate School of Business Administration, University of Michigan, Ann Arbor, Michigan 48109.

The McNally Lecture is named in memory of former Regent William K. McNally. Other speakers in the series have included Harvard economist James S. Duesenberry, humorist Richard Armour, and former U-M Medical School Dean William N. Hubbard, Jr.

to a number of confusions and misconceptions. In many cases we defense secretaries have mixed in our minds, in our rhetoric, or in our actions different objectives all of which need doing but which have differing—sometimes contradictory—criteria. Furthermore, the analogy with business, useful in some contexts and some parts of the defense management process, breaks down in others. The goal of “managing” the Defense Department entirely like a business, to a bottom line measured by profit or any other *single* criterion, is infeasible. Indeed, overall operation of the Defense Department cannot even use the precisely same management criteria as a private non-profit, or even those appropriate to other parts of the government.

Let me list briefly various objectives of the Defense Department. The listing itself will suggest some of the differences from normal “management” criteria.

1. The armed forces need to deter armed conflict and, if necessary, to fight. They needed to be organized. That organization includes the formulation of doctrine, the creation of strategy and the supporting war plans, the recruitment of personnel and their training, and the deployment and sustaining of forces.

I would note that this particular category of objective already contains activities that require very different kinds of management, although certainly these needs influence each other. Recruiting and training has rather a different management style from devising global strategy.

2. The Defense Department needs variously to procure, maintain, and often to develop and to repair, materiel ranging from aircraft carriers to light bulbs.

3. An important responsibility of the Secretary of Defense, working both with his subordinates and with his colleagues elsewhere in the national security area of government, is to see that defense policy and the actions of the Defense Department *support* the foreign policy of the United States.

4. The Defense Department needs to deal with constituencies—including the public, congress, the media,

associations of retired military people, and the various national security-related associations. The acceptability of defense budgets, programs, defense activities—all depend critically on the attitudes of some or all of these constituencies. Their views therefore have to be taken into account. A great deal of consultation, explanation and persuasion must be undertaken.

When observers talk about managing the Defense Department, they usually mean the first two of these activities—organizing to deter and to fight, and procuring the necessary materiel, infrastructure, personnel and funds (though this brings us back to the need to deal with the constituencies). This sort of management involves the usual tensions: between centralization of policy and planning and decentralization of execution; between line and staff functions; among claimants for slices of the pie.

Styles change, ebbing and flowing between centralized and decentralized management. Each of these methods can work relatively well or badly depending on the times and on the skills of the people involved—just as is the case in business. But there are two other contrasts with business management that make the Defense Department very different from General Motors.

The first is that we are talking about the government. There is no single number that provides a good measure of how well the Defense Department is being managed. And there are a whole set of conflicting and often legitimate forces whose pull is neither toward efficiency nor toward combat capability.

Beyond this difference there is quite separately a balance to be struck between low cost and combat effectiveness. It can be noted, accurately, that for any level of effectiveness, the job needs to be done at the lowest cost. But there are doctrinal, professional, and foreign policy differences among well informed and experienced and dedicated people about how different forces compare in military effectiveness.

The criteria of effectiveness vary both according to external circumstance and according to the internal assumptions on the basis of which the

comparison is made. Some of this variation is susceptible to economic analysis or systems analysis, some is not. For example, there are differences between what is efficient in peacetime and what is efficient in wartime. In principle, we want to be able to structure for optimum wartime use, but clearly we are less likely to pay the often high premium for such a configuration if we think the likelihood of war remote.

Clearly there is and will always be great political pressure from local officials, from members of congress, and in the White House staff on questions of realigning military bases in a way that would reduce jobs anywhere (and every realignment reduces jobs somewhere) and on where defense contracts will go. And that pressure is not directed toward efficient management by any economic standard.

Let me give some other examples of the pulls on management with respect to efficiency. Shouldn't there be centralized procurement? Yes, but the real question is—"On what items?" It seems quite appropriate to centralize procurement of standard items, and the Defense Logistics Agency was set up to do just that. But how far should we go?

Light bulbs and raincoats can be most efficiently procured that way. But what about aircraft engine parts? Those critically affect combat readiness, and a very good argument can be made that they should be procured by the particular command that will be carrying out the corresponding maintenance and repair.

What about centralized training? There the example of undergraduate helicopter training is a good one. There is no reason fundamentally why initial training in helicopters cannot be the same for the Navy as for the Army. Indeed, the Army has been training many Marine pilots for this purpose. But even when the Navy has agreed to the consolidation, members of Congress in whose state separate Navy undergraduate helicopter training is carried out reached a different military conclusion, and were able to sustain that position in

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the Congress overriding the executive branch budgets.

Both of these last examples overlap with the second category of differences between managing the Defense Department and managing civilian activities, that of combat effectiveness. The arguments about cost and efficiency will always be accompanied by differences of view on relative combat effectiveness of the less expensive ways of doing things. These will be matters of judgment. Some of their elements can be analyzed and quantified, others cannot. Of course, the same is true of many aspects of business. Not even the best opinion poll will safely predict consumer preferences. And a revolution in Iran affects the price of gasoline and sales of automobiles just as it affects the feasibility of a given U.S. military strategy in Southwest Asia.

But combat capabilities and military posture bring a sense of urgency and importance into the debate that can easily transcend the analytical and economic arguments for efficiency, or even for effectiveness measured in some particular terms. If this does not overwhelm the

decisionmaking of the Executive branch, it can still do so in Congressional deliberations, especially when it is reinforced by the political interests of a state or a Congressional district. Moreover, though the services develop and procure equipment, recruit and train personnel, they do not make the decision on deployment or on employment of forces in combat. That function is carried out by the unified and specified commanders on instructions of the Secretary of Defense transmitted through the Joint Chiefs of Staff. This means that the services, when they weigh in on decisions as to alternative ways of accomplishing a given combat mission, do so primarily in the role of suppliers rather than of users.

Let me give some examples. One such matter is the use of land-based versus sea-based tactical air in a conventional role (i.e., a non-nuclear role). The question goes beyond the issue of which form of deployment is able to deliver a certain amount of ordnance on target for a given cost. The answer on that is rather clear, over a campaign of several months or more. But will land bases (or will sea-support bases) be available? How soon after a crisis arises will they be available? How much materiel can be prepositioned at land bases for land-based air? All of these questions depend upon the particular contingency envisaged. All are subject to a world-political judgment about how such plans will interact with our foreign policy.

And all are quite aside from the simpler issue of whether land-based air forces, when in place, will be more accurate, more responsive, more efficient and more economical. Many of those simpler questions are subject to quantitative analysis—though different analysts are likely to come to different conclusions. The diplomatic and geopolitical questions are much more difficult to analyze, and cannot be easily represented numerically.

Another example is the deployment of ground forces. The so-called “light” ground forces can be deployed with very much less in the way of airlift requirements, but once they get there they will have less mobility as well

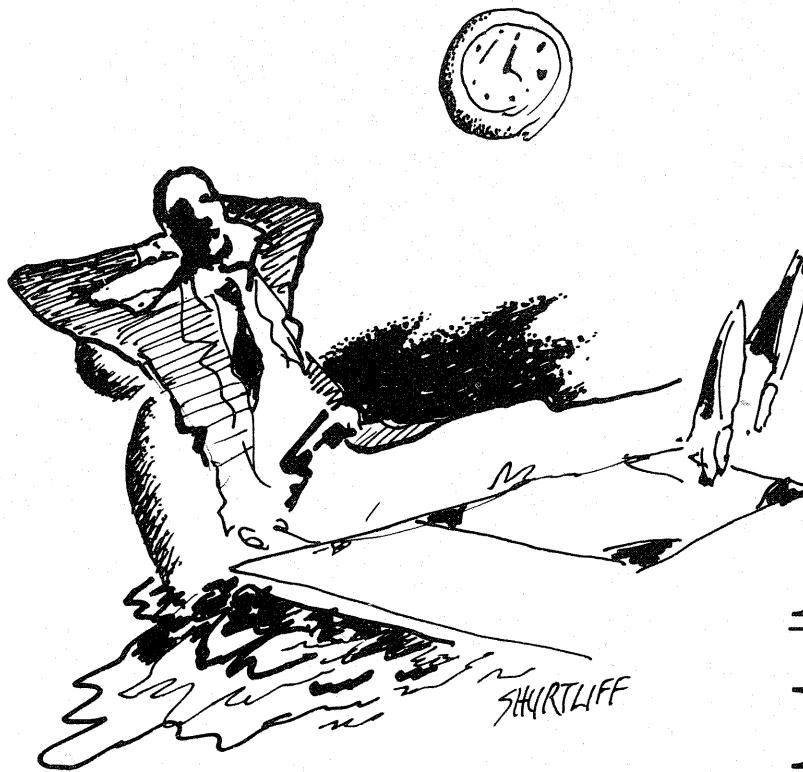
“The pull of the need to be able to fight a war will always limit the peacetime efficiency of the defense establishment.”

as less punch, because they lack armored vehicles or helicopters to move them. Thus the choice of the mix between armored forces and infantry will depend largely upon such issues as the nature of the forces that they are expected to fight, and whether they will be defending an area of value or are intended to move forward from wherever they are disembarked into surrounding areas. These questions, as much as questions of accuracy of ordnance delivery, target detection and identification, sortie rates, which are the usual stuff of systems analysis, are likely to be the critical ones.

I could go on. The management of the Defense Department needs to be able to choose: between a B-1 or a bomber based on new technology; between a land-based MX ICBM or a sea-based alternative; among aircraft carriers, attack submarines, and surface ships equipped with cruise missiles. These choices are subject to much analysis and even more judgment. It is common when a choice is made with which a particular commentator disagrees, for that commentator to characterize what is procured as “waste.” And so it can be, in one sense. Suppose a decision is wrong because it turns out to produce less capability than some alternative for given expenditure. Or suppose it mistakes the deployability or usability of a particular weapons system through misjudgment of international political factors. In either case, the decision produces less capability than the same funding invested elsewhere could have done. (And judgments as to what is the best choice will vary widely not only

before the system is procured but even after it is procured and used.) It is not improper to call such mistakes “waste.” But that is not waste in the same sense as unnecessary extra military bases in the United States which add nothing to our capability, or paying \$50 for a 50 cent part.

It can be argued that these kinds of insoluble conflicts exist also in any large organization. External political pulls act on every major government agency. Every major corporation faces difficult choices, with many of the elements largely judgmental and only partly quantifiable. All true. But the intensity of the pressures, and the importance of the stakes in the Defense Department, are so different quantitatively as to produce a qualitative difference. Individual corporate mistakes can have catastrophic financial effects for many people, wrong domestic policies can damage the country, but mistaken defense (and foreign) policies can kill us all. That consideration alters the nature of the management process. In that sense, the Defense Department can't be fully “managed,” or at least it cannot be managed like a business. The pull of the need to be able to fight a war, will always limit the peacetime efficiency of the defense establishment. The problem will always remain that of balancing those pulls by exerting strong leadership. They cannot and should not be entirely overridden. The pull of conflicting domestic interests represents democratic government. The pull of the need for combat capability, flexibly employable in a variety of unpredictable circumstances, and against opposing forces whose capabilities cannot be confidently predicted, represents a crucial part of national security. To manage defense efficiently and at the lowest possible cost along presumed business lines of management and organization is a useful standard. But there are prices we cannot afford to pay for meeting it. One is the abandonment of democratic control. Another is the loss of a war. Defense cannot be “managed” like a business. But it can be led so as to preserve most effectively our national security interests.



Laziness Is It Real?

"What's wrong with those people? I've given them every opportunity to do their job and make a little money and they just want to lie down and go to sleep!"

"You'd think those people have no motivation at all—I don't think they did a thing while I was on vacation."

"They don't make young people like they used to. Why when I was a youngster I would have given anything to have the opportunity, education and advantages that these people have. Why don't they even try?"

"Boy, his 'get up and go' has 'got up and went'."

The above quotations—and many others like them—are a common lament heard from people who attend management education seminars I teach on Managing the Marginal and Unsatisfactory Performer.

During the years that the seminars have run, much interest has been generated in the subject of lazy employees. People will flatly state that many employees are simply lazy, or, at best, not motivated. If

you ask seminar participants, "Do you believe that some people are lazy?" You will find that almost everybody believes *some* people are lazy and about 15 to 20% believe that "a lot" of people are lazy.

Are People Really Lazy?

Those involved in behavior modification and the correction or change of human performance problems at work are often inclined to suggest that people are not lazy. They tend to argue that if people always knew what was expected of them on the job, when it was expected, and were otherwise free from interference in doing the job, that there would not be any performance difficulties. But as

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one wag said, "Given all those operating assumptions, I'd be an all-pro running back—especially if I were free from all interference from doing the job."

It is certainly true that workers don't always know what is expected of them, and thus cannot or do not perform adequately. Many and notable are the instances of employees receiving poor feedback on their performance. Sometimes managers or supervisors give inaccurate feedback to an individual on the adequacy or acceptability of his/her job performance. If someone *doesn't* know what is expected, it is unfair to call him "lazy," although, indeed, he may appear to be lazy or unmotivated. Furthermore, the pejorative "lazy" is inappropriate for someone prevented from doing a job because of lack of tools, materials or other resources such as fuel or electricity.

It is also true that some bosses even set up the situation so that their employees do not do the assigned job. A classic example: the boss who leaves for a week's vacation, giving explicit instructions for the employee to perform a specific job, with the added instruction, "if such and such

“Managers particularly don’t buy the idea that all poor performance is caused by inept supervision.”

happens, check with me before deciding what to do.” As luck would have it, “such and such” happened, the boss could not be located, and the subordinate elected to carry out the order given—namely “check with me before deciding what to do.” When the boss returned to find the job not done, he might have thought the subordinate was stupid and lazy. However, it is important to understand that employees are strongly motivated not to alienate the boss by violating a clear and direct order.

There’s No Such Thing as a Lazy Employee, Just Poor Supervisors . . .

Most managers simply don’t buy the idea that there is no such thing as a lazy, unproductive employee. They particularly don’t buy the idea that all poor performance is caused by inept supervision. Most managers *will* agree that the majority of employees are relatively productive and efficient, but they will not agree that none are lazy. In a survey conducted by the author, not one single supervisor was willing to concede the point that if an employee is managed properly, there will not be any productivity problem; that if the supervisor has done his/her job well, there will be no difficulties in obtaining the desired level of job performance.

Actual studies are sometimes cited to substantiate the position that some people simply don’t do what they should do, regardless of the manager. There are studies that show little, if any, significant difference between the productivity achieved by subordinates of managers who are doing everything “right” and those of managers who are doing everything “wrong” (see for example Phillip P. Appelwhite, *Organizational Behavior*, Englewood Cliffs, New Jersey, Prentice Hall, Inc., 1965).

When a human relations expert states that “in 62% of the

cases, bosses using enlightened management got better results than those who didn’t,” it is clear that in 38% of the cases, bosses who weren’t using enlightened management got better results. Some authorities who have been publicly acclaimed by other experts in the field of motivation, and who have published widely to the effect that people are not lazy, have found out later (sometimes subsequent to getting real jobs managing real people) that they too were disappointed in the way people responded to work. In the words of one very distinguished writer, Douglas McGregor of Theory Y fame, “I couldn’t have been more wrong.”

It need not be argued that the number of lazy people is a large percentage of the population. It only need be recognized that some people *are* lazy. Because of this, and the other complicating factors that cause an employee not to do the job, there is a fairly large population of unproductive employees or people who are not effective at work.

Laziness is Relative

Laziness is a term that is hard to define. It has many of the same definitional problems as the word “alcoholism.” What is an alcoholic? Some people will say a person is an alcoholic if they have a drink every day. But people who study alcohol consumption in the U.S. argue that better than one-third of our adult population would be considered alcoholic by that definition (of course, some people argue that better than one-third of our adult population are alcoholics!) Others say one doesn’t have a problem with alcohol unless his drinking behavior has a negative impact on his ability to do the job or on family relationships. But many is the salesman who can attest to the fact that non-

drinking behavior has caused the loss of sales. In this case, non-drinking had a negative impact on job performance. Are these (non-drinkers) alcoholic? Their drinking behavior—i.e. not drinking—had a negative impact on their job performance!

The working definition of alcoholism for most experienced supervisors is: “An alcoholic is anybody who drinks more than you do.” The working definition for laziness must be essentially the same: “A lazy person is anyone who doesn’t work as hard as you do.”

It is no secret that people who become managerial and executive people work hard. Studies show inevitably that “highly motivated” people become managers. Necessarily, less highly motivated people *don’t* become managers. Thus, most managers are going to see a lot of “lazy” people at lower levels in the organization. Very seldom do we hear managers complaining that *their bosses* are lazy. Laziness, to some degree, is relative.

The Golden Rule

Why are supervisors so blind to the fact that their own high personal levels of motivation cause them to think other people (mostly their subordinates) are lazy? The reason has been instilled in the very veins of the typical hard working supervisor in the United States. That is the belief that most people look at things in the same way—which is, essentially, the Golden Rule. The point which must be recognized is that if one does unto others as one would have others do unto oneself, *then* the assumption is made that others will see things the same way as the viewer sees them. Thus, when a child is told to treat other children as he/she would

“Very seldom do we hear managers complaining that their bosses are lazy. Laziness, to some degree, is relative.”

like to be treated, the idea is if you don't take toys from others, they won't take toys from you. Most children intuitively see this as preposterous logic, knowing full well that the rule falls apart upon close scrutiny:

“How come Sissy took my toy— I didn't take hers?”

“She's younger.”

“Yea, but I didn't take hers.”

“Shut up and quit arguing with me!”

“If you want me to shut up then you be quiet.”

BAM!!

Let us see how this faulty logic fails us as supervisors. If aspiring managers want nothing but opportunity to get ahead, they are very inclined to want to demonstrate to their boss how much drive, initiative, and capability they have. If the same supervisors, in turn, treat a subordinate the way they want to be done unto, they will give that subordinate the opportunity to demonstrate how much work the subordinate can handle. But if the subordinate doesn't have aspirations to rise higher in the organization, then the boss will be disappointed in the “lazy” subordinate who looks at the “opportunity” as PRESSURE and fails to rise to the challenge.

We Were All Born Equal

Another basic of the American system that causes dissatisfaction with subordinates is the idea that all Americans are born equal. It is common for supervisors to fight with the meaning of the idea that people are born equal. Everyone knows the old saying about equality: “Equality is under the law, not in respect to physical and mental attributes.” But all must be treated equally under the law. And most supervisors are told to believe that because of this, super-

visors must level the same expectation upon all people that they do upon themselves and their better (more highly motivated) workers. It is dismaying to them to have to face the reality that all others do not have the same motivational ambitions. Thus people become disappointments to them and are perceived as “lazy.”

Modesty is a Virtue?

Many high-achievement people are “whipped into shape” in their formative years by being told that modesty is a virtue. The front-running child who excels is often told to slow down and cool it; give others a chance. Unfortunately this idea can cause the high-achievement person to assume that others really are motivated but they just “haven't had a chance.” When this lesson carries over into adult life it can cause the individual who has high expectations of himself to assume that others have the same high level of expectations. Such a highly motivated individual will be disappointed if he gives a work assignment to a person who truly has a less high level of performance expectation.

It is certainly true that some people have heavy mental preoccupations with success at work, while others do not. David McClellan, in his classic article on achievement motivation in the *Harvard Business Review* (August, 1962) described differences in reactions to a picture of a man sitting at a drafting board with both drafting tools and a picture of his wife and children in front of him. People with high achievement motivation reacted to the picture with responses associated with work, accomplishment and achievement. People who had high affiliative drives told stories associated with the family portrayed in the scene. No one will

argue that there is no such thing as the workaholic in our society; why do they reject the idea that there are those less addicted to work (lazy)?

In one study conducted by the author at The University of Michigan, it was found that among 124 managers surveyed, 94% said they worked more than 40 hours per week, and 51% said they worked more than 50 hours per week. Most (88%) said that they received no *direct* extra compensation for the overtime work. Similar studies among rank and file employees *who had had no supervisory experience nor desire to be a boss* disclosed that only 11% work more than 40 hours per week and all were given additional compensation when they worked more than 40 hours per week. Why do managers actually work longer hours (and yet are seldom paid overtime for those longer hours)? It must be a prevailing higher level of motivation. Is it any wonder that these managers feel there are many who simply are not highly motivated?

Manager frustration with lazy employees can reach a very high level. But laziness is relative, and depends on what standard you are using, and who is being compared with whom. Managers are justified in feeling that other people are lazy compared to themselves for very good reasons. They *do* work harder and longer hours, and, in all likelihood, have a higher motivation to achieve and be successful at work. However, for managers to become absolutely frustrated because of their lazy employees is probably not justified. Most people will do what they know needs to be done, assuming that they know how to do it, are not unrealistically interfered with in their efforts to do it, and are not discouraged from doing it by counter-productive activities on the part of their supervisors.

Reversing the Decline in

For a number of years now, the General Accounting Office has stressed the seriousness of the productivity problem and made recommendations for reversing its downward trend. However, the problem of productivity is extraordinarily complex. We badly need a better understanding of the sources of the problem and of its broader consequences. Some of you may be familiar with Edward Denison's efforts to measure the factors behind our productivity decline. He was able to identify elements which explain only about 50% of the decline. Despite having only partial knowledge, however, it is possible to begin a course of action for improving the situation. Some things can—and should—be done now.

The General Accounting Office has examined this issue at the request of the House Subcommittee on Trade. As part of that study, we recently conducted a roundtable discussion involving 15 top-level representatives from industry, labor, and academia. Several important points were made at that meeting:

—*First*, labor and management must alter existing adversary relationships in order to successfully initiate productivity and quality efforts. This would include the use of such techniques as labor-management committees, productivity sharing, quality circles, and improved job stability.

—*Second*, additional capital must be made available for productive

investment. In Japan and West Germany, for example, personal and corporate investment and savings are encouraged by exempting dividends and interest from taxable income. We should take a closer look at how our tax system can be used to increase capital formation through revised depreciation, capital gains, and corporate income taxes.

—*Third*, the government should have a productivity focal point that will support increased cooperation among industry and government and the coordination of federal productivity efforts.

Another important topic that was brought up during the roundtable dealt with automation and robotics in the manufacturing process.

I believe that improvements in manufacturing technology will have

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a dramatic effect on productivity and product quality in this country. When a production process can be perfectly designed to yield a high quality product, and that process is automated, the result is the best of both worlds; high productivity and consistently high quality. Daily we have new examples to prove this point.

Robotics is at the cutting edge of industrial technology—a technology developed in this country. The question that concerns me is why we have been slow to apply this technology. Japan now has about half of the world's industrial robots in use—twice as many as are in use in this country. It appears, however, that U.S. companies are beginning to recognize the crucial role robotics can play in improving productivity.

Some believe the increased application of robotics in this country may bring about the second industrial revolution. The first revolution involved the transfer of physical skills and strength from man to machine. The second revolution will involve the transfer of intelligence from man to machine. By definition, revolution entails radical change—and change creates problems.

The problems fall into three categories: (1) technical problems in creating robots that can be flexible enough to handle varying tasks at a reasonable cost, (2) cost problems in improving access to permit their widespread application, and (3) social and labor relations problems with integrating this new technology in the

American Productivity

workplace. Much of the expected change will directly affect production workers.

Generally labor has not resisted automation and robotics when they have relieved workers from hazardous, dangerous, or monotonous jobs. But what will happen as the application of robotics goes beyond performing undesirable jobs? While we may end up with more jobs in the end, these will generally be new jobs with new training requirements. This fact must be addressed to ensure continued labor acceptance of the new technology.

The overriding factor in all the issues raised by our roundtable session and our work in the productivity area is the need for cooperation and combined commitment on the part of industry, labor, and government to improve our productivity.

This was also brought out in a GAO study entitled, "Manufacturing Technology—A Changing Challenge To Improved Productivity," in which we identified appropriate federal policies and actions relating to manufacturing technology. The study emphasized the importance of computer-integrated technology in improving industrial productivity.

Although our national productivity largely depends on the performance of business, the government plays an important role in establishing the broad economic, legal, and social framework within which business operates. The government is also

involved in the development of new technology.

For example, early development of the numerical control concept, which is the foundation of CAD/CAM, occurred in the U.S. Air Force. The Air Force developed this concept as a means to satisfy rigid tolerance requirements in the production of supersonic aircraft. Following demonstrations at MIT, the concept was applied to many other types of machine operations resulting in direct numerical control and later computer-aided manufacturing and design. Much of this research has been funded by the National Science Foundation.

In fiscal 1980, NSF provided over \$1.5 million in research funding for CAD/CAM, artificial intelligence, and related computer science work. NSF plans to continue funding research in these areas as well as in tactile sensing and vision needed for continued technology advances in computer integrated manufacturing.

The National Bureau of Standards has also been involved in fostering the continued development of computer integrated manufacturing. The Bureau has been expanding its basic research program and is planning to build a specialized computer manufacturing research facility.

Despite this interdependence in technological development and economic strength, government and the private sector seem at times to be more at odds and trusting each other less. In this we differ significantly from other industrial nations with

high productivity rates; we appear to lack a spirit of cooperation between government and the private sector. While the basic adversary relationship between the sector will always exist, we must work toward building into this relationship a sense of trust and cooperation.

In the area of capital investment, there is evidence of an increased willingness on the part of the government to work with the business community to address our national productivity problems. Some examples of public/private sector cooperation are encouraging:

- The Department of Commerce has established the first Cooperative Technology Center. In this program, the government acts as a catalyst in bringing together researchers in industry and academia to resolve common technological problems to help speed up the innovation process. The establishment of cooperative technology centers as non-profit corporations is the key mechanism in this program.

- The recently established Detroit Cooperative Generic Technology Center is expected to provide advanced generic research on technologies that underly many industries. According to the Department of Commerce, the center will combine improvements in materials forming operations with computer capabilities in the design and manufacture of products.

- The Department of Energy has also established several cooperative

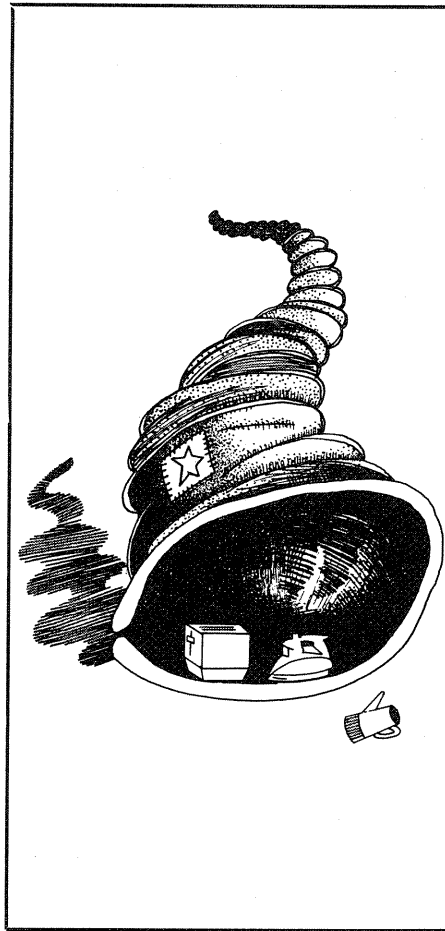
projects which are showing promise toward improving coal extraction productivity. The Department and private companies are working together to develop a shaft boring machine which will impressively reduce the time required to bring a mine into production.

- Another good example of growing public-private sector cooperation is the Steel Tripartite Committee. The Committee, which is composed of representatives from federal departments, steel manufacturers and the United Steelworkers, was established in 1978. Working groups were established to address such productivity related issues as capital formation, trade, labor-management relations, and research and development. The Committee developed a series of recommendations for government actions and many have been accepted.

- One final example involves government measures of productivity. In a recent report, we found that the private sector is interested in exploring ways of developing a new federal productivity measurement program that would enable firm managers to assess their firm's productivity level and progress with similar firms. Such a program could be operated by groups of firms through arrangement with trade associations or similar organizations, with the government playing the role of facilitator and advisor.

With better cooperation between the public and private sectors, the federal government can do much to help improve national productivity. However, I believe the government must first better organize and plan its productivity efforts.

Over the past decade, the government has made several attempts to organize and direct federal productivity efforts. The only common thread we can find running through these attempts is the lack of support they have received and their ineffectiveness. We at GAO have stated on numerous occasions that to be effective, any federal effort to encourage productivity growth must have strong support from the President and the Congress as well as the private sector.



The current National Productivity Council was established in October, 1978, as an organization responsible for providing "coordinated and effective federal programs to improve productivity . . ."

The Council is chaired by the Director of the Office of Management and Budget and is composed of the heads of 10 agencies that have productivity-related programs.

At the request of the Congress, we reviewed the Council's effectiveness. It appears that with minor exceptions, the Council has not met its charge.

The Council has not coordinated or guided the actions of federal agencies to improve productivity, has not provided legislative or administrative proposals for productivity improvement, and has not attempted to seek the advice and assistance of business, labor, and academic leaders concerned with productivity. For example:

- A recent GAO report found that the Council on Wage and Price Stability, a member of the

Productivity Council, has not stressed productivity in its efforts to reduce inflation and was not encouraged by the National Productivity Council to do so.

- Another GAO study found that the Department of Labor, which was assigned certain leadership responsibilities for encouraging productivity growth through human resources, has done little to carry out this role or undertake new initiatives in the area of productivity and quality of working life.

- We have also found that while the Department of Commerce has developed new programs to encourage private sector productivity, they need to be part of a national strategy that incorporates the work of other agencies and the concerns of the private sector. The National Productivity Council has not been directly involved in the development of these programs.

Another problem with the Productivity Council is the part-time nature of its leadership. The issue of our nation's productivity is sufficiently important to warrant the full time attention of those leading the effort. Importantly, it must have the support of labor, business, and the research community.

Despite these limitations, it cannot be denied that the government outlays related to productivity improvement are substantial. According to a recent National Productivity Council estimate, about \$2 billion was spent by the government during fiscal 1970 on productivity related programs. Most of these funds support activities to improve civilian technology through applied research and development. Much of the remainder is used to fund private sector technical assistance programs and to improve human resources through skill training and better labor-management cooperation.

However, these numerous efforts have not been evaluated and are not part of a broader strategy. A national productivity plan, backed up by a strong council, is needed to harness and direct these funds and activities and ultimately improve productivity.

Without a plan, how do we know what we are working toward? How do we know if \$1, \$2, or \$3 billion is an appropriate funding level? I find it difficult to understand that approximately \$2 billion is being spent annually in the area of productivity with no overall plan and no set objectives.

A year ago, GAO sent the Chairman of the Joint Economic Committee a report outlining what we believe is needed for an effective productivity effort. Legislation based on our recommendations was introduced in both the House and the Senate.

We pointed out that the key leverage point through which the federal government can improve private sector productivity is the implementation of policy initiatives in such areas as tax and regulatory policy. Of course numerous factors must be considered in deciding these policies. But most assuredly, a strong advocate of productivity concerns must be involved in that decision-making process. At present, there is no such strong advocate.

We recommended that a National Productivity Council, with its own budget authorization, be established by law. As a statutory body rather than an organization established by executive order, the Council would have greater authority and stability and would be more clearly accountable to the Congress.

We consider the development of a national productivity plan our most important recommendation. Such a plan should be developed with the extensive involvement of business, labor, and academic representatives as well as existing national and regional productivity centers. The productivity plan should

- identify and describe the relationship and effect of existing federal policies, programs, and activities on private sector productivity;
- delineate clearly the responsibilities of federal departments and agencies having direct program functions within the plan;
- identify existing unnecessary obstacles to productivity improvement created by the federal government;

- provide alternative policies, programs, activities, and lines of responsibility to improve private sector productivity; and
- contain a priority listing of short- and long-term objectives, and specific projects and programs for the next year to attain these objectives.

In addition, the plan should provide for

- an analysis of the federal budget to document where federal funds in support of private sector productivity improvement are being spent; and
- an assessment of federal efforts during the past year to improve productivity, including an identification of gaps, duplicated efforts, successes, and failures.

The plan should be dynamic, and as such must be updated regularly. It should be used to guide the numerous federal actions to improve productivity, and would enable decision-makers to put productivity-related proposals into a meaningful context. Without a plan, the government must approach each productivity-related issue on an ad hoc basis.

“Generally labor has not resisted automation and robotics when they have relieved workers from hazardous, dangerous, or monotonous jobs. But what will happen as the application of robotics goes beyond performing undesirable jobs? While we may end up with more jobs in the end, these will generally be new jobs with new training requirements. This fact must be addressed to ensure continued labor acceptance of the new technology.”

I want to make clear what I mean by a productivity plan. I am not proposing that we initiate national economic planning and I certainly am not proposing that the federal government become more deeply involved in the economy. A productivity plan is needed to better manage the many federal programs related to productivity.

Of course, the government can provide only part of the answer to our productivity problem. The solution ultimately depends on the actions of businesses and workers. The private sector must do its part to make our industries more productive. Specifically, it is the management of an organization's resources that affects productivity. It is management, not economic laws or governments, that can make resources more productive.

For example, productivity statistics were recently calculated for 20 similar coal mines in Wyoming. Production, in terms of tons per worker day, ranged from 58 to 242. This wide variation in productivity was not the result of a different type of coal, differing capital equipment, or varying government regulation. The main difference was how company management worked with its employees. The most productive firm provided its employees with the greatest amount of individual responsibility and involvement in decision-making.

However, there is also an important role for government. Government must seek new and better ways to cooperate with the private sector to encourage productivity and eliminate barriers to its improvement. The government must also ensure that its own operations are efficiently administered.

In conclusion, I want to re-emphasize my primary concern at the federal level: That any national productivity effort be properly supported by the President and the Congress, involve the private sector, and be based on a national productivity plan. The goal of such a plan would be to make sense of the numerous federal policies and programs that affect productivity, and direct needed changes toward encouraging productivity growth while meeting other policy objectives.

Productivity and Tax Incentives

by James E. Wheeler, Professor of Accounting

Increased productivity is, in most cases, a desirable goal. However, the use of tax incentives, in an effort to achieve that goal, may produce some highly undesirable side effects. The purpose of this article is to present some of the undesirable aspects for further scrutiny.

Measurement Problems

Before looking at specific tax incentives, it should be noted that most, if not all, measures of productivity and, thus, changes in productivity, are susceptible to significant error, especially when measured on a nationwide or macro basis. For example, a shift from an industrialized to a service-oriented economy might cause productivity measures to drop when productivity is associated with labor. This could be true even if real productivity were rising in the industrial sector. In addition, significant inflation tends to confound the measurement of productivity change.

Substitution of Capital for Labor

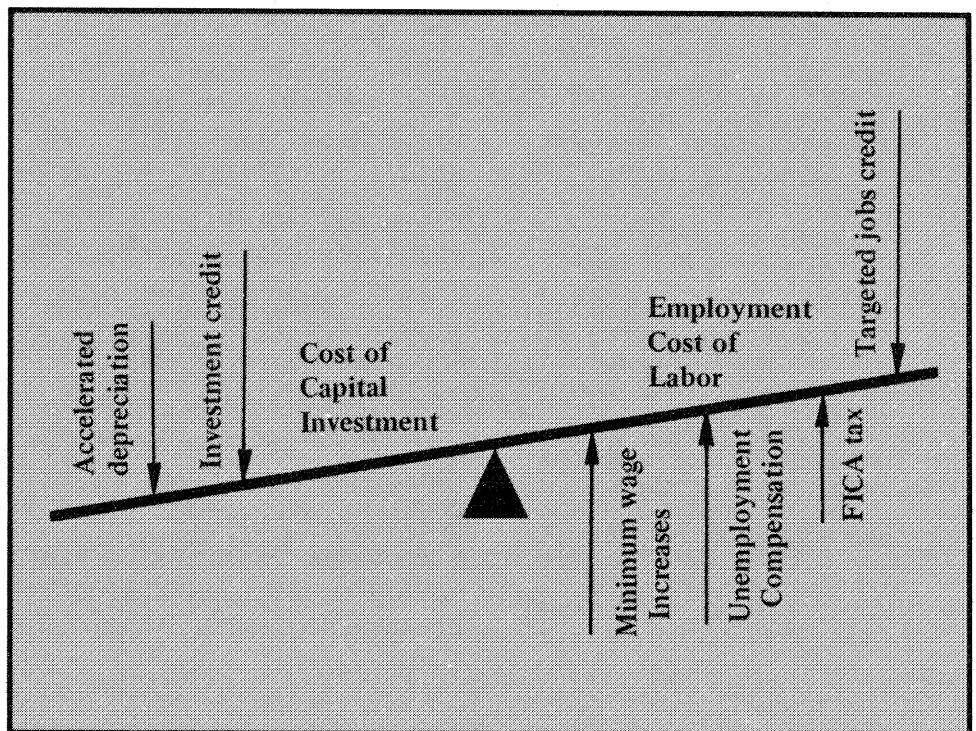
The drive for tax incentives as a stimulant for greater capital investment is often justified by using data which show an average dollar amount of capital investment for each employee. These data generally reflect an increasing amount of capital per employee over time. The implication is that there is a continuous and increasing need for more capital investment, and if there is greater investment, there will be more jobs.

This is not necessarily so. As we move toward more automated production, the cost of capital per employee rises, but the use of robotics may create a net decrease in employment. In other words, it is possible in many areas in our economy to substitute capital investment for labor or vice versa. Substitution should take place—at least in a profit-oriented system—whenever the cost of one exceeds the cost of the other.

The cost of equipment and the cost of labor are both affected by taxation. The cost of labor, for example, is affected at least initially when a tax on labor is first enacted or increased,

unless wages fall by a corresponding amount. Some economists believe that certain taxes such as FICA are in the long run borne entirely by the employee (the employee half directly through withholding and the employer half indirectly in the form of lower wages). To the extent, if any, that the employer portion of the FICA tax is not shifted back to the employee through lower wages, it results in increased labor costs.

The following diagram depicts the initial impact of recent tax and minimum wage changes on the balance between the cost of labor and the cost of capital:



Of the six items in the foregoing diagram which impact on costs, five of them tend to make capital less expensive than labor. Only the targeted jobs credit, which is probably the smallest of the six factors, lowers the cost of labor as opposed to capital. There may be some initial inertia in substituting capital for labor or vice versa when the total after-tax costs change, but to maximize profits the change should take place in a long-term analysis. When costs of capital investments are falling, labor must reduce its wage demands to remain competitive or face unemployment. Only a continually expanding economy can utilize more capital investment without forcing a reduction in employment of labor. In other words, it is possible in certain economic conditions to "buy" unemployment as a result of tax incentives to stimulate purchases of equipment.

A Comparison with Immediate Write-Off

There are strong indications that Congress, in an effort to stimulate more capital investment, will soon enact even more liberal depreciation rules than presently exist. The most likely proposal is 10-5-3 depreciation. This system would permit ten-year depreciation lives for buildings, five-year lives for machinery and equipment, and three-year lives for most vehicles. With the investment tax credit, the tax effects exceed, in many cases, the results that would be obtained by immediately expensing the new capital investment. For example, by immediately expensing a \$100,000 capital investment, a \$46,000 tax saving would be generated for a corporation in the top 46 percent tax bracket. Tax savings using sum-of-the-year's-digits depreciation, a three-year life and the investment tax credit with a 10 percent discount rate, would be \$46,608, determined as follows:

“When costs of capital investments are falling, labor must reduce its wage demands to remain competitive or face unemployment. Only a continually expanding economy can utilize more capital investment without forcing a reduction in employment of labor.”

Table 1

| | | Present Value |
|---|--------------|-----------------|
| Investment credit | \$ 3,333 ÷ 1 | \$ 3,333* |
| 1st year depreciation ($\$50,000 \times 46\% = \$23,000$) | 23,000 ÷ 1 | 23,000 |
| 2nd year depreciation ($\$33,333 \times 46\% = \$15,333$) | 15,333 ÷ 1.1 | 13,939 |
| 3rd year depreciation ($\$16,667 \times 46\% = \$7,667$) | 7,667 ÷ 1.21 | 6,336 |
| | | <u>\$46,608</u> |

* assumes only 1/3 of the \$10,000 credit is available with a three-year useful life.

If suggestions to increase the investment credit are adopted, the excess over immediate write-off will increase. A full investment credit of 10 percent on a three-year life asset would generate \$53,275 present value of tax reductions as opposed to \$46,000 from immediate expensing.

Excessively large write-offs generate tax shelters. We already have far too much misallocation of economic resources due to tax-sheltering schemes and efforts to produce capital gain as opposed to ordinary income. Increased depreciation deductions will generate more misallocations as well as cause problems in the balance

of employment of capital and labor.

Because many profitable companies are already paying little or no tax, increased depreciation will mean the net operating loss (NOL) tax rules will have to be liberalized (by allowing extensive carrybacks and carryforwards). In addition, the investment tax credit (ITC) will have to be made refundable because without tax liabilities there is no way to apply the credit. Without liberalizing NOLs and making ITC refundable, even more tax shelters will be formed.

Plant Relocation

It should also be noted that excessive tax breaks for new buildings and equipment will make it less costly to relocate present manufacturing operations. We should be sure that we want to encourage the movement of industry (for example to the Sun Belt) before we support legislation which could have this effect.

About the author: Professor Wheeler spent a year on the staff of the Joint Federal Taxation Committee of the United States Congress, and served as chairman of the Task Force on Social Security of the AICPA's Tax Division. He has written widely on various aspects of taxation.

Recent Shifts in Tax Burdens

It is interesting to note the recent huge shifts in sources of federal tax revenue. In 1965, total federal tax receipts were as follows:

Table 2
(In billions of dollars and percentages)

| | 1965 | |
|---------------------------------|----------------|-------------|
| Individual income taxes | \$51.2 | 42.8% |
| Corporate income taxes | 27.0 | 22.6 |
| Social Security taxes | 24.6 | 20.6% |
| Excise taxes and other receipts | 16.8 | 14.0 |
| | <u>\$119.6</u> | <u>100%</u> |

Source: U.S. Budget

The Reagan Administration's budget proposals, which include greater accelerated depreciation and tax reductions, reflect the following for 1980 and estimated 1986:

Table 3
(In billions of dollars and percentages)

| | Actual 1980 | | Estimated 1986 | |
|---------------------------|----------------|---------------|----------------|---------------|
| Individual income taxes | \$244.1 | 47.0% | \$439.5 | 46.8% |
| Corporate income taxes | 64.6 | 12.4 | 72.8 | 7.7 |
| Social Security taxes | 160.7 | 30.9 | 327.4 | 34.8 |
| Excise and other receipts | 50.6 | 9.7 | 100.5 | 10.7 |
| Totals | <u>\$520.0</u> | <u>100.0%</u> | <u>\$940.2</u> | <u>100.0%</u> |

Source: The Bureau of National Affairs, Inc., *Daily Tax Report*, March 10, 1981

Note that the total 1986 tax receipts are projected at 786.12 percent (\$940.2 ÷ \$119.6) of the total 1965 tax receipts. Thus, by increasing each of the 1965 tax sources by 7.8612, we can see the shift in tax sources.

Table 4
(In percentages and billions of dollars)

| | Percentage | 1965 Totals × 7.8612 | Estimated 1986 | Annual Change in Tax Sources In Dollars Since 1965 |
|---------------------------|-------------|-------------------------|-------------------|--|
| Individual income taxes | 42.8% | \$402.5 | \$439.5 | \$ 37.0 |
| Corporate income taxes | 22.6 | 212.2 | 72.8 | (139.4) |
| Social Security Taxes | 20.6 | 193.4 | 327.4 | 134.0 |
| Excise and other receipts | 14.0 | 132.1 | 100.5 | (31.6) |
| | <u>100%</u> | <u>\$940.2</u> | <u>\$940.2</u> | <u>-0-</u> |

The huge growth in FICA taxes is reflected in the \$134 billion increase in social security tax collections. This tax has increased the cost of labor and/or it has resulted in reduced wage rates. In any event it is a very regressive tax. In 1986, Social Security taxes will be 1,331 percent (327.4 ÷ \$24.6) of the 1965 tax and, thus, will have increased far faster than the almost 786.12 percent change in total federal tax receipts including the FICA tax. Projected 1986 corporate income taxes will be only 270 percent (\$72.8 ÷ \$27.0 of the 1965 total).

Note that the corporate income tax will yield less than one-fourth the yield of the Social Security taxes in 1986, whereas in 1965 the corporate income tax yield exceeded the tax yielded by Social Security. Corporate before-tax profits were \$75.2 billion¹ in 1965 and \$255.4 billion² in 1979, the latest year available. Thus, 1979 before-tax profits are 339.6 percent

((\$255.4 ÷ \$75.2) of the 1965 before-tax profits. (Of course, the 339.6 percentage change in before-tax profits would be significantly greater had I been able to locate a 1986 estimate rather than the 1979 actual figure to use.) Gross national product (GNP) was \$688.1³ billion in 1965 and is projected at \$4,685.0 billion⁴ in 1985 (the last year of projection readily available). This results in a change of 680.9 percent (\$4,685.0 ÷ \$688.1). Using 1967 as 100 percent, the consumer price index (CPI) shows 1965 at 94.5⁵ percent and projected 1985 (again the last year readily available) at 385.0⁶ percent. Thus the 1985 CPI is 407.4 (385.0 ÷ 94.5) percent of 1965. Thus, in real terms, the corporate income tax collections have actually decreased since 1965 while the before-tax corporate tax profits have increased in both actual dollars and real terms. Social Security taxes on labor, on the other hand, have soared and are almost twice the change in GNP (1,331.0 percent for Social Security as opposed to 680.9 percent for GNP).

These tax changes represent an enormous erosion in the progressivity of the tax system. In addition, the changes in sources of tax revenue in many cases may make it profitable on an after-tax basis to substitute capital for labor. In other cases, where substitution of capital for labor is not easily accomplished, the cost of labor may rise. To the extent that the FICA tax is paying for welfare (benefits received in excess of a reasonable return on past FICA contributions), the tax burden is being shifted often from the taxable corporate sector to the not-for-profit sector which includes state and local governments, hospitals and universities which are often labor intensive.

Certainly a free market can better allocate economic resources than the U.S. Congress, through frequent changes in a very complex tax system.

¹ Statistical Abstract of the United States, 1979 edition, p. 441.

² Survey of Current Business, December, 1980, p. 28.

³ Statistical Abstract, p. 440.

⁴ Predicasts Forecasts, Issue 82, p. A-13.

⁵ Ibid., p. A-10.

⁶ Ibid., p. A-11.

Among Ourselves

An informal collection of items, including news of the faculty, of alumni, and of the school, and assorted other information, opinion or comment that we think will interest you.

Chief Executives Give Michigan High Rankings

Arthur Young Executive Resource Consultants has recently published a booklet entitled *The Chief Executive: Background and Attitude Profiles*. As part of the profile, the chief executives were given a list of 26 prominent graduate business schools, with spaces to add three more, and asked to rate three institutions as sources of talent for their own companies. Harvard was chosen first by 33% of the CEOs, Stanford next, with 18%. Other schools receiving at least 5 percent of the first rankings were, in descending order, Wharton, Michigan, and Tuck (Dartmouth). Eleven percent of the CEOs ranked Michigan in the top three.

1981 Student Pledge Program is a Resounding Success

The second annual student pledge campaign for the Business School has turned in a very successful performance. This year 251 pledges were made for a total of \$68,168 over the next five years to help maintain and improve the outstanding reputation of the Business School. Last year (the first year of the student pledge campaign), 124 pledges were received for a total of \$33,325.

The campaign was run by nearly 100 student volunteers who contacted all Class of '81 graduates to ask them to support the Business School Fund. Five business school students were

members of the joint BBA and MBA steering committee which started planning the campaign last fall. Members of the committee included Jim Parsons, Kris Bernest, Dave Biggs, Alan Pearlman and Karen Schmeichel. Said Parsons, "In the business community we will be identified with the institutions from which we received our business degrees. Thus we have an important personal stake in the future reputation of the Business School. In addition, the decline in state assistance makes it clear that the Business School must secure support from its alumni and friends if it is to have the resources necessary to maintain and enhance its outstanding program."

The campaign was held for a three week period from March 12 through April 2.

Alumni Office Holds Get Togethers in New York and Chicago

Recent developments in the Alumni Relations Office's continuing programs of upgrading and increasing communication between alumni and the School, between current students and alumni, and between alumni themselves have included special programs in New York and Chicago, and special meetings for students planning to move to those cities. According to Frank Wilhelm, director of Alumni Relations, "Student and alumni response to our efforts to organized programs in these cities has been most encouraging. We plan to draw on these experiences as we begin to organize alumni activities in other areas."

"Basic Industries through the Year 2000" was the topic of the Chicago alumni program, held March 26 at the University Club of Chicago. About 150 alumni of the Business School gathered to hear three speakers.

Professor William K. Hall, Ph.D. '69, professor of policy and control at the Business School, discussed his research on survival strategies for basic industries. Goff Smith, MBA '39, chairman of the board of Amstead Industries, Inc. talked on the topic "Is Diversification through Acquisition a Viable Way Out?" and Gary T. Walther, MBA '63, senior vice president and general manager of Banque de Paris et des Pays-Bas discussed "Financial Strategies for Basic Industries." Following the talks, a reception was held.

New York alumni of the Business School got together for a luncheon on May 5 at the Harvard Club of New York. After lunch, they heard Paul W. McCracken, Edmund Ezra Day University Professor of Business Administration and member of the President's Council of Economic Advisers, discuss "The Economy and the Reagan Program."

The Business School Alumni Relations Office also sponsored two information meetings for groups of students who are moving to New York and to Chicago, either to take permanent positions, or to take summer internships or who are just thinking about moving to one of the two areas. Information from the Chambers of Commerce of each city was passed out at the meeting, along with lists of alumni who have agreed to be contacted by new residents of the cities. A social program is being planned for the fall to make it possible for new alumni of each city to meet other alumni residents.

Symposium on Growth Capital Presented at U-M

A second annual symposium, entitled "Growth Capital: 1981" was presented in March at The University of Michigan. Goal of the continuing series of venture capital seminars is to bring together local company executives, bankers and investors, and thus encourage the diversification and growth of Michigan's economy. Formal speaker presentations explained how small, innovative firms can tap the growth capital market to expand facilities, employment, and production.

"Historically, venture capital has been less available to new, innovative companies emerging in Michigan than to their counterparts arising in certain other regions of the nation," says David J. Brophy, director of the symposium and professor of finance at the Business School. "This has encouraged the movement of technology-based companies from the state to other areas where investment dollars are readily available.

"Yet Michigan is a relatively wealthy state, based on per capita financial holdings. A large share of our capital resources is exported to support economic development in other states. We hope to change this pattern over time." The symposium provided an informal mechanism for stimulating investor interest in Michigan technology-based firms, according to Brophy.

The entire spectrum of growth capital sources was represented at the symposium, which included sessions on start-up financing, access to the various types of venture capital investment firms, the use of private placements with financial institutions, and the use of registered public stock offerings.

Bankers and interested investors also had the opportunity to hear presentations by the principal officers of emerging growth companies. "There is a rapidly growing interest in the early identification of innovative firms by financiers," says Brophy. "Michigan has young-firm representation in a wide array of exciting new industrial fields, particularly those based on applied electronics and

bio-medical science. This interest in Michigan investment opportunities is reflected in the fact that nearly 40 venture capital and risk capital investment firms from around the United States registered for the symposium. Attendance at this symposium was a great opportunity for local firms—with significant financing requirements ahead of them—to make themselves known to sources of investment funds."

Sponsors of the symposium were the Industrial Development Division and its Economic Development Administration University Center, both units of the Institute of Science and Technology, and the Graduate School of Business Administration.

Professor Alfred Edwards Named a Member of the WMU Board of Control

Alfred L. Edwards, director of the Division of Research at the Business School, has been named to the Western Michigan University Board of Control by Gov. William G. Milliken.

Edwards replaces former trustee John R. Dykema. His term runs through December 31, 1988.

A native of Key West, Fla., Edwards received a bachelor's degree from Livingstone College in North Carolina, a master's in economics from the U-M, and the Ph.D. from the State University of Iowa. From 1957 to 1963, he was assistant professor of economics at Michigan State University. During that time, he took two years' leave to help set up the University of Nigeria and to act as an economic advisor there. From 1973 to 1974, he served in the U.S. Department of Agriculture as deputy assistant secretary for rural development and conservation, and then became special assistant to the Commissioner of the Consumer Product Safety Commission. He joined our faculty in 1974.

Five New Books Being Brought Out by the DOR

Recent publications from the Business School's Division of Research include books on economic principles in public utility industries; information economics and accounting research; commodity futures markets and the law of one price; current issues in advertising; and financial institution reform. Below are listed the books, along with a brief synopsis on each of them. They may be ordered from the Division of Research, Graduate School of Business Administration, University of Michigan, Ann Arbor, Michigan 48109.

Information Economics and Accounting Research: A Workshop Conducted by Joel S. Demski, edited by Gerald Lobo and Michael Maher (225 pp., \$9 paper)

This monograph, the outcome of an intensive three-day seminar conducted at The University of Michigan by Professor Joel S. Demski of Stanford University, provides the reader with an introduction to the field of information economics. The book consists of three major parts, each of which begins with a lecture by Professor Demski. Part I examines the assumptions behind, and the nature of, the economic approach to the analysis of information. The papers in Part II draw upon the concepts of the state-act-outcome paradigm and the notion of consistent choice to investigate various issues traditionally associated with managerial accounting. Finally, the third section extends the analysis to issues of financial accounting. The reading list for the seminar, in combination with the reference lists accompanying each paper, represents a comprehensive bibliography of writings in the field.

The Development of Economic Policy: Financial Institution Reform, by Sidney L. Jones (360 pp., \$12.50 cloth)

This book analyzes the government's approach to the development of economic policy, as revealed through a systematic and detailed examination

of the attempts during the 1970s to legislate comprehensive reforms in the structure and operations of financial institutions in the United States. The study begins with an overview of the process of institutional reform and the role of financial institutions in the economic system. The successive proposals for specific changes submitted to Congress by the executive branch, and amendments suggested in the course of the congressional hearings, are outlined and analyzed. At each stage, the author presents the diverse responses of the many parties involved in the formulation of government policy: executive branch task forces, congressional committees, public commissions and consultants, academic experts, and special interest groups in the private sector. Finally, the author discusses the outlook for future reform initiatives and concludes with a thoughtful examination of the broader policy implications of these reform efforts.

Commodity Futures Markets and the Law of One Price, by Arvind K. Jain (138 pp., \$6 paper)

Growth in international trade and international capital markets in the post-World War II era has brought about an increased interdependence between the economy of the United States and those of western European countries. This, in turn, has resulted in the development of a number of theories to explain the process by which a domestic economy adjusts to changes in exchange rates and other international economic fluctuations. Dr. Jain's study uses international arbitrage of commodity futures to test one such theory, the "law of one price," which asserts that the price of a good will be the same in two different markets. After subjecting data for seven commodities traded in New York, London, and Chicago to advanced time series analysis, Dr. Jain concludes that the law of one price is not valid when applied to commodity markets.

Current Issues and Research in Advertising 1980, edited by James H. Leigh and Claude R. Martin, Jr. (240 pp., \$7 paper)

The 1980 edition of this annual publication consists of two major sections. The four articles in the first section deal with theories, practices, and current developments in the discipline, and include observations about the incorporation of advertising research into FTC decision making, an evaluation of the literature concerning the definition and measurement of deception in advertising, a model for a systematic examination of the use of product endorsers, and a discussion of the use of psychophysical measurements in the evaluation of advertisements and products. The remaining eight papers report the results of empirical research studies on topics related to advertising.

Applications of Economic Principles in Public Utility Industries, edited by Werner Sichel and Thomas G. Gies (166 pp., \$9 cloth)

Energy and transportation rank high among the economic concerns of American consumers and policy-makers, and these concerns generate a host of issues—technical, social, and political—that impinge on the formulation of public utility regulatory policy. It is widely held that traditional government policies are no longer adequate for dealing with the complexities of the present regulatory environment. This book, a collection of papers originally presented at the Eighth Conference on Public Utility Economics at The University of Michigan, constitutes evidence of the creative thinking that characterizes current approaches to the resolution of these issues.

The book begins with a discussion of current attempts to develop a more comprehensive and timely definition of the concept of natural monopoly. The next three papers deal with various aspects of the problem of incorporating equity considerations

into the development of rate structures for public utilities. The fifth paper examines the potential impact of the current tariff structure on future explorations for oil, using the Trans-Alaska pipeline as a case study. Finally, the book concludes with two essays on various aspects of deregulation. Together, the essays in this collection provide a variety of viewpoints on the issues, both theoretical and practical, that surround public regulation of utility industries.

Paul McCracken Named to President's Advisory Board

Paul W. McCracken, Edmund Ezra Day University Professor of Business Administration, has been named to President Reagan's Economic Policy Advisory Board. He was one of 12 economists and business leaders to be named to the advisory council.

According to a spokesman for the White House press office, the advisory board will meet every three or four months "to advise the president of the conditions and objectives for domestic and international economic policies of the United States."

The board will report to Treasury Secretary Donald Regan, and will be chaired by George Shultz, former treasury secretary and currently vice chairman of the Bechtel Group.

McCracken has served as an advisor to two previous presidents, and has been active in government since 1942, when he was an economist in the Commerce Department.

He is best known for chairing the President's Council of Economic Advisers from 1969 to 1971.

Class Notes

29 CARL F. BEIER, MBA '29, retired in 1970 after 41 years with the J. L. Hudson Company. Since his retirement he has traveled extensively to Europe and the Orient, and has been to Brazil three times as a volunteer consultant under the auspices of the International Executive Service Corps. He also does volunteer work for the Red Cross as well as doing recording for the blind. He has three daughters and six grandchildren.

35 ROBERT N. SHAW, MBA '35, is the former chairman and chief executive officer of Mercantile Stores Company, Inc., in New York City. He retired in 1975 and is living with wife, Georgina, in Tucson, Arizona.

47 LOWELL E. TOMPKINS, MBA '47, has worked for the following companies since his graduation: Northern Trust Company in Chicago; Dow Chemical Company in Midland, Dow Badische Company, Williamsburg, Virginia and Dundee Cement Company, Dundee. Two children have graduated from The University of Michigan: Larry L. Tompkins who has a B.S. in mechanical engineering, and Carolyn R. Walker who has her B.A. in psychology. She also has an MBA from the University of California at Berkeley and is a CPA.

48 WILLIAM P. WELLS, BBA '48, became a general manager for Glen Lau Productions in Ocala, Florida, in October, 1979. Glen Lau Productions produces syndicated series, such as Sports Afield and Coors Western Outdoorsman, and other films for television.

JOSEPH D. MILLER, MBA '48, is proud to be the father of a son entering the U-M Business School, representing the third generation of the family at U-M. His son, David B. Miller, graduated from the naval academy, spent five years in the Navy's Nuclear Power Program and is now representing Enzed Traders in the middle west.

ROBERT M. MOCK, BBA '48, has been elected chairman of Michigan Forest Products Council, an association of the primary forest fiber users. Forest Products

manufacturing is the third largest industry in Michigan, closely following agriculture.

JOHN ALLAN AIGLER, BBA '48, retired from General Telephone Company of Ohio in May, 1978.

49 CLEMENS K. SOLOMON, MBA '49, is a senior internal auditor with Michigan Bell Telephone Company in Southfield. He also owns a tax accounting firm specializing in individual income taxation and is an "enrolled agent" (to practice before I.R.S.). He recently served on the Wayne County efficiency task force in the financial area.

GERALD A. O'TOOLE, BBA '48, MBA '49, is a general insurance agent with Knights of Columbus. He has five children. His oldest son graduated from Western Michigan University with a master's degree in industrial psychology, number two son graduated from The University of Michigan with a double major in math and computer science, his first daughter graduated from Oakland University with a degree in human resources development and daughter number two is a junior at Oakland University, Honors College, studying computer programming. His last son is a junior at Andover High and enjoys soccer.

ROCK J. MARTIN, BBA '49, is a 1969 graduate of the Graduate School of Banking, The University of Wisconsin. He is currently president of the Exchange Club of Ann Arbor and immediate past president of the Advisory Board of St. Louis School for Exceptional Boys in Chelsea. He is also a member of the Executive Board, Wolverine Council for the Boy Scouts of America.

50 WALTER L. VOEKS, BBA '50, is general manager for Adam Opel Ag General Motors Corporation in West Germany. He has accepted a three year assignment to develop a dealer assistance plan in West Germany and the United Kingdom. He anticipates returning to Los Angeles in July, 1982 upon completion of the assignment.

RONALD R. SALBENBLATT, BBA '50, is a senior sales representative with Metro-

politan Life Insurance Company. He is a member of the Million Dollar Round Table, and, in his 21 years with the company, has qualified 20 times for the Leaders Conference.

ARTHUR R. FIELD, BBA '50, has recently retired from Ford Motor Company and will be making his home in Hilton Head Island, South Carolina.

52 JAMES A. DOWSLEY, BBA '52, has been elected vice president of the Michigan Association of Certified Public Accountants.

CHARLES E. CUSON, BBA '52, retired from the Navy on July 1, 1979. He and his family moved to Tucson where they are enjoying the great weather and expanse of the Southwest.

53 MARLENE A. SCHULHAUSER, BBA '53, writes, "while my Bus. Ad. education (especially accounting) is put to good use in my position with a pipe organ company, it is combined with my musical endeavors which include my position as a church organist. I feel fortunate to be able to make use of both my musical and business interests. In recent years, I have been increasingly interested in the philosophy of economics with a growing belief in the importance of a free market to a free and prosperous society. I am forever indebted to Professor Clare Griffin and others for their inspiration and good sense. A free market requires a stable monetary situation—something we are being robbed of by irresponsible government. I realize that our Business School is concerned with teaching the *means* of making business; I wish that some consideration would also be given to the purpose of making business: a better life, in terms of political and economic freedom and material prosperity, for all individuals. Don't misunderstand me; I do not mean to promote any political endorsements in our teaching program—just give at least as much time to teaching the free market approach as you do the managed, centrally controlled economy."

FREDERICK E. RONEKER, JR., BBA '53, is president of Fred Roneker, Inc., shops

which specialize in mens and boys apparel in Williamsville, New York.

MILTON A. GOETZ, BBA '53, has been with G.E. for over 25 years, spending the last seven in broadcasting. He relates that the big news of the year was the non-merger with Cox Broadcasting.

ROGER C. EASTON, BBA '53, MBA '53, is a consultant with The Profit Adviser in Orlando, Florida. He has been a qualifying member of the Million Dollar Round Table for three years; is an associate member of the Direct Selling association, and a member of the World Trade Council of Central Florida.

ROBERT F. SCHWINDT, MBA '53, has been appointed corporate director, University Relations, at Union Carbide Corporation. Bob joined Union Carbide in 1955 in the metals division. His service has included over ten years in Latin American countries. Prior to joining corporate employee relations in 1980, he was vice president-employee relations for chemicals and plastics.

'54 JAMES E. LALONDE, JR., BBA '54, just completed 25 years of service with General Electric. His last 14 years were spent in Houston with the Space Division, mainly in support of the NASA-Johnson Spacecraft Center. He is married and the father of six boys and one girl. They have returned many times to his wife's home in Ithaca, New York, and his home in Alpena, Michigan but have never had enough time to revisit the U-M or Trigon Fraternity. He hopes to return someday, but states that after 14 years "we are Texans and Houstonians."

MILDRED F. KNAPP, BBA '54, is president of the Michigan School of Social Workers Association and also president of the Detroit Association of University of Michigan Women.

DONALD B. HOLLIDAY, BBA '54, is vice president of Trust Real Estate Department of Ameritrust Company in Cleveland, Ohio. His daughter, Patrice, has just begun work on her master's degree through an assistantship in the U-M School of Library Science.

'55 RICHARD PETRIE, BBA '55, is a teacher with the Brighton Area Schools, where he advises the student publications (newspaper and yearbook) which have won numerous state and national awards for excellence. In addition, he teaches journalism and sometimes typing and accounting. He has completed 25 years in the teaching profession, belongs to several journalism education associations, and has received

David K. Lundberg, BBA '59, MBA '60

David K. Lundberg, BBA '59, MBA '60, is vice president and general manager of the Financial Systems Division of the TRW-Fujitsu Company in Orlando, Florida. The company manufactures financial teller terminals and automatic teller machines for supplying to U.S. banks, savings and loan associations and mutual savings banks with electronic terminals. The new company (which is a joint venture between the Cleveland-based TRW, Inc.

information processing firm and Fujitsu of Japan) will also offer products in retail point-of-sale terminals, small business computer systems, and general purpose computer systems. Fujitsu, already the No. 1 computer firm in Japan, also is tops in the field of financial terminals, and is currently racking up sales at the rate of about \$2 billion per year. TRW, known more for its car and truck parts than electronic systems, had 1979 sales of more than \$4.5 billion.

several awards in regards to advising student publications.

YIWA SRISOMWONGSE, MBA '55, writes, "I am very grateful for your kindness in sending me news from our alumni. Since I left school in 1955 I have worked hard with the Bank of Thailand and have been a housewife also. Now I am retired from the Bank, rest with pension, and am still a housewife full time. I am delighted a great deal that I have had news and "Dividend" from old friends for the first time in this 25 years. It is a long time ago, but Ann Arbor and our campus still is in my sweet memory."

MORRIS K. BATTER, MBA '54, is a real estate broker specializing in commercial and industrial real estate (shopping center sites, fast food locations, store locations), and is a member of the N.H. Board of Realtors.

'56 CAPT. RAYMOND S. SULLIVAN, MBA '56, has retired from the U.S. Navy and the Carrollton (Missouri) Country Club. He writes that he is now a retired farm owner, praying for rain.

MARVIN L. BILLOW, BBA '55, MBA '56, joined Massillon Steel Casting Company in May 1979 as chairman, president and chief executive officer after serving two years as vice president for operations for Bonney Forge and Taylor Forge divisions of Gulf & Western Manufacturing Company. From 1960-1977 he was with National Forge Company, serving in positions of increasing responsibility director of marketing, vice president marketing, vice president operations and vice president and general manager. While with National Forge he progressed to the presidency of Open Die Forging Institute (U.S. & Canadian trade

association) and served on the Manufacturing Council of Machinery and Allied Products Institute, Washington, D.C.

'57 GEORGE B. WOLF, MBA '57, recently assumed the position of director of materials for Garrett Corporation, Industrial Products Division. He is now living in Costa Mesa, California.

ARTHUR M. FRIEDMAN, BBA '57, has been elected to the Board of Partners of Arthur Andersen & Co. of Los Angeles.

'58 ANN L. MIKULSKI, BBA '57, MBA '58, has just returned to the job market on a part-time basis after 15 years as a homemaker and mother of four. She says she finds less discrimination against women in business today than in 1958 when she had to begin her career as a secretary in marketing research. She says "today the MBA for women is more meaningful."

MARK M. JAFFE, MBA '57, MBA '58, has been re-elected to his 6th term as president of the Essexville-Hampton Board of Education in Essexville, Michigan. In April, 1979, he was elected to the board of directors of Peoples National Bank & Trust Company in Bay City, Michigan, and in September, 1979, was elected president of the board of directors of Bay Medical Center, Inc., Bay City, Michigan. His daughter, Lynne, graduated from the U-M Business School in May, 1980, with distinction. He is married to the former Judy Phillips, University of Wisconsin '60, and they have three children: Lynne, 22, Ellen, 19, and David, 8. He is president of the Valley Oxygen Co. in Bay City, Mich.

DAVID V. BURCHFIELD, MBA '58, was recently transferred to Houston as partner

in charge of the Houston, San Antonio, and Austin offices of Touche Ross & Co.

WILLIAM C. BUHL, BBA '58, is a regional administrator for the U.S. Department of Labor in San Francisco. He and his wife and one son, Peter, have been very active in running and competing in marathons (hoping to qualify for the Boston marathon). The other three children have concentrated on 10,000 meter races.

'59 WILLIAM I. ABELMAN, BBA '59, is a partner in "Medico Insurance Planning Services" offering association group life insurance and estate analysis for the medical profession.

SHIRLEY D. BAYNE, BBA '58, MBA '59, worked in market research immediately after graduation, and later received her teachers certificate and taught in high school. After adopting two children she went back to work part-time as a business teacher and started doing bookkeeping. She has now started her own accounting service out of her home, and also teaches accounting part-time in community college and adult education programs. She is thinking about starting work on a master's in accounting at U-M Dearborn.

BERT ATWATER GETZ, BBA '59, is president of Globe Corporation in Scottsdale, Arizona and is also a director of the Arizona Bank, chairman of the Bank's finance, compensation and nominating committees, and a member of the Bank's executive, trust and audit committees. He is also a director of the First National Bank of Winnetka, Illinois, and trustee and chairman of the Nominating and Instructional and Discipline Committees of the Lawrenceville School, New Jersey. He is also a trustee and immediate past president of the Phoenix Country Day School, Arizona.

TIMOTHY C. RICHARD, MBA '59, is editorial page editor for the Observer and Eccentric Newspapers in Livonia, Mich. In April, 1980, he received an honorary associate of arts degree from Schoolcraft College in Livonia.

ALAN K. STONEX, MBA '59, has been transferred from the financial staff of GM's Assembly Division central office in Warren, Michigan, to a new Corvette plant in Bowling Green, Kentucky. While in Michigan, he had been active in politics, having served 13 years on the Brighton, Michigan, City Council (four of them as mayor). He held an executive committee seat on SEMLOG, served as a delegate to the Livingston County

Republican Convention, and as an alternate from Livingston County to the State Republican Convention.

'60 MICHAEL E. BARBER, MBA '60, is district attorney for Sacramento County, California, and was recently selected as a captain in the U.S. Naval Reserve.

BRUCE M. BERRITT, BBA '60, has been promoted to vice president in charge of finance of Mode Fabrics, Inc. in New York City. He is responsible for 20 corporations forming a privately held textile conglomerate supplying textiles both nationally and internationally, with total sales of approximately 200 million. He is also very actively involved in "The Hunger Project" an organization of 1,500,000 individuals committed to ending hunger wherever it exists by 1997.

CLARENCE C. ELEBASH, MBA '60, is a retired Air Force Colonel, has his D.B.A. from Florida State University, and is now teaching at the University of West Florida.

WILLIAM W. ANDERSON, BBA '61, is director of purchases with the A. E. Staley Manufacturing Company in Decatur, Illinois. He has lived in Decatur for the past 15 years and has two children: Lori, 16 and Brian, 13.

ROBERT J. JACHIM, BBA '60, MBA '61, was promoted to Lieutenant Colonel in February 1980. He is stationed at Fort Meade, Maryland, U.S. Army Intelligence and Security Command.

'62 MARGERY J. ENBERG, BBA '62, received a Master of Arts in College Teaching degree with a major in business from the University of North Carolina at Chapel Hill in 1974. She has taught at Durham Technical School and Kings College (a two-year business school) since 1973.

'63 WILLIAM L. COWELL, MBA '63, recently returned from Paris, France where he was assistant comptroller-GM France. He is now assistant director for Placement and College Relations at the General Motors central office in Detroit.

STEWART N. LOUD, JR., BBA '63, is program director for Piedmont Products, Inc., a subsidiary of Owens-Corning Fiberglas Corp. The subsidiary was created to manage a large government subcontract and to build and manage a new manufacturing facility. He is responsible for managing both of the above aspects of the subsidiary.

'64 JOHN A. LEITER, BBA '64, is chairman and CEO of StatLabs Inc. of Wichita, Kansas. He is also chairman and president of Libra Systems (a law office computer company), chairman of Statdata (a software and computer service) and Status (a medical office computer company).

GERALD M. MAJOR, BBA '64, is vice president, finance, for Standard Tube of Detroit Corporation, a manufacturer of welded steel tubing. He received his MBA from Michigan State in 1969, and is also a CPA.

THOMAS A. HARRIS, MBA '64, retired from the U.S. Army in March 1970, and became an industrial relations, personnel and safety administration with ITT-Grinnell Corporation until June 1973. He is now a purchasing agent and purchasing manager with ITT-Grinnell Corporation in Caldwell, Kentucky.

DANIEL M. ARNOLD, BBA '60, MAS '64, is currently editor of the "Enrolled Actuaries Report," a bi-monthly newsletter of the American Academy of Actuaries. He and his wife Jane ('61 LSA) celebrate their 20th wedding anniversary in June, 1981. Jane recently graduated from the University of Connecticut Law School. Kathy, the oldest of their four children, starts college in the fall.

FRANK B. RICE, MBA '64, is co-owner of Criterion Design Engineering in Royal Oak which designs metal-cutting machines for machine tool company customers. He and his wife celebrated their 25th wedding anniversary in November, 1980. They have seven children, ages 11 to 23.

JOANNE RUYLE, BBA '64, has returned to school at Portland State in Portland, Oregon, to take some additional accounting courses. After graduating from Michigan she worked for Michigan Bell Telephone as a management trainee in their commercial department.

MARTHA PURDY STEIN, BBA '64, received her M.S.W. from The University of Michigan in May, 1980.

STEVEN T. TABAC, MBA '64, has been a partner in the accounting firm of Richler, Lerner and Tabac in Montreal, Quebec, since 1977. He is married to Jacklin Goldberg and they have four children: Ivan, 15; Bradley, 14; Danny, 14; and Stephenie, 12.

'66 STANLEY M. BERGER, MBA '66, and his wife are expecting their fourth child in February, 1981. He is an investment analyst with McDonald & Co. in Cleveland, Ohio.

GEORGE D. LINDGREN, MBA '66, is director of marketing for Toro's spring and summer products (lawn mowers, tillers, grass trimmers, etc.). He is responsible for new product development there. He previously worked as group marketing strategies manager at Texas Instruments and in sales and marketing with General Electric. He is married and has one son, 9 years old. While he lived in Texas he also worked as a guest lecturer at Texas Tech University with marketing classes on product management.

STUART D. MCCOTTER, MBA '66, is a member of the Board of Directors of the National Institute for Burn Medicine in Ann Arbor. He is a supervisor of systems specification for Ford Motor Company.

THOMAS R. AHERN, BBA '62, MBA '66, is a manager of product development for G-M in Detroit. He writes that he is a member of the University of Michigan Golf Team, "M" Club, Alumni Club and Psi Upsilon.

'67 MICHAEL R. HALLMAN, BBA '66, MBA '67, joined IBM after graduation and in June, 1980, was promoted to regional manager of IBM's Data Processing Division's Southern Region, headquartered in Atlanta. He is responsible for marketing and technical support of IBM's intermediate to large systems in the six southeastern states.

JAMES E. HAMMOND, MBA '67, received his CPA in 1968 and CPBC (certified professional business consultant) in July, 1974. He is president of the Society of Professional Business Consultants and started his own consulting firm in February 1980 (PM Fox Valley, Inc.). He is a member of the editorial board of "Dental Economics" magazine and a regular contributor of articles.

BRUCE A. HILLMAN, BBA '67, is the owner of a privately held corporation engaged in the manufacturing and installation of commercial drapery to the designer/supply trade. He was recently awarded the largest single contract to date: the 600 room Cincinnati Plaza for Western International Hotels.

JAMES R. SCHWARK, BBA '67, is vice president and general manager of Schwark Furniture in Utica, Michigan. He is married to Candi Schwark and they have one child, Heather, age 7. He was named an Outstanding Young Man of America by the U.S. Jaycees in 1977. He is very active in Kiwanis International.

Joseph P. Yaney, MBA '64, Ph.D. '69, is studying ways to improve productivity

Joseph P. Yaney, MBA '64, Ph.D. '69, is working at the Texas Center for Productivity and Quality of Work Life as associate director and is also professor of management at Texas Tech University in Lubbock, Texas. After getting his MBA, Joe served as a captain in the U.S. Army, then returned to Ann Arbor where he was program director in the Center for Programmed Learning for Business for two years while finishing his Ph.D. He then taught industrial relations at Ohio State, and later served as head of the business program at the Harrisburg campus of Pennsylvania State, where he also had a joint appointment in the Department of Family Community Medicine in the Hershey Medical College of Penn State.

Joe has been doing work on improving productivity in textile plants, and has found that some of the intervention strategies yielded a 26% rise in textile productivity in plants in Tennessee. The productivity improvements stemmed from a combination of teamwork models (forming unit work teams), and the use of specific goals and goal setting techniques at the sewing machine operator



level. In one study, introduction of a work team concept along with goal setting methods and competition between teams for token rewards plus generous amounts of recognition resulted in a drop in turnover costs that saved \$276,640 in the first year of operation. Attention is now being directed to reducing the high levels of turnover that are found in hospital entry level jobs.

ARNOLD P. SMITH, BBA '67, worked for Burroughs Corporation in data processing sales & programming in Michigan for three years. He took various sales jobs until 1974 when he was called into full-time ministry. He is now administrator of the Institute of Ministry at The Christian Retreat Center, including bible teaching and preaching nearly every day. In 1976 he and his family moved to Sebring, Florida and began a new church and in March of 1979 he took his current position with Gospel Crusade in Bradenton, Florida.

JAMES W. BAKER, BBA '62, MBA '67, was general manager and vice president of his family owned business from 1968-1978. They have now redeployed the business assets and founded Basic Management Group, 1980, specializing in small business management consulting.

'68 RONALD A. MODRESKI, MBA '68, writes that he is using his MBA training all the time as sales manager for the multinational aerospace division of Sperry Vickers, in Jackson, Miss. The division has doubled revenues in the last

years while maintaining good profits and ROA. His position involves substantial traveling throughout the U.S. He is involved in racquetball, tennis, softball and golf. He says he and wife have become "Southern Yankees."

'69 ALBERT K. MOONEY, MBA '69, has worked for General Motors & Saginaw Steering Gear Division since graduation in a variety of positions: manufacturing, labor relations, personnel, product engineering, marketing and (most recently) sales. He and his wife have been married for 21 years and have a son and four daughters. His oldest son is attending The University of Michigan. Albert's father and father-in-law were both graduates of The University of Michigan.

'70 DONALD H. VANDOREN, MBA '70, left R. Shriver Associates in January, 1980 to start his own company, the Cabot Consulting Group. Cabot has 20 professional employees and provides a variety of management services to public and private sector clients. Their public sector studies concentrate on policy planning and evaluation, especially in energy, regulatory impact and economic analysis. In the private sector, they perform strategic and contingency planning studies, especially where the company must be aware of government involvement, such as regulatory issues and energy planning. In addition, Cabot designs, develops, and implements computer based management information systems.

DAVID W. WILLARD, BBA '70, received an MBA in marketing from Northwestern University in 1971, and since then has concentrated his career in the photographic industry. He has worked for Bell & Howell in marketing research and sales and the Vivitar Corporation in sales and product management. He joined Olympus Camera Corp., in October 1979. There he is responsible for sales forecasting, marketing research, new product development, sales promotion and marketing planning.

'71 MRS. GEORGE I. PURNELL, III, MBA '71, is currently taking a "breather" from her career to raise her three year old daughter, Jaimie, and her eight month old son, Geoffrey. She says it's hard work, but enjoyable. She and her family moved from Michigan to California in 1979.

'72 ROBERT W. MAYROSE, MBA '72, passed away April 10, 1980. He worked for International Harvester at the time of his death.

THOMAS L. PICKLES, BBA '71, MBA '72, has been investing in real estate (income property) as a "side line career." He is a national marketing manager for McDonald's Corporation and writes, "hopefully, my investments will grow to the event I can blow off this burger business and become stinking rich as a land baron."

GREGORY W. BARBER, MBA '72, served on active duty in the USAF from June, 1972 through May, 1978. He was hired by Delta Airlines as second officer, B-727, in September, 1978. He is presently based at DFW International Airport in Dallas, Texas. He was married to the former Joyce Postlethwaite of Ravenna, Ohio, in June, 1978.

BARRY BLY, MBA '72, has been vice president, Finance and Administration and Director of Kates Ltd. in Montreal, Quebec since July 1977. The company is a medium-sized manufacturer of women's sportswear selling nationally across Canada and, shortly, to Europe. His wife, Ronda, has recently returned to school to obtain a bachelor's degree in fine arts to go with her bachelor of commerce degree.

JOHN E. CHRISTENSEN, MBA '72, and his wife had their first child, Laurence Michael, February 16, 1980. He is assistant treasurer for Santa Fe International Corp. in Alhambra, Calif.

'73 JEFF BARTLETT, MBA '73, currently executive recruiter with the Chester Group in San Francisco, California, has been elected to serve as president of the National Association of Accountants, Oakland-East Bay Chapter, for the 1980-1981 year. Jeff is also a member of the California Society of CPAs, Chairman of the AICPA Committee on Relations with Faculty and Students, and is active in community affairs as a member of the Kiwanis Club. He enjoys sports and jogs three times a week.

PAUL J. BURKE, BBA '73, has two children, Tommy, 4 years old and Tracy Ann, 9 months old. He is an administrative assistant and office manager for Iodent Company which is a private label health and beauty aids manufacturer with plants in Tennessee and California. The company is based in Bloomfield Hills, Mich.

HERBERT R. CAMPBELL, JR., BBA '73, is involved in a family-owned industrial/hardware/automotive/electrical wholesale supply business which serves eastern Michigan as well as customers throughout

the country. He was elected to the Port Huron, Michigan City Council in 1979.

LARRY JONES, BBA '73, presently serves as senate counsel to the Transportation and Veterans Affairs Committees of the Minnesota State Senate in St. Paul. He graduated from the University of Minnesota Law School in 1977. Prior to his present position he was in the private practice of law and worked for the Legal Rights Center in Minneapolis, Minnesota, representing low income clients in criminal proceedings as well as instituting internal operating procedures for the Center.

DAVID M. KAUFMANN, MBA '73, moved to Denver, Colorado, to start his own CPA practice. He offers tax, financial planning, and accounting services. He was formerly employed in the small business tax division by Arthur Andersen and Company in Chicago.

BRADFORD K. MORTZ, BBA '73, joined Sperry Vickers as a cost accountant in Detroit upon graduation in 1973. He has moved to various financial management positions including five years in Omaha, Nebraska. He has been promoted to manager, financial administration after receiving the MBA from the University of Nebraska. His new position encompasses commercial division profit planning, forecasting, investment analysis, staff accounting, cash management and consolidations.

JAMES D. PAYTON, MBA '73, was married August 17, 1980 to the former Priscilla Gould. He is an account executive with Metromedia Inc. in Owings Mills, Maryland.

'74 MICHAEL O. ANDERSON, BBA '69, MBA '74, was recently promoted to Assistant Divisional Comptroller at Delco Air Conditioning Division of General Motors. He was previously assigned to General Motors Corporation Central Office financial staff where he held various job assignments.

FRANCOIS GENEST, MBA '74, has been named a Fellow of the Society of Actuaries. To be named a Fellow, he successfully completed nine examinations administered by the Society on the mathematical basis of insurance and its specific applications to life and health insurance, pension and other private and governmental benefit plans. He is a product manager with La Laurentienne, Quebec.

PETER C. HAUTH, BBA '74, has been working for the City of Flint since 1975. He progressed through the positions of

temporary accountant, accountant, tax collection supervisor, administrative assistant (treasury) and internal auditor. He was named acting city auditor in 1979 and became the city auditor in June, 1980.

ROBERT J. KIPPERT, JR., BBA '74, works for McEndarffer, Hoke & Bernhard in Bloomfield Hills as a senior tax accountant. He received his J.D. from Wayne State University Law School and is a member of the MACPA and State Bar of Michigan.

LESLIE D. KOTMAN, MBA '74, was promoted from tax senior to tax manager at Price Waterhouse & Co. in July 1980.

TERRY A. LANKER, MBA '74, has two children, Terry, Jr., 15 and Christopher, 10. His hobbies include being a scout-master, golf and sailing. His is a supervisor in machine development at General Motors.

JACOB W. ULVILA, MBA '74, received a doctor of business administration degree from Harvard University last year, and is currently employed by Decision Science Consortium, Inc., a management consulting firm in Falls Church, Virginia, which is headed by Rex Bown, a former professor at the Business School.

75 GLORIA D. ALEX, BBA '75, is an accountant for the City of Ocala, Florida where she is in charge of capital projects. She is a member of the Affirmative Action Program of Ocala and of New St. John's Baptist Church. She is married and has two children.

J. MARTIN BRENNAN, JR., BBA '75, states that after a brief stint with General Foods Corporation (Livonia), he began the study of law at the Detroit College of Law in 1976. He completed his studies and passed the state bar of Michigan in 1979. He is currently employed by John J. Grech and Associates and looks forward to growing with the firm and Macomb County.

FREDRIC D. BUCHALTER, BBA '75, states, "aside from pursuing a successful career in the travel business, I have been performing as an actor/singer on a regular basis in local dinner theatre and other professional productions around the Detroit Metropolitan area."

BRUCE P. GREENFIELD, MBA '75, is the father of one child, Jessica, born November 16, 1979. He is a specialist in airline analysis for General Electric in Cincinnati, Ohio.

PETER R. GRIFFIN, BBA '75, has been working for American Natural Resources

David D. Bosch, MBA '73

David D. Bosch, MBA '73, is now Deputy Manager of the Arabian American Oil Company in Riyadh, Saudi Arabia. His job involves liaison with the Kingdom's central government in Riyadh. He says, "In view of the broad range of challenges posed by operating the world's most productive oil fields and interfacing with many Saudi Ministries and Agencies to solve problems, there are very few dull days. A recent activity in which I participated was to assist in writing a position paper to the U.S. Congress on behalf of the American Businessman's Group of Riyadh. The paper pointed out U.S. government disincentives to the export business and the number of U.S. domestic jobs that are lost as a result of legislation increasing U.S. expatriates Federal income tax on earnings abroad, anti-boycott regulations in their various interpretations, and the ambiguity of the Foreign Corrupt Practices Act. The paper was well received by the Congress and received considerable comment in the press." Dave joined Aramco as a financial analyst in New York,

and in 1974 was stationed in Dhahran, Saudi Arabia. In 1975 he joined FMC Corps Middle East Office in Beirut as administrative manager with responsibilities for international marketing in the Middle East—and also for "evacuating our U.S. family staff during the 1975 civil war!" With the collapse of Beirut as a base for international business, he rejoined Aramco, and held posts in Dhahran, Jiddah and subsequently was promoted to his current position. He says, "Life in Riyadh has become quite fast-moving in the past several years, as the world recognizes the economic and strategic importance of Saudi Arabia and politicians and prominent businessmen visit in numbers that strain the resources of this thinly populated kingdom. With our tennis court beside our house, my wife and I enjoy playing almost every afternoon, and have captured the local "mixed doubles" tournaments for the last three years running. Although uncertain of the course that world politics may take, we are hoping to stay in the Middle East for some years to come."

for three years. He started out in the pension investment area as a financial analyst before transferring to cash management. He handles all the cash forecasting for AMR's subsidiaries. He graduated in December 1980 from the University of Detroit's Graduate School of Business program with a major in finance.

ROYCE A. GROSS, MBA '75, since graduation has served as the assistant supply officer in a submarine tender in San Diego and as the contract officer for Navy shipbuilding contracts at Litton Industries, Inc. shipyard in Pascagoula, Mississippi. He has recently started a year's study at the Industrial College of the Armed Forces in Washington, D.C.

LARRY Y. MAR, BBA '75, has been promoted to tax accountant for Arcata. Arcata is in three basic businesses: printing, forest products, and molded containers.

WILLIAM P. SCHUMAN, BBA '75, graduated from Harvard Law School with a J.D. degree in 1979 and is working in Chicago with the firm of McDermott, Will & Emery. He was recently married to Caryn Gutmann.

KEITH G. SCHWAN, MBA '75, was promoted to manager of information systems for Arthur Andersen & Co. after five years of detailed and supervisory involvement in high technology data base and on-line computer system development projects designed to meet the needs of progressive clients.

GARY M. BUCKLAND, BBA '73, MBA '75, is currently a product manager in Greyhound Corporation's Armour-Dial Division based in Phoenix, Ariz. He is in charge of several brands in the company's soap/household products division. Prior to joining Armour-Dial in

January, 1978, he spent two years with Leo Burnett Advertising, Chicago.

ERIC B. SEIFERT, BBA '75, is currently serving as treasurer of the Tri-Cities Chamber of Commerce and member of the City of Grand Haven Zoning Board of Appeals. He will be president of the Kiwanis Club of Norton Shores for the 1980-81 administrative year. He is a loan officer for Security First Bank in Grand Haven, Mich.

RICHARD H. TOWNSEND, MBA '75, recently resigned a naval commission to join the corporate staff of Hoover Universal in Ann Arbor.

THOMAS H. WENKSTERN, BBA '75, received his MBA from UCLA in June 1979 and is now vice president for George Smith Financial Corporation (a corporation formed in October 1979 of individuals formerly employed by Sonnenblick-Goldman Corporation of California). During his MBA program he worked as a management consultant for Peat, Marwick & Mitchell Company in Los Angeles. He lives in Santa Monica, Calif.

'76 STEVE McCORMOCK, MBA '76, reports that he is no longer a product manager for Interactive Data Corporation, a subsidiary of Chase Manhattan Bank. Recently, he has joined the Massachusetts Technology Development Corporation as senior investment analyst. MTDC was formed to provide a source of venture capital to new and expanding high technology enterprises which have the capacity to generate significant employment growth in Massachusetts but which have been unable to secure from conventional sources sufficient affordable capital to adequately fund such expansion. He writes news of other classmates, telling us that John Pfeil, MBA '76, sold his fast food taco stand in Mexico City for a quick profit and has opened the first sun tanning center in Acapulco, and that DOUG SHUFELT, MBA '76, continues to work for Cronston Print Works Company as Merchandising Controller, a title invented by Doug and Steve when they were roommates in New York City.

RUSSELL C. POOLE, BBA '76, recently graduated from the Graduate Tax Law Program at Boston University with an LL.M. in tax law. He is currently interviewing for a position with a tax law firm.

WILLIAM LYLE AAMOTH, BBA '76, says, "After graduating from the U of M, I received my MBA from Michigan State in 1978, with a major in finance. I worked at Chrysler Corporation (Highland Park)

on their treasury staff for one year before taking my present position with Clark Equipment Company. I am primarily involved with the foreign exchange, debt, and liabilities management of Clark's European subsidiaries." Aamoth is senior financial analyst for Clark Equipment Company in Buchanan, Michigan.

ERIC W. KOBOSH, BBA '76, was promoted in June 1979, from western project manager to director of all corporate projects at ASIST Corporation, which is a general practice management consulting firm in Detroit. Eric writes, "The company is currently involved in installing maintenance management systems in the power generating stations owned by Southern California Edison, Illinois Power Company, and the Public Service Company of New Hampshire."

JOHN D. PFEIL, MBA '76, and his wife have adopted a Korean baby girl (Lyndsey Davis Pfeil). John is product manager of new cereals for General Mills, Inc., in Minneapolis, Minnesota.

RICHARD A. STEVENS, BBA '76, writes that after practicing law for a year in Lansing he is presently associated with the firm of Murphy, Burns & McInerney in Grand Rapids.

D. JEFFREY SWINSON, MBA '76, joined Dean Witter Reynolds in May 1979 and became a registered representative of the New York Stock Exchange in October 1979.

ROBERT SZALKA, BBA '76, attended the University of Detroit School of Law from 1976-1979; sat for the Michigan Bar Exam in July 1979 and became a member of the State of Michigan Bar Association in November 1979. He works for Dennis R. Nettle, P.C., a general law office.

GLENN T. RADER, MBA '76, worked for a division of Atlantic Richfield for three years after graduation. He was hired there into an entry level financial analysis position, and by the time he left was the financial and planning projects manager. He and his wife have returned to Ann Arbor, where he is manager of management science for Comshare, Inc., and she is attending the School of Dentistry and plans to start a practice in the Ann Arbor area.

DENNIS M. WALKOWIAK, BBA '73, MBA '76, joined Ford Motor Company after graduation in May 1976. He was appointed Supervisor-Labor Relations and Hourly Personnel at the Sandusky Plant, Sandusky, Ohio. His wife, Susan, graduated with a BSN from the University of Michigan's School of Nursing in 1976.

'77 RAYMOND M. LASSING, MBA '77, left Ford Motor Company after 3½ years and is now a product line controller at National Semiconductor in Santa Clara, Calif.

ALAN PAUL RICHARD, MBA '77, is an auditor with Price Waterhouse & Company. He is a CPA and a member of MACPA and AICPA.

MITCHELL J. ROBINS, BBA '77, has recently opened a CPA office in Southfield, Michigan with Norman G. Solomon, a Michigan State graduate. He is a member of the MACPA and AICPA. Says Mitch, "starting a firm at this stage is rough, but there's nothing like working for yourself." Mitch and his wife, Amy (BS '78), live in Farmington Hills, Michigan.

DEBORAH ANSINK RUSSELL, MBA '77, writes, "I'm presently working directly for the president of the Santa Fe Trail Transportation Company. The company encompasses both common carrier operations (general commodity carrier) and all aspects of piggyback operations for the Santa Fe Railroad. My specific responsibility is managing an internal costing program that I and another person recently developed and implemented for the Common Carrier Company. Additionally, I periodically become involved with corporate planning, marketing strategies, pricing and budget control.

RICHARD D. SKAFF, BBA '77, received his MBA from Michigan State in 1979. He is a marketing representative for IBM.

JAMES ROY CARSON, MBA '77, writes, "One month after receiving my MBA I was promoted to manager, engineering administration for the engineering division of the defense group of Chrysler Corporation responsible for controller operations, procurement, personnel, contract administration, and project management support systems. When the Chrysler board of directors formed Chrysler Defense, Inc., as a wholly owned subsidiary on July 10, 1980, I continued as manager, engineering administration, with the same responsibilities, reporting to the vice president engineering.

JANET ANDERSON CLARKE, BBA '77, was recently promoted to product manager for a \$100 million surgical instrument division of American Hospital Supply Corp. She is responsible for profit and loss of two markets of surgical instruments; all marketing responsibility, including promotions, prices, new products, altering existing products, training sales force, profit planning

budgeting, etc. Janet is one of the youngest women in AASC to be a product manager. She is also attending the University of Chicago's evening MBA program.

JAY M. COURAGE, MBA '77, says, "I recently left Booz Allen and moved to Houston to take a job with Simmons & Company International, a small investment banking firm specializing in corporate finance for oil service companies, primarily mergers and acquisitions. Wandering around Houston, I have encountered Harold Siegel and Dave Burta from our class."

AARON P. GERSTMAN, BBA '77, worked as a financial analyst with National Gypsum Company in Southfield for three years and enrolled this fall in Michigan's MBA program.

ROGER C. JOHNSON, MBA '77, and his wife have a daughter, Jill, born November 3, 1979. He is area manager of sales for Deere and Company in Moline, Illinois.

78 WILLIAM H. WOLPERT, MBA '78, was an account manager for two years with Cummins Engine Company in Columbus, Indiana, before moving to Dallas, Texas, where he is now manager, automotive sales, with Cummins Engine Company.

SIANG-SHEN J. YUN, MBA '78, was recently promoted from a senior engineer to a principal design engineer with Ford Motor Company in the electrical & electronics division. He is responsible for a group of design team members developing products for Ford of Europe cars. He and his wife, Jennie, have two children and live in Livonia, Michigan.

ROBERT G. BROMLEY, MBA '78, says, "I am currently a doctoral student at the University of Nebraska. The Michigan Accountancy Foundation has funded my doctoral work with two grants—one in 1979 and one in 1980. My last publication was in *Taxes*, called, 'A Closer Statistical Look at Tax Court Compromise' (May, 1979)." He was voted 1980 Research Assistant of the Year and is a University of Nebraska American Accounting Doctoral Consortium Representative.

CPT. WADE S. LZENICKA, MBA '78, writes, "After graduation in 1978, I spent 1½ years working in a small business in Atlanta, then changed jobs to go to work with my current employer, Printpack, a flexible packaging manufacturing firm. My job involves acting as the intermediary between sales and production and overseeing orders from the time they

are received by sales until they are produced and shipped. It's a great job for me—fast-paced with lots of exposure to sales and production in a highly visible environment. I am also still active in the Army Reserve and was recently promoted to Captain. In addition, I am an assistant coach for the Georgia Tech lacrosse team and am preparing for my third season with them. I love living in Atlanta, as does my roommate, Brad Meier, MBR '78."

MICHAEL EDWARD MEISEL, MBA '78, says, "I moved to California immediately after graduation and began working for American Hospital Supply Corporation. I was married in November, 1978, to Janice Berger (MS Speech Pathology, '78 U of M) and we purchased a home in Irvine, California, in 1979. I recently left American to join W. R. Grace as their data processing manager. I am still flying, though not as frequently, and I earned my multi-engine rating in March, 1979."

PATRICK R. GAILLARD, MBA '78, worked for Deloitte Haskins & Sells for two years as a management consultant before becoming a senior financial control analyst with Travenol Laboratories, Inc. in June, 1980. He and his wife, Diane, have two children and live in Deerfield, Illinois.

MICHAEL A. HERRINGTON, BBA '78, is working for Intel Corporation in Santa Clara, California, as a piece parts cost analyst. His wife, Rosalie, is attending Southwestern Law School in Los Angeles, where they are now living. Mike is working on his MBA at USC.

SHARON NORENE LISS, MBA '78, is currently comptroller for a small glass container plant which makes bottles for Anheuser-Busch. The company is Owens-Illinois, Inc. She previously worked one year in corporate treasury and as a project analyst at the Atlanta plant. Sharon is living in Attleboro, Mass.

KAREN MARIE LAW, BBA '78, married Mark A. McDowell and they are living in Livonia, Michigan. She is working as a staff accountant at Deloitte Haskins & Sells in Detroit, recently received her CPA license, and is enrolled in the U of M evening MBA program.

JONATHAN E. TESAR, MBA '78, started working with Bank of America in June, 1978, in the Sacramento region. After completing an intensive training program, he was assigned as a commercial lending officer at Yreka, California, and in March, 1980 was promoted to assistant vice president in charge of consumer loans at the Eureka Main Branch, Eureka,

California. His wife, Ruth, is in a nuclear medical technologist training program at the University of California, Davis.

VERLAN J. WISSINK, MBA '78, is a product manager with General Mills, Inc. in Raleigh, North Carolina. He and wife, Diane, have a daughter Sally Anne, born in August, 1979, and they live in Cary, North Carolina.

PAUL E. ANGELO, MAS '78, was recently promoted to manager of professional support at Coates, Herfurth & England in San Francisco, California, where he does actuarial consulting. He writes that he is singing in various bay area choruses, including the California Bach Society, and says "I also participated in Workshop/Festival of Masses with (The!) Robert Shaw."

KATHLEEN ANN BRENNER, MBA '78, is working in Dallas, Texas, with Frito-Lay, Inc. She worked as an assistant product manager on the Doritos brand for one year, as associate product manager on the Cheetos brand for one year, and was recently promoted to product manager, new products, responsible for a new grain snack and an all new puffed snack development.

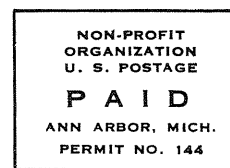
ROY H. BURGESS, MBA '78, spent two years on the staff of the Chief of Naval Operations in the Pentagon working on automated data processing plans and programs. He was awarded the Navy Commendation Medal for that effort. In June, 1980, he assumed the position of director of inventory control with the Naval Supply Depot in Guam.

ALBERT D. COOLEY, MBA '78, recently left his position at RCA Solid State to take a position as product manager at Motorola's Codex Subsidiary. He is living in the Boston suburbs and enjoying the area immensely. He just began working on his Master's Degree in engineering this fall by taking night courses at Boston University.

JOHN L. DALY, MBA '78, married Nancy J. Kelley (MSU '78) on June 28, 1980. They are living in Southfield, Michigan, where John is a senior administrator on the administrative services staff of Arthur Andersen & Company.

STEVEN E. EDER, MBA '78, began work on July 1, 1980, with the Taubman Company in Troy, Michigan, as chief accountant.

79 MICHAEL S. P. O'CONNOR, MBA '79, is a banking associate at Continental Bank in Chicago, where he is working in the commercial banking department, transportation industry



group, and specializing in lending to leasing companies.

ARTHUR L. ESCH, MBA '79, is a staff accountant with Price Waterhouse, and recently began a two-year tour of duty in the international tax department of the firm's London, England, office.

MARIA J. KOZYN, BBA '79, is attending the University of Detroit's MBA program and plans to transfer to the University of Colorado to complete her MBA studies. She is on a two year leave of absence from Fisher Body Division, General Motors Corporation, where she is an accountant.

DAMIAN G. ZIKAKIS, BBA '79, passed his CPA exam in May, 1979 and is a member of AICPA, Illinois CPA Society, Public Relations Council of Illinois CPA Society and the Chicago Jaycees. Damian is a staff accountant at Price Waterhouse & Company.

ALAN LEVINE, MBA '79, reports that he is a financial analyst at Standard Oil Company of California, is living in Alameda, California, and is getting married in May, 1981.

'80 BRIAN MOURRIE BLAUVELT, MBA '80, went to Montana after graduation where he went backpacking, bear hunting and trout fishing until he headed east. He then spent 9 days fishing on the Chesapeake Bay and toured Washington, D.C., Northern Virginia, and New York, before heading to work in Houston where is currently a supply analyst for agricultural chemicals with Exxon Chemical Company. He is deeply involved with the sulphur market and his primary concern is a U.S. supply demand forecast for sulphur until 1995 and a sulphur pricing study. Then he will start working in the area of fertilizer. Brian says, "anybody who is in Houston to visit or needs a place to stay, give me a call. I'll be glad to help."

GARY PAUL BLITZ, BBA '80, passed all parts of his CPA examinations in May, 1980 and is now attending the Juris

Doctor Program at New York University School of Law.

PHILLIP DAVID FOWLER, MBA '80, is a lending officer trainee for Chemical Bank in New York City.

JULIE K. GIDEL, MBA '80, taught introductory marketing courses to undergraduates at Clemson University, South Carolina, where she was also a consultant for the Small Business Development Center. Julie is married to Michael T. Callaghan.

SUSAN ELAINE SCHWARTZ, BBA '80, married Jeffrey S. Hoffman (U-M '79) in May, 1980. Susan is an advertising and marketing associate with Standard Oil Company in Cleveland, Ohio.

KENNETH JOSEPH JAKUBOWSKI, MBA '80, works with the Ford Motor Credit Company in the finance department as a financial analyst. He is responsible for variance analysis, costs forecasting, and evaluation of cost control procedures.

THEODORE BRENT STONE, MBA '80, accepted a job in the national tax department of Ernst & Whinney in Washington, D.C. His job responsibilities include: updating in-house tax training manuals, acting as discussion group leader at various tax training programs, and working on client problems from other E & W offices. His wife, Karen, is a CPA and they live in Alexandria, Virginia.

THOMAS EDWARD KING, MBA '80, is a programmer analyst with the Ford Motor Company in Troy, Michigan. He received his B.S. in mathematics at Ball State University in 1967.

PATRICIA ANN SWANSON, BBA '80, is an accountant with Omnicom of Michigan. Patricia says, "After working for a while. I discovered the University of Michigan Business School didn't teach you everything you'd need to know. A truly shocking discovery after P.C. 395."

ROBERT CARLISLE JONES, MBA '80, is an assistant director in the options depart-

ment of Lynch Jones & Ryan in New York City, where he is doing sales and research for a dynamic option overriding strategy. He is applying for registered representative and registered options principal status. He and his wife, Terresa, live in Short Hills, New Jersey.

ERMAN EUGENE LEPLEY, JR., MBA '80, was married on July 19, 1980, to Margaret Keating, also a U of M graduate. They honeymooned on Portage Lake and at Mackinac Island. Before getting married, Erman worked for the Census Bureau in Ann Arbor for two months and is now a staff accountant with Price Waterhouse & Company in Charlotte, North Carolina.

MARION EDITH PARR, BBA '80, was an administrative assistant to the Property Manager at Community Management Corporation in Reston, Virginia but has decided to move to the west coast for a time. She says: "It appears that a BBA is valuable these days—and an MBA even more so!"

JOHN SCOTT REEDY, MBA '80, is a strategic planner with Greyhound Corporation in Phoenix, Arizona. "The 1980 Fiscal Year represents a true step forward for the Greyhound Corporation," says John. "It is the first year in which long-term strategic planning will be utilized on a company-wide basis. Making that 'transition' is extremely difficult, particularly for the older, divisional managers." John continues, "Implementing a new process (whether it be strategic planning, financial planning, or marketing programs), requires a good deal of salesmanship. The sales techniques used to promote the programs among the divisions is quite different from the promotional techniques used with corporate personnel."

JEFFREY R. SMITH, MBA '80, is a staff consultant with Arthur Andersen and Company, and his wife, Sue, is head nurse at U of M Hospital in Community Health Nursing. Jeff still plays rugby for U of M Club and he sat for the CMA in June.