Newsmagazine for Memorex Employees
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# INTERCOM

# CBS-Memorex Form Joint Venture Company

**Jerry Youngstrom (from left), Cal Strobele and Dave Bargen gather around some test equipment at CMX Systems. In the lower picture are Tony Eppstein (left) and King Anderson. Jerry and the four men who report to him are in Product Development.**

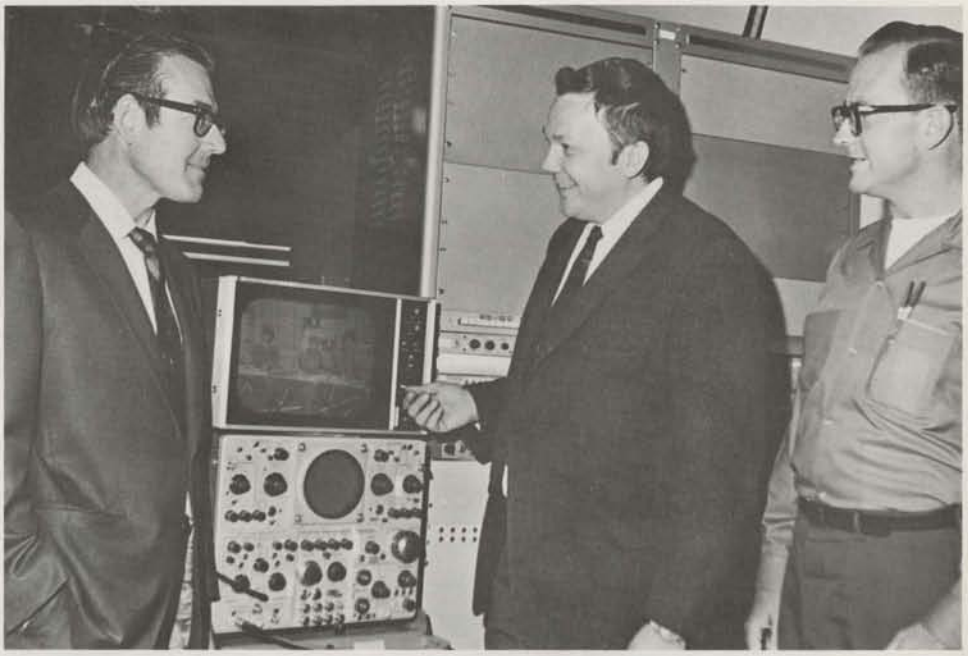
The joint venture announced last month by Memorex and CBS has been named CMX Systems, reports Bill Butler, the new organization's general manager.

Bill has been with Memorex since 1966, most recently as administrative assistant to John Del Favero, executive vice president of the Information Media Group. He will continue to report to Mr. Del Favero in this new position.

A news release issued late in May by Memorex and CBS indicated the new company will be working in the field of specialized television equipment. The company, which is headquartered in Sunnyvale, developed out of technical discussions that began between Memorex and CBS more than a year ago.

Key personnel on the project include Technical Director Ken Taylor, Director of Administration Bill Ruehle, Product Development Manager Jerry Youngstrom, Advanced Development Manager Martin Fletcher, and Systems Manager Dave Bargen.

Ken was director of Electro-Mechanical Research and Development on the Information Media Group Technical Staff. Jerry and Martin continue to report to Ken, as they did in IMG. Bill Ruehle, who joins the new organization from CBS, reports to Bill Butler. Dave Bargen comes to CMX Systems from Xerox Corporation, where he was systems engineering manager for the Medical Diagnostics Operation, and will report to Jerry Youngstrom.



**INTERCOM**

An official publication for employees of Memorex Corporation, 1180 Shulman Ave., Santa Clara, Calif. 95050

Editor: Gary Williams

**ABOUT THE COVER**

**Dale Humphriss (left) and Dr. Gordon MacBeth are shown with a videotape recorder playing a reel of Memorex's new chromium dioxide tape. The television show in the background was taped off the air with an iron oxide coated tape, and then duplicated on chromium dioxide. The story is on page 4.**

# Training Center Moves To Specially Designed, Larger Building

**Finishing touches are still being applied to the Training Center, and its classrooms are already busy. This is a class of Equipment Group field managers and field service representatives. The instructor, who's not shown, is Ron Jordan, from MEG Technical Education and Training.**

The Memorex Training Center has moved into a building that has been specially designed to take advantage of the latest in educational aids.

The center is on Shulman Ave., directly across the street from the main cafeteria, in the same building which housed Information Media Group Purchasing. Purchasing is moving into the building on the corner of Shulman and Ronald St., where training used to be.

The Training Center is completely carpeted, and the rooms are well insulated and air conditioned. These features help to make the building a cool and quiet place for learning. There are 10 classrooms; each equipped with variable intensity lighting and a remote control slide projector. One room, designed for customer training, has a projection booth and tiered seating for 31.

Two of the rooms are separated by a moveable wall, which can be opened to provide seating for 97. Four of the classrooms are designed so that role-playing simulations can be video-taped and replayed in class.

The Center also has a sound and video recording studio, which the Audio-Visual Department will be using to support the corporation's training activities. Audio-Visual support includes art work, photography, video recording and audio recording.

In one area of the building, Equipment Group Technical Education and Training has a lab filled with equipment products. The lab is used to train the men who will service those products.

Offices in the building will be occupied by training personnel from Information Media Group, Equipment Group and the Corporate Staff.

# Company Wins Merit Award

Memorex and Container Corporation of America have won a Merit Award for our MT/ST cartridge carton at the 27th Folding Carton Competition, sponsored by the Paperboard Packaging Council.

According to the Council, there are 18 categories and each entry is judged on how well the package accommodates the product from the production line, through the channels of distribution and into the hands of the ultimate consumer.

Specific areas taken into account during the judging include packaging innovation, consumer convenience, communication excellence, market excellence, distribution excellence and production excellence.

**John Del Favero, IMG executive vice president, holds an award presented to Memorex for our MT/ST carton, and talks with David Whitehouse, a Container Corporation vice president.**

# Future Looks Bright For Chromium Dioxide

Last month Memorex announced a breakthrough in the recording industry—a way to make mass duplications of video tapes. We also announced that the process relies on a video tape coating which contains chromium dioxide rather than iron oxide, the material used in our present tapes.

The news release actually drew together two different, but related, research projects. The first part of the story began back in February of 1969, when Memorex purchased a licensing agreement from DuPont, allowing us to work with chromium dioxide. We could not otherwise use chromium dioxide because of DuPont's patents on the material.

"We felt that chromium dioxide had the kind of performance potential that would make it a significant factor in magnetic recording," says Dr. Gordon MacBeth, vice president and senior scientist in the Information Media Group. It is superior to iron oxide for a number of reasons. For example, chromium dioxide retains a greater magnetic force than conventional oxides, known in the industry as residual magnetic flux density or retentivity. Also, the microscopic particles which hold the magnetic charge have a uniform needle shape, called acicularity, which can be more efficiently aligned and packed with uniform density. As the result of these inherent magnetic characteristics of chromium dioxide particles, chromium dioxide tapes offer high output and signal-to-noise levels, and extremely good high frequency response.

A third unique property, the one which made possible the development of our duplication process, is the low Curie temperature of chromium dioxide particles. This is the temperature at which particles become non-magnetic.

The project manager for chromium dioxide is Dale Humphriss, who joined the company from Eastman Kodak in February of this year. Al Lohoff is the senior development engineer on the project. It was Al's job to formulate a coating, a dispersion process ,the binder system and surface treating methods. Al believes that chromium dioxide has "probably been the least troublesome of any material we've worked with, from a coating viewpoint."

"Our current objectives," Dale explains, "are to characterize and compare our tape with competitive materials, evaluate its total system performance, and eliminate any problems which occur in the field trial sampling process. Typical problems often relate to the tape's use under unusual environmental conditions, or with recorders of unusual design. Headwear must also be determined and minimized for all of the various head materials and head designs in use today. To eliminate these problem areas, we have to investigate both our product and the conditions under which it is used.

"Our chromium dioxide helical scan (closed-circuit video) tape is being evaluated by selected customers right now, and we fully expect to market it very soon." When final evaluations are in and the tape is released for sale it will only have one other competitor, and that's DuPont's Crolyn. The DuPont tape has been available for several years, but recording equipment capable of taking full advantage of chromium dioxide's properties has only recently begun to be available.

Now, a number of companies have announced plans for equipment which can use the new magnetic material to advantage, and a company in Holland, Philips, has already built a helical scan machine which uses chromium dioxide. Philips is one of the four companies, including Memorex, DuPont has licensed to work with chromium dioxide. The others are Sony and Ampex.

Another company building a recorder for chromium dioxide tape is Nivico in Japan. There's also a company in Mountain View (Video Logic Corp.) that builds a portable TV system which uses chromium dioxide tape. Called INSTAR ,the system offers up

**Bernie Donahue (left) and Al Lohoff check some chromium dioxide tape on the pilot line which is used for coating tapes in IMG Research and Development.**

**Don Bench reaches in to make an adjustment on a machine which has stirred up considerable interest in the industry—our video tape duplicator. With him is Bill Hendershot, manager of Project Victor.**

**The lower photo shows Bob Wahrer, supervisor of the Product Test lab, and Al Lohoff.**

to an hour of slow motion, stop action recording with broadcast quality pictures. INSTAR is being sold mainly as an aid in athletics, where an event can be video taped and shown back immediately, on the field of play.

Dr. MacBeth notes that there are additional "indications of considerable equipment development activities in Japan and elsewhere, and we are trying to encourage machine manufacturers to prepare for this developing market."

He doesn't limit chromium dioxide's use to helical scan recorders, either. "In the long term it will probably find applications in broadcast video (Ampex has a machine which reportedly is capable of driving chromium dioxide tapes), digital applications, instrumentation tapes, and cassettes." He believes chromium dioxide will eventually be widely used in areas which complement, but don't entirely replace, iron oxide tapes. "For some time to come there will be room for iron oxide and chromium dioixde."

The second part of this story concerns the mass duplication process and its relationship to the development of chromium dioxide. Project Victor, the code name used for this Research and Development effort, began more than a year ago under the direction of Eric Daniel, to look for a rapid way to make duplicates of video tapes. Presently, the only readily available way to make a duplicate video tape is by playing a tape and re-recording it on another machine. A one hour show takes an hour to copy, so any improvement would be a boon to video tape users. This explains why last month's news release received "a tremendous response from all sorts of users and manufacturers of video recorders." According to project manager, Bill Hendershot, "We have received more requests for demonstrations than we have time for." Bill joined Memorex in February, and Don Bench, an associate engineer, has been working on Project Victor for nearly a year. One of the project's previous managers was Jerry Youngstrom, now at CMX Systems. As mentioned earlier, our machine uses a thermal (or heat) process to make color video tape duplicates.

To make a duplicate, an iron oxide tape is used as the original. The program on it is transferred to a chomium dioxide tape. The

(Continued on next page)

# Chromium Dioxide Projects

(Continued from page 5)

two tapes are put on the Memorex machine and threaded through it so that they touch each other as they pass over the head. On a video or audio tape machine this would be the recording head, but our process is different. The duplicating head is made of two copper blocks. One block is heated and the other is cooled. To further understand the process it's important to know that recording is done by aligning the magnetic domains in a tape's coating.

You must also remember that the Curie temperature is the temperature at which a magnetic particle loses its magnetic properties. Iron oxide has a much higher Curie temperature than chromium dioxide, higher even than its polyester backing, and this is the important difference which makes the duplication process work. If an iron oxide tape is heated to its Curie temperature, the polyester backing would be destroyed.

As the two tapes pass over the heated part of the head ,the chromium dioxide tape reaches its Curie temperature and loses its magnetic properties. The iron oxide tape is unaffected, and thus retains its magnetic properties. When the two tapes, still touching each other, pass over the cold side of the head, the chromium dioxide particles once again become magnetic ,and as they do they take on the same magnetic alignment of the magnetic domains in the iron oxide tape. This heating and cooling process can be done so rapidly that duplicates can be made 10 to 15 times faster than by other existing machines. Other companies have recently proposed fast duplication systems, but none are on the market and none offer the advantages of ours. For instance, the other proposed systems can only record the video portion of the tape and not the audio. The Memorex machine copies the video and audio tracks, as well as the control track. Ours is also the only duplicating method which uses the special properties of chromium dioxide. This is important to note because Project Victor only began out of Memorex's desire to create a greater market for chromium dioxide.

# Build an Emergency Fund With U.S. Savings Bonds


U. S. Savings Bonds are safe because they are backed by the U. S. Government. They are the painless way to put aside some extra savings because you can buy them with monthly deductions through the Payroll Savings Plan. A small amount deducted from every paycheck builds into a nice fund for emergencies, or those extras we all like to buy from time to time. A $25 Bond costs only $18.75.

And now, U. S. Savings Bonds pay 5% interest when held to maturity of five years, 10 months (4% the first year; 5.20% thereafter to maturity). That's the highest rate ever paid by one of the world's safest, most painless ways to save.

Still another advantage of Savings Bonds is that their interest is exempt from state or local income tax. Federal tax on E Bond interest may be declared annually or deferred—with advantages either way if you are saving for a child's education, or your own retirement.

Why not start your own special savings program by signing up for the Payroll Savings Plan? Later this month you will receive some additional information about Savings Bonds in the mail at your home. A sign-up card will be included and all you have to do is fill it out, and return it to your Personnel Office. From then on your special savings account will begin growing month by month.

# On the Move

**Hiroshi "Rusty" Nagakura** has been promoted to general manager of Storage Products Corporation, announces **Al Shugart,** MEG vice president of Engineering.

Rusty is now responsible for all engineering activities associated with disc file and storage control programs. He was formerly director of Storage Products.

**Dr. Marco Padalino** has been promoted from manager of Storage Products Electrical Engineering to director of Engineering, Disc File Programs. Marco, who reports to Rusty Nagakura, obtained his Ph.D. from Politechnic Institute, Milano, Italy.

Also reporting to Rusty is **Walt Hillblom,** who has just been promoted to director of Engineering, Storage Control Programs. Walt was formerly manager of Storage Control.

**Larry Wilson, MEG** vice president of Manufacturing, has named two new directors in his area. **Robert Smith** has been promoted from manager of Production Control to director of Manufacturing Planning and Facilities. Reporting to Bob will be **Wayne Lettiere,** manager of Industrial Engineering and Planning, and **Russ Larson,** manager of Cost Estimating.

The second new director in Manufacturing is **Frank Palacios,** director of Manufacturing Services, who comes to Memorex with more than 13 years of experience in the electronics industry. Reporting to Frank will be **Bruce Steeves,** manager of Test Engineering, **Ray Bell,** manager of Manufacturing Engineering, **Joe Rozum,** director of Quality Control, and **Bob Bell,** manager of Process Development.

**Gordon Pilcher,** vice president of Corporate Finance, announces that **Dick Kirk** has been promoted to director of Corporate Planning and Analysis.

"In this new position, Dick will continue to be responsible for corporate planning and measurement, together with the direction of analyses of major corporate investments, new ventures and potential acquisitions," says Mr. Pilcher.

**Nagakura**

**Padalino**

**Hillblom**

**Smith**

**Palacios**

**Kirk**

# News Briefs

International Group Vice President **John Kramer,** reports that a computer equipment sales and service organization has been formed to market directly to end-users throughout Canada. The organization will be a division of Memorex Canada Ltd., which has been marketing other Memorex products in Canada since 1968.

Mr. Kramer also announces that **Barry Sears** will be sales manager of equipment products, and will head the Canadian equipment operation.

Barry, a native of Kingston, Ontario, has already started building sales and technical service staffs in the Toronto headquarters, and establishing district sales/service offices in Montreal and Ottawa. Future plans call for expansion of district offices in Western Canada.

**Charles Robertson,** senior internal auditor on the Corporate Staff, is finishing up a year's term as president of the Institute of Internal Auditors, San Jose Chapter.

Chuck will continue to serve on the chapter's Board of Governors for the next two years. He will also be a member of the International Public Relations Committee. The San Jose Chapter has about 70 members from the Santa Clara Valley.

**Gary Williams,** a communications specialist in Corporate Personnel Administration, has been elected treasurer of the San Jose Public Relations Roundtable. The Roundtable is an organization of Public Relations professionals in the San Jose-Santa Clara area.

# "Pass Along My Thanks," Says MEG Sales Rep.

When the new salesmen in town start looking to your customers for business, what do you do? You certainly can't help them unless, of course, they're from your own company and selling different products.

The latter case is a situation that's being repeated across the country as Equipment Group Marketing continues to add new men and sales offices to its relatively new organization. Since our company has been selling tape for nearly nine years, the old-timers in town are fellow Memorex salesmen from Information Media Group Marketing.

These two sales forces are not in competition; one group is selling and leasing computer peripheral equipment, while the other supplies media products. Many times they share the same customers, and in many cities they share the same sales offices.

How well they share is the subject of the following letters.

#1

Mr. Bill Taylor
District Manager
MRX Sales & Service
Los Angeles, California

Dear Bill:

We certainly enjoyed having you in the Dallas Branch on the 24th, 25th, and 26th of March. Many thanks for your help at Commercial Computer Services in Fort Worth. Your visit helped create a much closer relationship with Clark Martin and Don Dunaway.

Bill, the purpose of this letter is to insure that you are aware of the outstanding support the Dallas supplies division has been giving us. The order for the 3-3630's at Logic Data Services that you and I picked up came from a lead furnished by Don Andrews, Supplies Representative in Fort Worth. Don has been very helpful in supplying me with other account information as well.

The City of Dallas is a hot 1600 prospect at this time. This lead was furnished by Roy Geiser, Dallas Supplies Manager, who has built an excellent reputation for Memorex in the City of Dallas.

Jon Forrest and "Bucky" Buckley have also been most helpful in supplying us with prospect information.

In addition, the secretaries have been very willing to assume the additional workload (i.e.-proposals, correspondence, telephone calls) and the supply salesmen have been very gracious about sharing their desks and telephones with Joel and I.

I believe their attitude typifies why Memorex has been so successful to date. It makes our job much easier because of the outstanding reputation they have established.

Please pass along my sincere thanks to the people in Santa Clara.

Sincerely,
Jim Welch
Sales Representative
Equipment Group Marketing
Dallas, Texas

#2

Mr. James McNabb
Vice President, Marketing
Information Media Group

Dear Jim:

The attached letter is typical of the reactions I have been receiving from Equipment Group sales personnel concerning the courtesy and cooperation being given to them by your people.

Add my thanks to Jim Welch's.

Sincerely,
W. F. Emmons, Jr.
Director, Field Sales
Equipment Group

#3

Mr. Jim Welch
Sales Representative
Equipment Group Marketing
Dallas, Texas

Dear Jim:

Your nice compliment to Bill Taylor, regarding the supplies salesmen's cooperation, was shown to me. I'm most appreciative that you took time to express your thoughts. This will help to forge a strong, coordinated "marketing presence" in which rivalry and begrudging joint efforts are eradicated and true cooperativeness flourishes. Where it does, everybody benefits.

Thanks for helping by your thoughtfulness.

Sincerely,
Larry Spitters
President

# Comdata to be Part Of Irvine, Continent's Largest Planned City

When Memorex decided to buy a piece of land in the Irvine Industrial Park about a year ago, not too many people had even heard of the place. Even our employees at Comdata, only an hour north of there, in Los Angeles, weren't sure where Irvine was located.

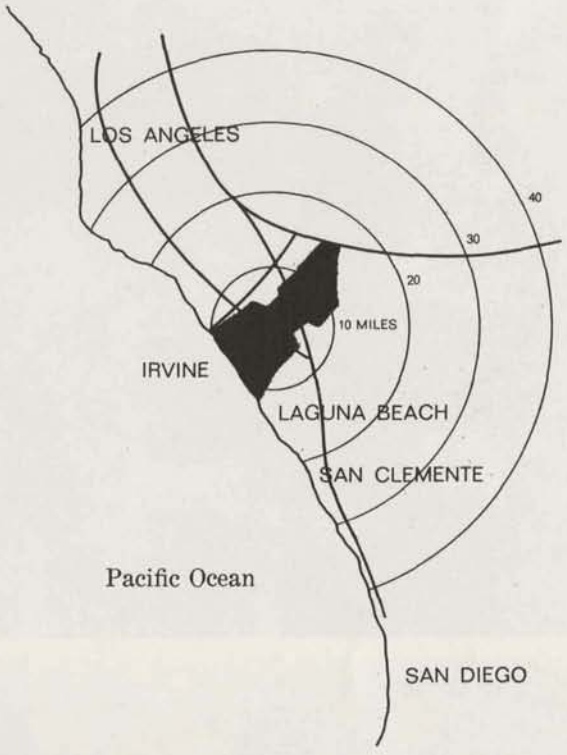
But that's all changing. Comdata has moved to its new plant and the people have been working there for a couple of months now. In addition, recognition has come to the area quickly since the Irvine Company, owners of 83,000 acres of prime Orange County land, announced plans to develop the largest totally planned city on the North American continent—and the Irvine Industrial Park will be part of it.

Irvine Company officials call it the City of Irvine, and they have already spent more than $1 million on a master plan which covers more than half the land they own.

Irvine Company President, William Mason says, "It will be a model city, reflecting unparalleled control over the quality of environment through the implementation of unique planning concepts. These include a 33-mile network of environmental corridors, where most major non-residential facilities—from parks to business centers—will be located."

Comdata is in one of those "environmental corridors," within sight of Orange County Airport and the Airport Business Center, which will feature the Airporter Inn, hotel, restaurant complex and convention center. The Irvine Industrial Complex is said to be the fastest growing industrial complex in the nation, increasing at the rate of 200 acres a year. Its 3,100 acres presently hold 280 firms, employing 14,000 people. Its continued growth is important because it assures a stable economic base for Irvine's future development.

As envisioned by Irvine Company planners, the new city will eventually include the University of California at Irvine campus complex and several rapidly growing residential communities south of the San Diego Freeway. It will be as wide as the 105-year-old Irvine Ranch: about seven miles from Newport Beach, Costa Mesa, Santa Ana, and Tustin on the west to Laguna Beach and Leisure World on the east. In area, the city will be about twice the size of San Francisco and three times the size of Manhatten Island.




The ultimate population will be limited to less than half of San Francisco's and less than one-third of Manhattan's.

Some of the other features of the planned city include:

—A 420-acre regional shopping and commercial center.
—A 1,666-acre industrial park site east of El Toro.
—The 500-acre Lion Country Safari tourist attraction southeast of the Laguna-San Diego freeway interchange, which should be open for the first time this month.
—A 70-acre City of Irvine civic and cultural complex.
—A 200-acre recreation-oriented center.
—Two suggested 100-acre community college sites.
—Hundreds of additional acres for parks and open spaces.

The Irvine Company plans to develop the city in stages, and by the year 2000 it is expected to reach a maximum population of about 430,000 people. It will be a city of villages, each with its own park and shopping center, and each linked to the others by the environmental corridors.

In the introduction to the documents submitted to the Orange County Planning Department, the Irvine Company said:

"The City of Irvine, from roads to sewer lines to park sites to school sites to residential, commercial and industrial areas, is totally master planned. It is a master plan that anticipates needs that are as much as 30 years away. It does not solve all the problems that will face the new city, but it will greatly diminish them.

"The master plan accommodates the future. It anticipates traffic volumes, utility requirements, tax base requirements, and educational requirements. By doing definitive work now on the development of a comprehensive water and sewer system to serve more than 400,000 people by the turn of the century, we are preventing the utility service crises that continually face so many unplanned cities, crises that involve vast and unanticipated expenditures. That is but one example of the value of knowing where we are going and how we will get there."

# Six Earn Patent Disclosure Awards

Six Information Media Group employees received awards totaling $1,000 for patent disclosures made during the past few months. Technical Staff Vice President Stan Meyer made the presentations.

Ross Clark, formerly a research chemist and now a mechanical engineer, received three awards for work done on the invention of a vesicular film, a method of making vesicular film, and the development of a flexible film print material.

Elizabeth Herzfeld, one of Memorex's first employees, was awarded for her work on the vesicular film. She is a senior chemist, and has been with the company longer than all but five present employees.

Gary Bunas shared the patent disclosure for the method of making vesicular film, and Alberto Oxonian shared the disclosure for developing a flexible film print material.

Two others receiving awards were Ram Nagpal and Bob DeVore, from Industrial Engineering. Ram and Bob were awarded for their video case and reel container designs.

Patent disclosures are applications for patents, and each disclosure made by a Memorex employee earns a $100 award.

**Receiving their patent disclosure awards from Stan Meyer (right) in the top picture are (from left Gary Bunas, Ram Nagpal and Bob DeVore. To the left are Elizabeth Herzfeld, Alberto Oxonian, Ross Clark and Stan Meyer.**

# MAG Sports Day Held in Santa Clara

**MAG's Sports Day on June 6 was just for the adults, and everyone seemed to have fun even though the turnout was not large. There were a number of events besides the sack race, walking race and football kick shown here. The photos were taken by Bob Mendonca.**


INPUT/OUTPUT is an anonymous channel for employee questions, comments, complaints, or suggestions. INPUT/OUTPUT forms and locked boxes in which to put them are located throughout Memorex. Forms are collected by the program administrator, who is the only person ever to see the names of employees who submit INPUT/OUTPUTs. Answers are mailed to employees' homes, and questions of general interest are selected for publication, unless the author requests otherwise.

**Why doesn't Memorex offer dental coverage to employees?**

We appreciate that some employees have a strong and understandable interest in dental insurance as a possible Company benefit. Dental expenses indeed can be a sizeable burden for any family's budget.

To fairly evaluate a possible dental plan, we must weigh not only costs, but also the practical benefits to be derived for the majority of our employees. In viewing costs, one measure is our current 100% company-paid medical insurance plan. This insurance in 1970 will cost in excess of $1 million. To add to our benefit package a meaningful dental plan would probably cost initially about $300,000 annually, with the expectation of significantly higher costs in later years. This is a considerable amount, especially when added to the medical insurance and other benefit costs. The new Savings and Investment Plan alone will add new costs this year in excess of $600,000.

We are evaluating possible alternatives. One we reviewed in April was for a new combined medical and dental plan to which employees would contribute some amount of the cost. There are other possible approaches which we are considering, all with the sole objective of finding insurance coverage which is practical and cost effective in meeting the needs of our employees.

We are intensifying our study of these medical and dental plans. If we find a program better than our current one for providing good coverage for our employees, we shall revise our benefit package accordingly. In the meantime, we fully intend to continue as a clear leader, both in our industry and in the Bay Area, in providing you and other employees with an outstanding and meaningful package of benefits to supplement your regular income.

**Would we consider establishing group automobile insurance at Memorex, with premiums paid by payroll deductions?**

Group automobile insurance is a topic of interest to many due to the increasing rates prevalent in our area. Preliminary inquiries on our part indicate that the success of group automobile programs through employers is not yet completely assured. Unsuccessful programs, whether because of insurance rates or administrative problems, have been the source of employer and employee dissatisfaction.

We will study this area more carefully over the next six to twelve months and if the positive aspects of such an insurance program become more firm, we will consider the possibility of making it available to our employees.

**What is being done to protect the Profit Sharing Fund from huge losses which have been chalked up on Wall Street lately?**

The losses referred to in the question in most cases are "paper losses"—those which are not realized until securities are sold. Our Profit Sharing Trust, indeed, has experienced some "paper losses" because its investment philosophy which remains basically unchanged from that of a year ago, works for long-term capital appreciation. The immediate cash requirements of the Trust are served by reserves which are invested in commercial paper and other stable short-term securities.

Employees must recognize the purpose of the Trust precludes "second-guessing" security market trends. While it may now appear expedient for the Trust to have converted its assets to cash several months ago, such action could have been costly. Because of the uncertainties involved in "trading," we feel it is in keeping with the Trust to invest for the long-term in securities which have fundamental strength and potential for greater than average appreciation.