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Sun Hydraulics Corporation (A and B) (Abridged)

Bob Koski said that he thought like an engineer, although he had started out wanting to be an architect and bridge builder. He enjoyed developing innovative solutions for complicated problems. In ten years with Dynamic Controls, Inc. (from 1959 to 1969, a decade during which Dynamic Controls' annual sales grew from $600,000 to $5 million), he had risen through the ranks from product engineering to industrial sales, marketing, new product development and into top management. By 1969, as V.P.-Director of Corporate Development, he held the second highest position in the company, behind the company founder.

Bob Koski had also been called a maverick and an idealist. In 1970 at age 40, he left Dynamic Controls. His goal was to create a new company that would avoid the human relations problems and pitfalls he had observed virtually everywhere in the world of organizations. He gave himself three years to get his new business on its feet. He assumed it would take at least five years of operations to gain a reputation with distributors and at least three years to begin showing a positive cash flow. He intended to spend a full year planning and preparing the new operation. The new firm would be called Sun Hydraulics Corporation and would develop and manufacture hydraulic valves and cartridges to precise and exacting specifications.

While he expected to stay in the design, manufacture, and sales of fluid power products, initially, Bob was not exactly sure how the Sun Hydraulics' product line would evolve. Industry growth and his own product development capabilities seemed to indicate that there was room for Sun Hydraulics in the specialized component marketplace. Bob believed the new company, if successful, could eventually grow at least as fast as the company he was leaving. **Exhibit 1** gives his 10-year growth projections for Sun Hydraulics under pessimistic, realistic, and optimistic assumptions.

Bob also wanted to exercise some control over the pace of growth. He did not want the organization itself to grow beyond 200 to 250 employees in any one location. Of immediate concern to him was the barrier problem of human displacement due to growth, while maintaining his primary goal of designing a dignified working environment for technical, manufacturing, and clerical personnel alike.

Research Associate Colleen Kaftan wrote this case with Professor Louis B. Barnes as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

The Problem and its Manifestations

According to Bob Koski, the single most obvious culprit in "standard" organizations was the organization chart and what it signified. The mere existence of a formally defined hierarchy tended to force individuals into defensive, unproductive and damaging behavior patterns which prevented the organization from responding to changing business requirements. He believed that rigid organizational structures all too frequently caused key employees to leave the company or, at a minimum, "took the fire out of people's eyes."

For example:

> Every key individual in the company I helped to build (with one exception, and he was physically located elsewhere) left the organization. I think they were driven out by pride caused by organization charts. Organizational restructuring, for them, represented above all a series of demotions.
>
> These people were quite competent. Unfortunately they were given titles like Vice President of something, or Manager of something. As the company outgrew their capabilities and needed to hire or promote more talented people who would appear on the organization chart as their superiors, there was no place the old-timers could go that would satisfy their egos. They had to leave. They could not stay and save face with all the other employees. They had to leave.
>
> So, if that was the effect of having an organization chart, then it really was a tragedy because they lost all the talent, all the know-how, all the accumulated experience those people represented.

Another problem Bob associated with typical business organizations was the process he called "ossification"—an exaggerated focus on prescribed procedures as they "congealed" over time in the minds of employees:

> I think ossification takes place when, for promotion, it becomes more important that a person know how the business works internally than anything about the external activities of the company. At that point in time, it's as if a cancer has taken over that is very difficult to stop. By not having an organization chart that people only look at sideways to see who is above whom, and by not having job descriptions and titles, it might be possible to defer that process of ossification.
>
> Now, all of the management thinking I've read in the past says that the way to get things done efficiently is to start with a process of describing jobs clearly. But if you do that, it almost always seems that you go through a life cycle. On a month-to-month basis, you can follow a sequence of predictable events which have tragic consequences down the road.
>
> "Articulate" people rise in power and assume control. "Knowledgeable" people, if not also articulate, become discouraged and either leave the organization or settle into middle management positions as passive obstructionists. The process takes about eighteen months.

Elements of a New Design

Koski felt that the first measure of Sun Hydraulics' success would be the company's record in attracting and keeping talented engineers. Their design contributions would be critical to Sun Hydraulics' performance in the fluid power industry. In addition, how they related to shop and other employees would determine Sun Hydraulics' ability to develop, manufacture and market quality products. This in turn would shape Sun Hydraulics' reputation with distributors, customers, bankers, suppliers, and others on whom the fledgling company would depend as it carved its place in the market.

Bob expected Sun Hydraulics to develop a personality of its own based on its employees' contributions over time. From the outset, however, he intended to emphasize several specific ways in which Sun Hydraulics would *differ* from more typical organizations. These included:

1. Horizontal Management

There would be no hierarchy, no titles, no formal job descriptions, no special benefits, no reporting relationships, and no close supervision in Sun Hydraulics. People would be expected to decide for themselves, based on widely shared information on operations, how best to contribute to the company's objectives. Both manufacturing and office personnel would be expected to work with others in the organization as they deemed necessary to accomplish their tasks. "Horizontal management" would encourage the formation of "natural clusters" or groups to achieve whatever work had to be done. "Thinking" would be a shared responsibility, so would decision making.

Bob characterized the essential differences between "horizontal" and "hierarchical" management in terms of a then popular approach to understanding human relationships. This framework classified many typical working relationships as "parent-child" interactions. Bob hoped that horizontal management would create an "adult-adult" environment at Sun Hydraulics.[1]

Some functions, such as salary setting and performance reviews, would be difficult to perform in an entirely horizontal organization but Bob expected the organization to develop new ways of approaching these functions within the framework of horizontal management. In every case the driving value was to be one of mutual respect.

2. Eliminating Intimidation

Critical to mutual respect was the elimination of what Bob called "intimidation functions" in the organization. For example, Sun Hydraulics would have no purchasing agent, a job Bob described as "intimidating suppliers." Instead the company would strive to build solid working relationships with suppliers who would be trained to understand Sun Hydraulics' needs and be motivated to respect them out of shared long-term interests.

Likewise, there would be no quality inspectors in the plant. Each shop employee would be responsible for the quality of his or her own work. The high standards for Sun Hydraulics' precision products would be understood and emphasized by all. Whenever quality problems arose, the person discovering them would be expected to initiate corrective action rather than merely point out the error to someone else. This might entail reworking, scrapping, or joint problem-solving with other individuals or departments as required to eliminate the flaw. Each and every product would be

[1] The references to "parent-child" and "adult-adult" relationships were developed by Eric Berne in his book *Games People Play: The Psychology of Human Relationships* (New York, Grove Press, 1964).

subjected to extensive functional tests before shipment to assure consistent product quality and to catch any errors.

3. Operational Communications

The foundation for Sun Hydraulics' unorthodox climate would be a wide-open system of operational communications. By that term, Bob Koski meant that all information pertinent to the company's operational activities would be made available to all employees.

> If we want to encourage self-management, we have to figure out a way to give people the information they need to decide what they want to do. This is predicated on the notion that people have a hard time doing nothing. If they're going to do something, most people would rather do something useful than something non-useful, and given an opportunity to figure out what's most useful, they might just do that.
>
> So the first task of horizontal management, to me, is to dismantle the power structure that controls operational communications, making sure that everybody has equal access to whatever information they need to do their jobs.

Ideally these open communications would allow shop employees to schedule their own work. Scheduling was a particularly important problem in manufacturing the kinds of products Sun Hydraulics would make. For one thing, the production processes were complicated and lengthy. Typically it took several weeks longer to manufacture a set of hydraulic valve parts than the lead time the customers were willing to give.

Since, it was very difficult to forecast sales within acceptable ranges of accuracy, most companies experienced problems with inventory control and/or with chronic stress in meeting short delivery deadlines.

These "hassle factors" led shop employees in typical hierarchies to lose respect for the decision makers in management. It was also an area in which Bob expected Sun Hydraulics to outperform the competition with its emphasis on open communications and self-direction. If each employee were encouraged to work at reducing the production scheduling problem from his or her own perspective, the collective solutions would be more comprehensive and easier to implement:

> My understanding is that hierarchies were originally developed because workers were unwilling, uneducated and uninformed. There were very limited capabilities for passing information. Informed people were the thinkers; uniformed people were forced to be doers. It was a very efficient system for that time.
>
> Today people aren't threatened any more by anything and you have great potential for communications. I think horizontal management is first made possible by universally available information. The more we develop it, the more it will enhance self-management.

4. Group Self-Management

As an outgrowth of horizontal management and open communications, Bob expected that natural clusters would emerge among employees according to their work locations and tasks. Many natural clusters would include both office and plant people working together, for example, to develop new products or processes.

Where necessary, these groups would perform the control functions that were usually built into the hierarchy in other companies. In matters such as job-related behavior, Sun Hydraulics' employees would feel responsible to their peers rather than to a superior imposing external rules. For example, shop safety rules would be written by the workers involved who afterwards would be responsible for their implementation.

Most training would occur within these work groups with minimal formal structure. New employees would be brought into the group and given basic orientation by their peers. They would be encouraged to ask any group member for help when needed.

Contrary to industry wide practices, there would be no standard production times or procedures and no piece rate pay incentives at Sun Hydraulics. The focus would be on the group's contribution rather than on any individual's performance record.

5. The Decision-Making Process

Decision making was another area in which Bob Koski wanted Sun Hydraulics to be different from other companies. Many "people problems" he'd seen arose from the power struggles embedded in typical decision processes. In analyzing the problem, Bob had identified four recurrent roles in decision making:

- The "author" — the discoverer of the need for a decision (who usually assumed proprietary rights to the decision).
- The "executive" on the formal or informal organization chart, who most people believe should make the decision (who would regard other decision makers as encroaching on his prerogative).
- The "expert" — the party most knowledgeable about the subject of the decision (who could be expected to defend this position).
- The "soldiers" — the person(s) most affected by the decision on a day-to-day basis.

In Sun Hydraulics Bob hoped to instill the understanding that all four parties should work together to arrive at joint decisions. "Authors," "experts," and "executives" should be encouraged to subordinate themselves and to serve as consultants to the "soldier(s)" who would either make the decision or, at a minimum, be comfortable with a consensus decision. He expected the decision discovery process to enhance both the quality and the implementation rate of the decisions that resulted.

6. The Ideal Employee

One quality in particular seemed important when it came to the kind of people Bob sought in creating Sun Hydraulics. That was the person's ability to be an accurate judge of his or her own competencies. Even beyond skills and intellectual capacity, Bob planned to focus on accurate self-assessment as a critical asset for prospective employees and colleagues.

It seemed to him that much of most managers' day-to-day activities was spent resolving problems created by people who were not good judges of their own competencies. Without these problems there would be little need for managers as a separate class of employees.

Bob knew that some people would consider this assumption highly idealistic. However, using self-knowledge as a key hiring filter, he expected to assemble enough skilled and talented people, from Sarasota, Florida and elsewhere, to make Sun Hydraulics a reality.

The Formal Plan

Bob Koski set down his ideas in a 34-page document entitled, "Sun Hydraulics Corporation: Plans and Objectives." Early in 1970, he circulated the handwritten report to four local bankers and a number of family members and other people likely to be investors interested in the new start-up.

His plans and objectives included detailed 10-year projections about sales, number of employees, space requirements, and the development and construction of Sun Hydraulics' first plant. There were also the pro forma financial statements under three alternative sets of assumptions shown in **Exhibit 1**. These in turn were supported by descriptive statements on the fluid power components business and Sun Hydraulics' product, manufacturing, and distribution policies.

In Bob's mind, though, his overriding purpose was most accurately stated in the sections on Sun Hydraulics' corporate creed and philosophy:

CORPORATE CREED

The creed (or philosophy) of a company when clearly expressed and enthusiastically used creates the foundation of a corporation's internal and external personality.

For this new corporation to quickly establish itself and maintain a high product standard while growing rapidly it will be important to develop an ethical, aggressive, responsive and stable impression on customers, distributors, employees and vendors as soon as possible.

Perhaps most importantly, the ultimate quality of a corporation is largely determined by the character of its employees who are attracted into employment and develop because of the corporation's environment.

THE PHILOSOPHY OF SUN HYDRAULICS CORPORATION

To obey the "golden rule" in all relations both within and without the company no matter how difficult this may seem at the time.

To respect the dignity of every individual and to be courteous at all times.

To honestly and fairly make and meet our commitments with customers, distributors, employees and suppliers and to establish stable relationships with them.

To be a leader in our chosen fields of activity and in the development of our industry and community.

To be a growing company so that employees are continually provided an opportunity for additional responsibilities.

To constantly improve our products and services so that they are worth more to our customers and to constantly improve our operational methods so that we can afford higher than average wages.

To provide steady and continuous employment for persons hired with reasonable working hours and safe working conditions.

To encourage employee self-improvement and to promote from within whenever possible.

To keep employees and stockholders informed of company policies, procedures and plans.

Fifteen Years Later

In 1985 Bob Koski described Sun Hydraulics' actual performance record for the casewriters:

We followed our pre-incorporation plan so closely that 10 years later we were within a percentage point—after correcting for inflation—of our most optimistic projections.

Sun Hydraulics' business results were impressive. Sales had grown by 30–35% annually, some 25% beyond the National Fluid Power Association's industry average (see **Exhibit 2**). Growth had been orderly and controlled according to the original plan. Profits were usually twice the industry average, while many products were priced up to 10% below comparable offerings from competitors. During an industrywide slump in 1982 and 1983, Sun Hydraulics had remained modestly profitable by scaling back production and reducing inventories, and had done so early enough to avoid any layoffs.

Even more important to Bob was the employment record: other than a senior designer's reluctant departure in 1985 for health reasons, the company had not lost a single key individual in 15 years of operations. Among the 10–12 people generally recognized as the most creative hydraulics engineers in the U.S., four had chosen to come to Sun Hydraulics. Although compensation was not appreciably higher at Sun than at other similar companies, the case writers found that virtually all Sun Hydraulics employees they talked with agreed that the company was an extraordinary place to work. Sun Hydraulics had also received widespread industry recognition for its innovative designs, its quality products, and its highly ethical business standards.

The Organization

By 1985, Sun Hydraulics' product line was marketed in a 200-page catalogue of precision manufactured hydraulic system components. Sun's components were standard precision products, sometimes with tolerances to the millionth of an inch. The company responded to individual orders of these products and prided themselves on fast delivery time and low inventory requirements. These components were sold to distributors who could order them on short notice from Sun's catalogue. All end product users ordered through the catalogue or from distributor knowledge of Sun's newest components. The company counted some 170 employees in Sarasota, Florida as well as six others employed in small marketing and warehousing operations in the U.K. and Switzerland.

The main facility had been built in 1980 on a beautiful site bordering a rustic lake and bird sanctuary. The plant was five times as large as the previous factory, originally built in 1970 and expanded in 1975 to accommodate the company's early development.

There were glass partitions between the plant and the open-plan office space, but both office and shop people could frequently be observed "crossing over" to the other part of the building. All employees shared a common lunchroom facility, which included outdoor picnic benches on a deck overlooking the lake and bird sanctuary.

About 20% of Sun Hydraulics' outstanding stock had been made available to a few highly competent employees whose contributions were critical in shaping the company's future in the marketplace. These stock options were offered only to key employees who were already contributing valuable input, as an incentive to stay with Sun Hydraulics. They were never used as an incentive for individuals considering joining the company. In addition the company made annual contributions to employee's 401K retirement plans.

Beyond this, there were no perquisites or special benefits for anyone in the company. There were no formal job descriptions, no organization charts, and no prescribed reporting relationships. Nor were there official titles aside from two that seemed indispensable for interactions with the "outside world" (Bob Koski was president and Bill Clendenin was controller). No correspondence and no business cards included titles. In the words of one executive:

> There are hardly any heroes in our organization. When something good happens, we try to suppress the hype. When something bad happens, we try to suppress the "down."

The Office

About 25 "office people" made up the administration, product design, marketing, and computer programming functions at Sun Hydraulics. The group Bob Koski called the "management team" tended to be closely involved in each others' activities and to "get things done collectively." The idea of collective responsibilities had led to an organizational concept Bob Koski called "shared offices." A "shared office" included several people commonly identified with the activities that might normally be assigned to a single person as department head in a more typical organization. **Exhibit 3** shows Bob's graphic representation of the "shared office" arrangement at Sun Hydraulics. The drawing was his first attempt ever to prepare anything resembling an organization chart for the company in response to a request from the casewriters.

Hiring and responsibilities Most office people were hired after long discussions about Sun Hydraulics' unusual philosophy and practices, and about the areas in which the prospective new hire might be able to "fill a vacuum" in the company's activities. There was invariably greater emphasis on the qualities of the person and his or her fit with the organization than on the "vacuum" or the job to be done.

For example, a vacuum might go unfilled for months until the "right" person was found. On the other hand, a good person might be hired long before there was a vacuum evident in the company. Even when people were brought in with specific "vacuums" in mind, their own choices about job activities might take them into entirely different areas. One engineer, who had been hired with a product development function in mind, had "become intrigued with the computer" in his first days on the job, and had since concentrated entirely on creating new programming applications.

A talented product-design engineer hired from outside the company had not yet moved to Sarasota some 9 months after joining Sun Hydraulics. According to several of his new colleagues in Sarasota, this man had decided to spend time "wandering around" learning more about the market

and its needs. They were certain that one way or another his wanderings would be of benefit to the company. No one had fixed ideas about when or even if he would join them in the Sarasota office if his wanderings proved fruitful.

Each individual was expected to choose the range of activities in which he or she could best contribute to the organization. Frequently, these choices led to a natural expansion and sharing of an individual's responsibilities. For example, one person whose activities initially consisted largely of administrative and clerical work found that both plant and office people tended to approach her with questions and problems about working relationships and other "personnel" issues. After a few years with Sun Hydraulics she was recognized as the person most responsible for "human resources" and related matters in the company.

Office Layout The controller, Bill Clendenin, and his assistant had the only enclosed offices in the building. The others, including Bob Koski, used workplaces separated from each other only by waist-high sectional dividers. A small glass-walled library and a larger conference room were available for impromptu meetings by plant and office employees alike.

Some people found it difficult to adjust to working in the open office plan. One engineer temporarily decided to change his working hours in order to have "quiet time" in the evenings to finish preparing the new catalogue. Another set up a provisional work space in a storage area to which he retreated occasionally to work on special projects.

Interactions For the most part, however, the office design was successful. Bob Koski thought the arrangement was helpful for communications in the absence of scheduled meetings:

> There are no formal meetings at Sun Hydraulics. Meetings are generally impromptu and people vote themselves in or out based on their interests. Typically two people will begin a discussion and discover they need some information. They'll go together as a pair to see another person. That frequently draws a small crowd until people see whether they're interested or not, and the problem almost always gets taken care of on the spot.

The same flexibility was apparent in interactions with people from outside the company. Bob Koski believed the absence of titles, while confusing to outsiders, contributed to getting things done at Sun Hydraulics:

> If a salesman were to walk in the door, the first thing he'd say is, "I want to talk to the VP of so and so." We ask what he wants to talk about and then send him to the right person. If he asks what that person's title is we tell him there aren't any titles. They're usually looking for someone who can make a decision. Since I always refuse to make decisions, they give up on me. I think I could sabotage Sun's system simply by making decisions. I just don't.

The Plant

Like the office area, the shop was clean, airy, and generously adorned with green plants. Work benches and heavy equipment were arrayed in an extended horseshoe around the main door, according to the production sequence. Production floor space had increased fivefold with the move to the new facility in 1980. A number of "old-timers" remarked that the increased size and the addition of 50 new shop workers since the move had somewhat limited opportunities for close, friendly relationships that they remembered from the previous facility. Others thought the new plant had simply enlarged and enhanced the area in which the friendships with fellow employees could develop.

One recurring comment was that with 170 people now working at Sun Hydraulics, "It takes a lot longer to get to know everybody's name." Another common remark was that the enlarged space "makes it much harder to sing rounds with the people in the next department."

"Family groups" and lead persons. There were 12 departments or family groups in the plant, from the lathe group, to drilling, tool making, machining, deburring, stamping, and packing. A test bench served as work table for trying out new product ideas in conjunction with the design and development process so that production workers could provide input and gain familiarity with new products before they entered the production phase.

The family groups worked closely together with little formal division of individual roles as each member learned more and more jobs within and even across departments. One benefit of the "family" relationships that developed over time was a natural tendency to find better ways of working. Several departments had developed new methods that increased their productivity by 400% over a period of 4–6 years, without resorting to any new or unusual equipment.

Each group included at least one informally-designated "lead person." The lead people (also called "supervisors" although the use of such "standard" terms was not encouraged) were generally people with longer tenure, the most experience, and the broadest skills in the department.

Lead people tended to emerge from within the groups. They often took the initiative in training new people to do the various tasks in the group. Beyond that, their role usually included other activities such as introducing new employees to the group, taking responsibility when the group needed to resolve a problem jointly with another group, and coordinating the department's overtime schedule.

Plant supervision. There was a single official supervisory level in the plant. Two managers and their assistants were available to oversee daily production and materials. Their only formal supervisory task was to conduct individual wage and performance reviews semiannually with each of the workers in their departments. In addition, they worked closely with managerial and clerical people in a "shared office" for other decisions regarding the production function.

The key figure in this "shared office" group was Bob Devereaux, who had come to Sun Hydraulics in 1979 after managing a series of plant turnarounds for a much larger company. He shared a small glass-walled office adjacent to the plant with Bob Voorhees, a 14-year veteran whose responsibilities Bob Koski described as "a sort of roving superintendent." Directly across from their work space was another glass-walled enclosure in which two schedulers monitored and coordinated shop activities with a battery of eight computer terminals. Together the members of this "shared office" group accomplished many of the tasks that would have been called "production and operations management" in a more typical hydraulic components plant.

In fact, while all of the members of this "shared office" acknowledged the tremendous difference between Sun Hydraulics and other, more hierarchical organizations, some had difficulty describing their collective work activities without using the "standard" terms and titles familiar to the other companies. According to Bob Voorhees:

> I joined Sun Hydraulics about a year after it was founded. In those days I had a hard time getting Bob Koski to let us use words like "foreman," "supervisor," and "manager." We know our ways of getting things done are different from other places, but we still have to use their words because people have to know where to go for help. They need to know who's running the shop. Otherwise it just gets too confusing, especially for the ones who come here from other companies.

Even though people sometimes used "standard" terms to talk about their work at Sun Hydraulics, Bob Koski maintained that the working relationships they described were more "horizontal" than "vertical" in nature. Bob Devereaux clarified the conscious mechanisms by which Sun Hydraulics' people enacted this horizontal environment:

> One of the things we've been doing—and we've tried to build it in to every part of the organization—is to keep pushing decisions and responsibilities down so they're at the lowest possible level. We've consciously avoided creating any elite groups or formalizing any structure. We knew that once we built it in we wouldn't be able to get it out.

For example, when a complicated new generation of CNC flexible machining centers was brought into the plant, the operators themselves were sent to the vendor's factory to be trained in the computer programming functions. This unique approach (no other company had ever asked the vendor to train relatively unsophisticated shop workers to program these highly advanced machines) avoided the usual practice of forming a group of specialized programmers and instructors. At the same time it ensured that the skills needed to run and maintain the machines remained "right down at the operator level." The machine tool vendors noted that they had never seen a better acceptance rate and a faster start-up time in any other installation of the machines.

Production scheduling Another area of shared responsibilities took place in the scheduling of each group's daily activities in the plant. Groups received regular updates on the products that were needed, from computer terminals placed arount the plant. Groups were expected to plan their own activities to accomplish as many of the tasks on their lists as possible.

This self-scheduling procedure was in the process of being fully automated in 1985. The new software programs developed in-house, would provide "live" data (based on known immediate and computer projected orders rather than on staff-generated sales forecasts) about components parts to be produced, delivery dates, and order priorities for anyone in the plant who wanted the information.

Sun had tried to find commercially available software, but none was available, so the company developed its own. Within this framework of "universal information", shop workers were encouraged to make their own decisions about what to produce and when. As more terminals appeared on the production floor, and as employees got used to operating them, the system would help reduce inventories while affording greater flexibility in responding to customers' orders.

Overtime and cross-training Shop workers worked a four-day, ten-hour day, and could choose to come in for available overtime on Fridays and Saturdays at their own discretion. They could also choose to do overtime in areas other than their own, and departments frequently "helped each other" in this way when the personnel were cross-trained.

Cross-training occurred naturally when people showed an interest in switching departments or in "helping out" in busy areas. The same mechanisms operated even more strongly within the "family groups" so that many employees were capable of doing most or all of the jobs within their department groups.

Current Concerns

Bob Koski completed Units I, II & III of the Owner President Management Program at the Harvard Business School in ten months.[2] There he expressed concern over several aspects of Sun Hydraulics' situation, even though he was very pleased with company's progress. The company was now considered a technical leader in its field, but Bob had certain doubts. Others expressed greater reservations.

First of all, Bob wondered whether the size of a company or the age of a company was the cause of "ossification". Were Sun's organizational practices an exportable method of management, or were they simply a reflection of one person's — his own — management style. What were the critical elements contributing to Sun's success so far? Could similar culture patterns be developed at a new manufacturing plant that was to be established in Coventry, England? Should they risk attempting to transplant human behavior as well as business-technology patterns in Europe? Most informed business consultants thought this would be a disaster!

Controller Bill Clendenin expressed even graver long term concerns:

> Bob is the visionary. He's the one who doesn't let himself get detoured from the long term goals. We do the detail work, but he's the visionary. He and I differ in that he doesn't think he's that important. Unless we find a way to make him personally not too important, we may end up looking much more like a conventional company as time goes on.

Bob Koski felt that if Sun's human resources were dependent on a management "style" sustained only by his personal input, he should collapse the dream sooner rather than later in order to avoid more painful unplanned transitions in the future. On the other hand, if Sun's approach had wider applicability, he wondered what actions and steps to take next. Specifically, could Sun's horizontal management be even further extended in its hiring and firing, training, performance and salary reviews, lead person roles, shared offices, discipline issues, and communications in general? He concluded that there was much to be done, but wondered where to start.

[2] Each OPM unit was three weeks long. Most participants spread the three units over a three year period, but Koski's prolonged absence from Sarasota was not unusual for him. He typically spent over half of his time away from the plant exploring technological and managerial ideas elsewhere.

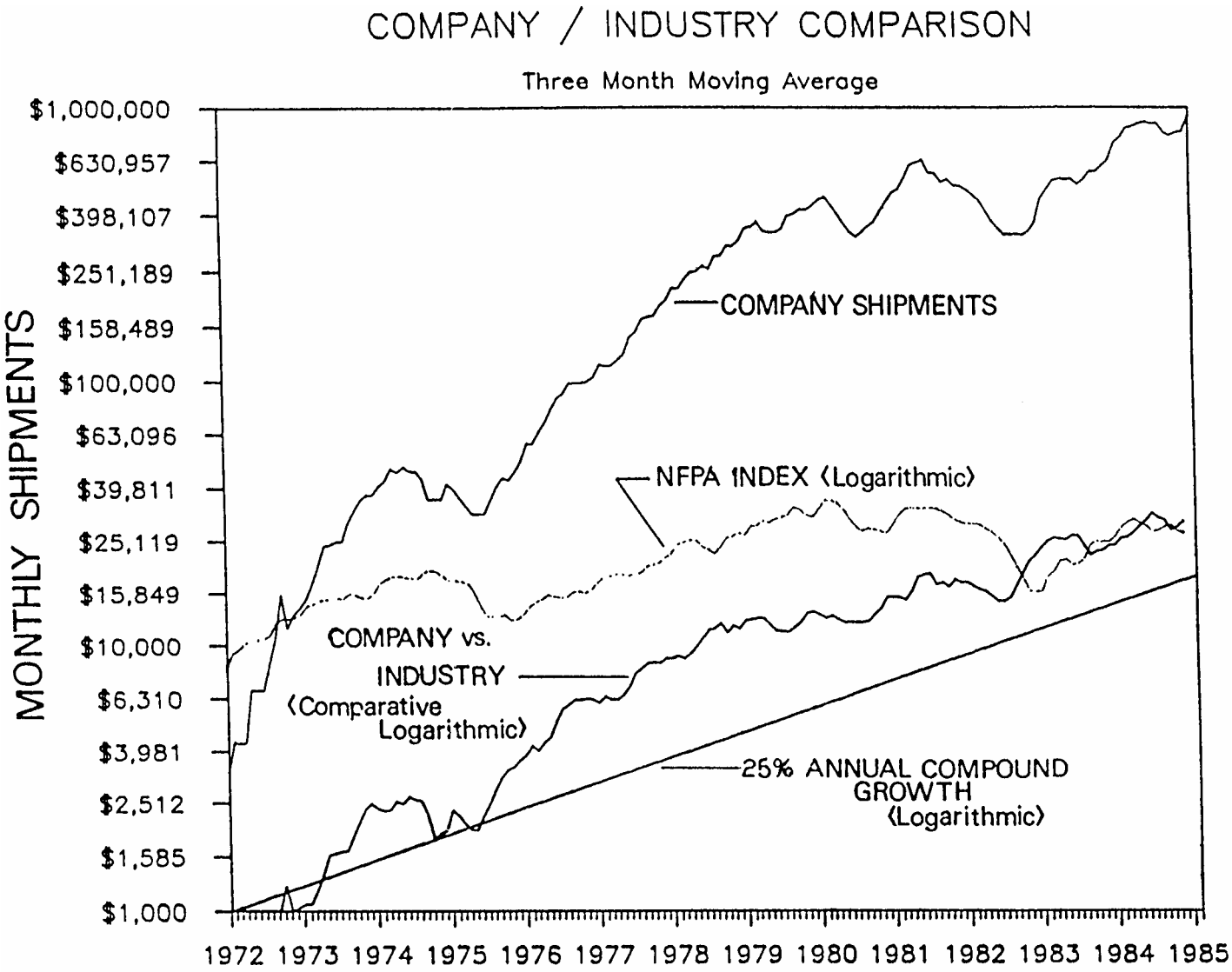
Exhibit 1 Growth Projections

	Pessimistic Sales			Realistic Sales			Optimistic Sales		
Year	Sales	Employees	Floor Space	Sales	Employees	Floor Space	Sales	Employees	Floor Space
	$	No.	Sq. Ft.	$	No.	Sq. Ft.	$	No.	Sq. Ft.
1970	10,000	5	3,000	25,000	5	3,000	35,000	6	3,000
1971	75,000	6	3,000	125,000	9	3,000	140,000	8	3,000
1972	185,000	11	5,000	250,000	15	5,000	270,000	16	5,000
1973	300,000	18	5,000	370,000	19	5,000	390,000	22	5,000
1974	425,000	22	5,000	520,000	26	5,000	570,000	29	10,000
1975	575,000	30	10,000	690,000	34	10,000	800,000	41	10,000
1976	750,000	38	10,000	900,000	46	10,000	1,125,000	56	15,000
1977	950,000	49	10,000	1,175,000	59	15,000	1,500,000	73	15,000
1978	1,150,000	59	15,000	1,500,000	75	15,000	2,000,000	95	25,000
1979	1,450,000	75	15,000	1,900,000	95	25,000	2,600,000	120	25,000
1980	1,800,000	95	25,000	2,350,000	115	25,000	3,400,000	165	40,000
1981	2,150,000	110	25,000	3,000,000	150	40,000	4,300,000	200	40,000

Note: Considerable data exist to support the proportions of sales, employees and space.

Source: "Sun Hydraulics Corporation: Plans and Objectives," internal document prepared by Bob Koski in 1969.

Exhibit 2 Sun Hydraulics vs. Industry Average: Monthly Sales 1972–1985



Company = Sun Hydraulics Corporation
NFPA = National Fluid Power Association

Source: Company records

Exhibit 3 "Shared Office" Organization at Sun Hydraulics