

NEWS

SANTA BARBARA RESEARCH CENTER

February 1983

HUGHES SERVICE PIN AWARDS

Symbol of our company's heritage, the Hughes Service pin represents a tradition of progress, achievement and honor. The pin's insignia commemorates two record-breaking flights made by Howard Hughes in the late 1930's.

Over a map of the United States at the pin's center, an airplane is shown flying over the Canadian border, across the northeastern United States, and east above the Atlantic Ocean. The airplane's path traces the three-day round-the-world flight made by Howard Hughes and his four-man crew in July 1938. Mr. Hughes cut in half the previous record set in 1933 by Wiley Post. The five half-wings which surround the insignia honor Mr. Hughes and his crew: Edward Lund, flight engineer; Richard Stoddart, radio operator; Harry Connor, navigator; and Thomas Thurlow, navigator.

Traversing the map of the United States, a second line depicts the route flown by Mr. Hughes when he set his second transcontinental speed record in January 1937, flying his H-1 Racer from Burbank California, to Newark, New Jersey, in 7-1/2 hours.

The earliest reference to a pin in a March 1941 issue of Hughesnews announced that employees could purchase a pin for one dollar. As Hughes Aircraft grew, service pins were designed for 5, 10, 15, 20, 25, 30, 35, 40, and 50 years of service.

Continued on page 3



SANTA MARIA CONSTRUCTION

On November 1, 1982, Santa Barbara Research Center successfully closed escrow and all related legalities pertaining to the 75 acres of property in Santa Maria. Construction began shortly after the closure of escrow. The first phase of construction is a 114,000-square-foot building of which 60,000 square feet will be completed for occupancy by the end of 1983.

At this time, the 60,000 square feet of concrete flooring has been poured in place. The walls are currently being formed and will be ready for erection by the first of February. The structural steel is expected to be on site by the first week in February and in place shortly thereafter. It is expected that SBRC will have built a cornerstone of a building on the intersection of Blosser and Betteravia by the end of February. Del E. Webb is the general contractor for the Santa Maria project.

Continued from page 2

all SBRC's landscaping. Facilities Services includes Plant Services, Custodial Support, and Facilities Engineering. The first two groups are located in B9; the third in B16. Facilities Engineers draw up plans for building new areas such as labs, estimating and supplying each area with its electrical and plumbing requirements. Work orders originated by Facilities Engineering are processed by the Plant Services group in B9. Custodial Support employees, often unrecognized since they work after hours, perform a fine job of keeping SBRC's buildings clean. Plant Services mechanics respond to "Squawks" ranging from putting up bulletin boards to coping with emergency flooding problems.

Providing these three groups with required supplies and clerical assistance are a number of employees whose jobs include answering up to fifty daily "Squawk" calls, processing Work Orders, contacting buyers and following up on Purchase Orders for Construction Liason.

Plant Services maintains current records of all hardware and tools in stock by means of computerized cataloguing and numbering of parts. A well stocked Tool Crib, wood shop and machine shop, as well as a warehouse on Kellogg Ave. supply the mechanics with necessary equipment. Storage sheds contain vacuum cleaners, moving dollies and lumber supplies. Plant Services also maintains nine vehicles and several bicycles. SBRC wishes to thank Facilities Services for performing their varied duties efficiently, assisting SBRC to function successfully.

PUBLISHED PAPER AWARDS 1982

Twenty-two Published Paper Awards were presented in 1982. A list of the publications and the authors follows:

Author	Title of Contribution
R. A. Dye W. J. Archambeault	Pulsed Laser Diode Reliability Tests
J. C. Lansing T. D. Wise	Thematic Mapper Design Description and Performance Prediction
T. D. Wise	Alignment Techniques Required by Precise Measurement of Effective Focal Length
C. F. Schueler	Spatial Replication in Back-Propagated Acoustic Holograms

K. J. Riley
M. Lanir
S. L. Price
P. R. Bratt
A. H. Lockwood

R. J. Peck
W. S. Glaunsinger

M. Lanir
K. J. Riley

J. P. Rosbeck
I. Kasai
R. M. Hoendervoogt
M. Lanir

C. F. Schueler
T. K. Thorne

J. B. Young
P. E. Thurlow

C. A. Cockrum
T. W. James
M. Moroz

M. Lanir
W. L. Ahlgren
K. E. Kosai
J. E. Randolph

J. L. Engel
O. Weinstein

T. W. James
V. B. Harper

M. H. Kalisher
A. P. Stevens

D. R. Nichols
S. Sen

J. P. Rosbeck
R. E. Starr
S. L. Price
K. J. Riley

T. T. Cafferty

J. A. Wilson

G. W. Autio
R. L. Nielsen
W. W. Sloan
E. M. McCutcheon

R. V. Howitt
D. D. LaPorte

C. E. Jones
J. A. Wilson

Growth and Characterization of HgCdTe for Hybrid Focal Plane

Conduction Electron Paramagnetic Resonance Study of Concentrated Alkali Metal-Ammonia

Performance PV HgCdTe Arrays for 1-14 μ m Applications

High Performance Be⁺ Implanted InSb Photodiodes

Radiometer End-to-End Simulation

Measurement of Optical Modulation Functions in Sparsely Sampled Mosaic Focal Plane Arrays

Performance of 0.1 eV Photoconductor Arrays Fabricated from Liquid Phase Epitaxy

Performance of Gated HgCdTe Photodiodes for SWIR HFPA Applications

The Thematic Mapper—An Overview

Observations of Dislocations in Thin Expitaxial Films of Hg_{1-x}Cd_xTe by Chemical Etching

Determination of Composition Uniformity and Annealing Behavior of Hg_{1-x}Cd_xTe LPE Grown Layers

A Comparison of Single-Crystal CdTe Grown by Vapor-Phase and Melt Growth Techniques

Background and Temperature Dependent Current - Voltage Characteristics of HgCdTe Photodiodes

Spacecraft Radiative Transfer and Temperature Control

Photoemission Investigation of Atomically Clean Hg_{1-x}Cd_xTe Surface in Vacuum and Under O₂ Exposure

HOE Focal Plane Assembly

Ambient Temperature Absolute Radiometry Using Fourier Transform Spectrometer

Investigation of Interface Region in N-Type HgCdTe



SUPERIOR PERFORMANCE AWARD PRESENTATION

Each year SBRC supervisors nominate outstanding employees for the Corporate Superior Performance Award. SBRC gives this very special award to one employee out of 1,000 in the plant.

On January 27, 1983 a large group of people witnessed Dr. Talley's presentation of the 1982 Superior Performance Award to Maxine Escobar and Stewart Chan.

Maxine, a Supervisor, Engineering Services I, has been with SBRC for eight years. Maxine's group provides engineering document services for all of SBRC and averages 70,000 pages of data per month. Her efforts have reaped dividends in the form of dramatically increased production rates, greater accuracy and customer satisfaction. Maxine can always be counted upon and is well appreciated throughout the company.

Stewart, a Buyer in the Materiel Department has impressed everyone with his exceptional work habits and personal qualities in the three years he has been with SBRC. Stewart is capable of handling any buying task in Materiel regardless of dollar value or degree of difficulty. In one year, Stewart had several Performance Improvement Proposals approved, in addition to a cost savings of \$50,000. Stewart, with his unusual vigor and attention to detail, is constantly striving for excellence.

FACILITIES SERVICES

Building 9 houses Facilities Services, better known to SBRC employees as "Plant Services", a hard-working group of approximately 100 people who support the daily maintenance and repair needs of SBRC's many employees and take care of

Continued on page 4

SEA WORLD OFFER

The Personnel Department has arranged a special deal for SBRC employees with San Diego's Sea World. For two consecutive weekends and including Easter week, March 26 - April 3, 1983, 50% admission discounts will be offered to special Shamu Dolphin Club Members of SBRC and their families. To obtain a Shamu Dolphin Club Membership card and tickets, please contact either Ruth Johnson (ext. 2507) or Alice Jauregui (ext. 2269) in the Benefits Office, B5. Tickets for adults will cost \$5.25 (regular price, \$10.50); tickets for children, ages 3 - 11, will cost \$3.75 (regular price, \$7.50). The deadline for buying tickets is March 31, 1983. Payment must be made in CASH.



DUAL SPECTRUM
SENSING AND SUPPRESSION SYSTEMS

"Dual Spectrum™" will soon become the registered tradename for SBRC's "fire sensing and suppression system" product line. To accompany this tradename, SBRC has developed a stylized logo for the product line to initiate an aggressive identity and promotional campaign. The "Dual Spectrum™" system is a life-saving safety device that detects and suppresses explosions within 100 milliseconds—half the time it takes to blink one's eye.

Dual Spectrum™ systems have recently been displayed at major U.S. military trade shows, including the Marine Corps and AUSA shows. The product line is designing a trade show modular display unit to exhibit its latest technological developments.

SBRC has delivered to date more than 13,000 Dual Spectrum™ infrared sensors for the Army's M1 Abrams Tank and M2/M3 Bradley Fighting Vehicle. Recent milestones in these projects include the completion of L181 and L197, delivering 569 systems for the M1 third year production and 300 systems for the M2/M3 second year production, respectively. Currently, there are about another 13,000 infrared sensors in backlog and a future demand of an additional 57,000 sensors for these rugged armored vehicles.

Both programs have undergone extensive control testing while being successfully managed within budget constraints. SBRC appreciates all the fine work performed in making its Dual Spectrum™ system the world leader in the military vehicle market for automatic explosion sensing and suppression devices.

MANAGEMENT ACTION WORKSHOPS

1982 saw twenty-one SBRC Managers and Section Heads join 433 of their HAC counterparts at the Management Action Workshops. These three- and four-day "live-in" workshops are designed to strengthen the participants' managerial skills in such areas as team building, planning and decision making.

The following people attended from SBRC:

Ray Amador	Brinn McKone
Conrad Anderson	Mark Preiser
Ed Blazejewski	Ed Reis
Stillman Chase	Bob Russell
Bob Cogill	Frank Scully
Greg Crosson	Gabe Tabyanan
Dave Edwards	Charles Tallman
Larry Falberg	Harvey Turner
Bob Hogan	Jack Weber
Dick Hook	John Yanos
Bert Hornback	

The consensus of post-workshop interviews was that the sessions were well organized, practical, informative and well worth the investment.

Training and Development urges that, when selected, you make every possible effort to attend the workshops—you won't be disappointed! 1983 will be another good year. PLEASE NOTE: In order to be eligible to attend you must be nominated by your manager and hold the position of Section Head or higher.

NEED TAX FORMS?

Certain 1982 federal and state tax forms are available in Building B5, Room B215. For further information, please call extension 2600.

SPECIAL THANKS

Thanks to the many SBRC employees who gave so generously and made our Christmas Tree Project a success.

Your gifts of food, toys, money and beautifully-appareled dolls for the Council of Christmas Cheer helped to provide a brighter Christmas for needy families in the local area.

SAVINGS PLAN VALUES

Savings Plan Values as of 31 December 1982:
Equity: 2.1705607 Fixed: 2.2808940



WORK, INC. PRESENTATION

On January 7, 1983, Santa Barbara Research Center presented Work, Inc. with a donation of \$1000. SBRC makes annual contributions to Work, Inc., a licensed vocational rehabilitation facility serving the Santa Barbara community.

Work, Inc. provides a daily average of 80 people with diagnostic assessment services and hands-on experience designed to prepare the trainee for entry into the business world. Work, Inc.'s skills training programs include grounds maintenance/landscaping and machine operator training. Their work training and experience program also includes electromechanical assembly. SBRC has hired a number of employees from Work, Inc., and has subcontracted work directly to them.

SBRC's interest in the community is reflected in its periodic contributions to many local organizations, among them: the United Way, the Santa Barbara Intra-School Science Fair, the Santa Barbara Scholarship Foundation, La Casa de la Raza, Goleta Valley Community Center, and other worthy nonprofit organizations.

Continued from page 1

Each year's pin differs slightly from the others. The gold-filled 5-year pin features the same insignia as the others, but no gem. The other anniversary pins feature the insignia and a different gem according to the length of service. The 10-carat, 10-year pin has an emerald, the 15-year pin a ruby. Twenty-year pins feature a single diamond, and one additional diamond is added for each five-year anniversary increment.

The SBRC News - published in the interest of the employees of
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Writers - Ellen Masthoff, Rich Jensen

- STAFF -
Greg Krueger - Anita Metcalf
Tom Sullivan - Steve Walker - Advisor, Ed Ward



1982 CIP/PIP RECIPIENTS HONORED

On February 7, 1983, a very enthusiastic crowd braved a rainstorm to participate in the 1982 CIP dinner at the Santa Barbara Sheraton.

The ceremony was initiated by Cecil Hill, Corporate Hughes, CIP Manager, who expressed his appreciation for SBRC's very successful year. Dr. Talley enthusiastically indicated his support of the program, pointing out that some of the excellent CIP ideas helped to generate savings of \$986,968 in 1982, exceeding the original CIP goal by over \$236,000.

On February 9, over 150 participants were honored during a luncheon at the Elks Lodge. Dr. Talley was proud to note that 217 PIPs were approved in 1982.

Hats off to CIP/PIP coordinators, Adrienne Jackson (IRC), Shirley Langlois (MFG), Pam Conner (PA), Marion Robinson (EOI), Llana Sherman (SIRS), Geraldine Lewis (IS), and Jessie Mesek (ADM) for a job well done in 1982. The CIP/PIP program is looking forward to their continued support in 1983. Mary Chooljian, CIP/PIP Program Administrator, has already received many PIPs and CIPs for 1983, and is looking forward to a busy and productive year.



Savings Plan values as of February 1983:
EQUITY: 2.3309087 FIXED: 2.3210758

CORRECTION

The article about Service Pins Awards that appeared in the February issue erroneously indicated that 25 year pins feature 2 diamonds. In fact, the 20 year pin has one 2-point diamond, the 25 year pin has one 3-point diamond, and the 30 year pin has three diamonds.

PRESENTATIONS STUDIO

Training and Development will be making available a PRESENTATIONS STUDIO to all SBRC employees who are involved in technical, marketing, contracting, scientific or business presentations. The studio will use interactive video techniques to help presenters fine tune their delivery, organization and poise.

The studio opened for business in February and will continue to be at your disposal every THURSDAY from 2:00 to 5:00 at the TRAINING ROOM (B7). We urge all presenters to avail themselves of this service.

PLEASE NOTE: Reservations should be placed with Hortencia Esparza (X4152).

SBRC EVENING STUDY PROGRAM

By January 31, 1983, Training and Development's office was flooded with over 500 applications for SBRC's Evening Study Program. Currently 330 applicants have been enrolled in 13 different courses such as Effective Time Management, Dimensioning and Tolerancing, VAX Computing, and many more.

For those who have been placed on waiting lists, additional sections will be formed to accommodate you as soon as possible. Current Training and Development projections indicate that 1983 will be our best year ever!

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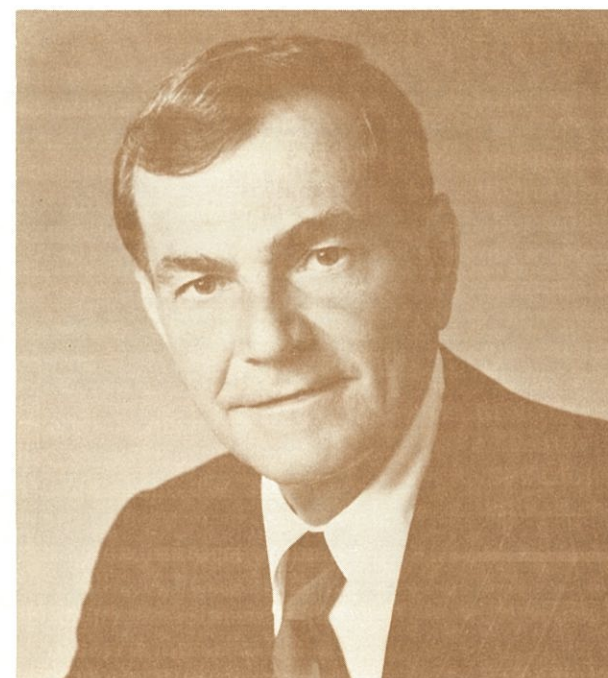
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APRIL 1983



JOHN H. RICHARDSON
1922 - 1983

John H. Richardson, president of Hughes Aircraft since 1978, died in Los Angeles Sunday, March 27, at the age of 60.

Mr. Richardson was born in Auburn, N.Y., on July 30, 1922. He attended Princeton University and completed executive programs at the University of California Los Angeles (UCLA) and Massachusetts Institute of Technology (MIT). He was a member of the Chancellor's Associates of the UCLA Foundation and an honorary professor of the Defense Systems Management College. Following service as a B-29 bomber pilot in World War II, he joined Hughes Aircraft Company and worked in various management positions prior to being appointed president.

A veteran of nearly 35 years at Hughes Aircraft, Mr. Richardson was tremendously supportive of SBRC's contributions to the company. Of special interest to him were the Pilotless Carrier Optical Unit (DSU) and the Thematic Mapper (TM) programs. Norm Rigby, Manager of SIRS Business Area, remembers that Mr. Richardson "was very supportive of the DSU program since the first days of the DSU-21 qualification tests which required substantial company investment in 1976." Warren Nichols, SBRC Vice President, speaks of Mr. Richardson's appreciation of the TM program: "Through the years I found Mr. Richardson not only an avid supporter of the TM development effort but also intimately aware of the significance of the program and of the major contribution and achievement of SBRC personnel. On several occasions, Mr. Richardson specifically commented on the progress and major achievement of the TM program."

During his years at Hughes, Mr. Richardson became one of the aerospace industry's leading spokesmen on Defense Department procurement policies and approaches conducive to the strengthening of the NATO alliance.

Mr. Richardson also testified frequently before congressional committees, various military panels and other bodies on behalf of the Aerospace Industries Association.

He was a member of the U.S. Defense Science Board and was chairman of the board of directors of the American Defense Preparedness Association.

He served on the board of advisors of the National Contract Management Association and was elected a fellow of the Association in 1980, receiving an honorary life membership in 1982. Mr. Richardson also served on the boards of directors of Ducommun, Inc., the Investment Company of America, the National Aeronautics Association and the National Athletic Health Institute.



DR. TALLEY'S "ALL HANDS" TALK

All SBRC employees were briefed by Dr. Talley on the status of the company on March 9. Putting SBRC's status into perspective, he first characterized the status of the economy. He observed that the economy, overall, is basically in recession. However, some sectors, notably the defense sector, are booming, while other sectors are in depression. As a result, defense-related industries have acquired a high profile and are under increasing pressure to control costs and to improve productivity. One result of the increased visibility is an increase in audit action. Dr. Talley emphasized that SBRC's response must be through improving productivity and especially careful handling of proposal costing, time-card records, and reports.



Discussing specific accomplishments, he noted that the Phase I construction at Santa Maria had commenced. Currently the walls are up and construction is on schedule. Relocation of the Common Module and IIR Maverick assembly operations to Santa Maria is scheduled for later this year. Other planned relocations include moving Purchasing, Inspection, and Stores to new facilities on Hollister, relinquishing the currently occupied

facilities of Oceanographics, Mercury and most of the facilities on Storke Road.

Summarizing SBRC's 1982 performance, Dr. Talley stated that turnover in 1982 reached a record low. The largest training and education program was mounted, and there was the best participation ever in the CIP and PIP programs. The Engineering Rotator Program also was launched and is expected to pay off in the future in terms of improved engineering know-how.

As to 1983, Dr. Talley indicated that sales would be up a bit, and earnings should return to a higher level. Employment should be level at about 2100. Dr. Talley closed by stating that the good backlog acquired in 1982 should provide an adequate buffer against the effects of any potential cuts in DOD programs.



DONATION FROM SBRC

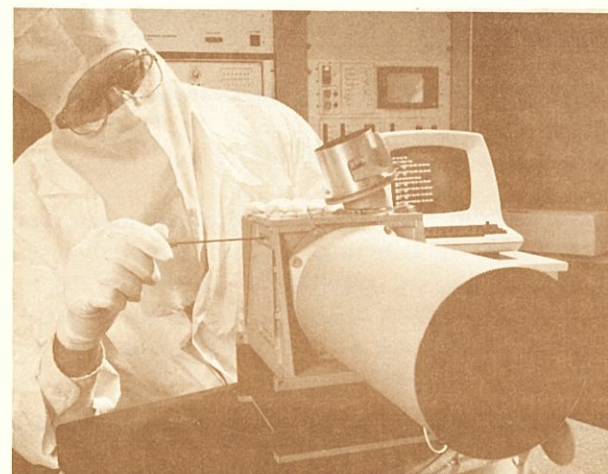
On February 9, 1983, SBRC donated a variety of surplus scientific equipment to Santa Barbara High School. Mrs. Irene Kasai was on hand to accept the donation which included storage cabinets, blackboards, scientific glassware including a bell-jar, a pH meter, and a wire-bonder. This equipment had been stored in Building 315, which has been relinquished by SBRC.

SBRC believes that community efforts should be supported by local businesses, which will benefit in the future from their assistance in upgrading the quality of education in Santa Barbara schools.

Savings Plan values as of January 1983:

EQUITY: 2.2373463

FIXED: 2.3021106



OPTICS DEPARTMENT

The Electro-Optical Instrumentation (EOI) Optics Department is composed of engineers who provide a balance between engineering experimentalists and applied/theoretical analysts. These engineers are ably supported by individuals talented in the areas of assembly, alignment, calibration and testing.

A staff of design engineers is currently supporting developments in EOI, IRC and SIRS business areas. The optical engineering section can fabricate and/or modify telescopes, microscopes, spectrometers and radiometers. The metrology section has specialized equipment such as Fourier Transform Spectrometers, scattering goniometers and interferometers which are used to make a wide range of sophisticated measurements.

The Optics Department capabilities cover optical development from concept through space flight qualification. Specifically, areas of capability/responsibility include:

- Participation in the preparation of the Optics portion of proposals and their pricing.
- Conceptual and detailed optical design.
- Optical engineering analyses associated with the development of electro-optical sensors and their calibrator systems.
- Preparation of optical procurement specifications.
- Technical liaison associated with procurement of optical components and assemblies.
- Performance of incoming inspection on critical optical components and assemblies.
- Generation of test concepts and writing of test procedures for optical subassemblies and system level acceptance testing.

- Participation in the assembly of optical components into major subassemblies and their subsequent testing.
- Participation in the generation of system level optical performance characterization including: wavefront, modulation transfer function, scattering, alignment, relative spectral response, field of view, crosstalk, radiometric calibration effective focal length and geometric scanning parameters.

In summary, the Optics Department has the following areas of expertise available to support any area in SBRC:

- Optical design
- Computer modeling of optical/radiometric/Scattering phenomena
- Optical engineering
- Spectral measurements from 0.2 to 700 μm
- Interferometric measurements
- Optical radiometric calibration

Individuals in the Optics Department are ready, willing and able to put forth the extra effort which is frequently needed to make things work. As an example of this, Optics personnel are frequently "drafted" into system test teams because of this attitude. SBRC wishes to thank the Optics Department for its valuable contributions to the company's success.

SBRC AMATEUR RADIO

Congratulations to Don Randles and Clint Collins for passing the FCC Amateur Radio Novice examination. Don and Clint are graduates of the SBRC Radio Club noon-hour instructional program. Any one who is interested in becoming licensed is welcome to attend classes. Instruction for the Novice License, as well as for more advanced licenses, is given Tuesday and Thursday at noon in B6, W322. Code proficiency and theory are taught during each session.

ATTENTION BEAVER BUILDING EMPLOYEES!

The Personnel Services Representative has relocated. Until further notice, EOI employees can find answers to their benefits questions in B11, Room E-708. Help is available on Tuesdays from 1:45 - 2:30 p.m.

VIDEOTAPE CHECKOUT PROGRAM IN PROGRESS

A selection of company oriented video programs is now available for short-term checkout from SBRC's Photo Services. The program topics range from an upbeat presentation of the proposed expansion in Santa Maria, to an in-depth tour of IRC's R&D labs. Many of these programs are regularly used for customer orientation, sales presentations, public relations, and employee information purposes. All programs are distributed on 3/4" U-Matic format tapes and are compatible with the video players located in the conference rooms of Buildings B-1, B-2, B-7, B-11 and B-21.

The following programs are currently available for general viewing:

SBRC PROMOTIONAL: Presents an overview of the entire company, emphasizing SBRC's complete research, development, manufacturing, and test capabilities.

SBRC's NEWEST FRONTIER: Briefly summarizes the proposed expansion in Santa Maria and presents an upbeat view of the lifestyle available in the community of Santa Maria.

INFRARED RESEARCH & DEVELOPMENT: Two Dimensional Detector Arrays: An in-depth presentation of the equipment and capabilities of IRC's R&D labs.

GOES F: THE NEW EYE IN THE SKY: Highlights the recent successful launch of the GOES F (GOES 6) spacecraft carrying SBRC's latest imaging instrument, the VAS.

THE LAUNCH OF LANDSAT 4: Documents the prelaunch activity of the Landsat 4 Thematic Mapper, Multispectral Scanner at Vandenberg Air Force Base in July, 1982, culminating with dynamic launch footage shot by SBRC's photographers.

MAVERICK MANTECH: A VIDEO REPORT: Presents an overview of the manufacturing methods developed by SBRC to reduce the production costs for the IR Maverick Detector/Dewar.

Several other programs produced by Hughes Aircraft Company are available on special request. For details, contact Photo Services at least one week prior to presentation date. Tapes can be checked out by calling extension 4486 or 4488.

Continued from page 1

The first images of the Pacific and western United States were obtained on May 17, and were of an excellent quality and resolution. These images will be provided on a 24-hour basis to the National Weather Service, television media, and meteorologists starting June 1, 1983.

Meteorologists use the day and night weather pattern pictures to track storms and provide timely warnings of threatening conditions. Weather views provided by previous GOES satellites have been helpful in agriculture, shipping, fishing, and water and power distribution management. In addition, GOES monitored the 1980 eruption of Mt. St. Helens in Washington state, tracking its plume of volcanic ash as it spread eastward across the country in order to facilitate redirection of aircraft from the extremely hazardous cloud.

SBRC's Electro-Optical Instrumentation Business Area (EOI), managed by Lloyd Candell, encompasses the VAS Instrument Program which is managed by Richard Ruiz with engineering support by Richard Roberts and administrative support by Keri Cooley. The VAS F Program's responsible REAs include Steve Bailey, Stan Benda, Mike Bender, Bruce Bivans, George Cannon, Don Dascomb, Howard Glenn, Bob Hogan, Bob Jensen, Rolph Keehn, Frank Malinowski, Dave Rogers, Bob Russell, Rich Shadforth, Jack Tatjes, Dick Thurston, John Watson, Larry Wolthausen, and Gary Barnett.

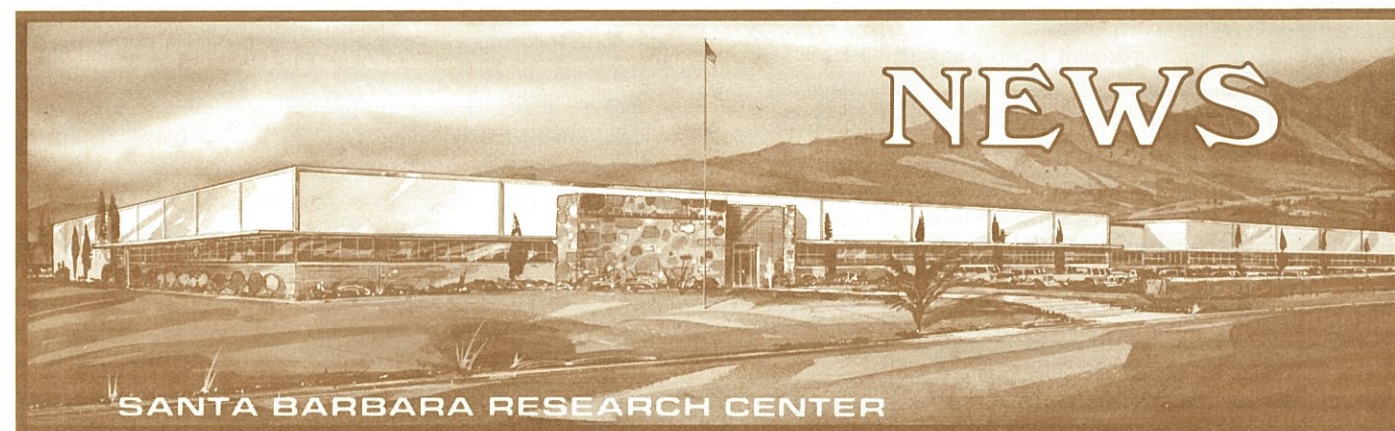
The VAS is one of a series of instruments built by the EOI Business Area which have provided meteorological data since November 1974.

SBRC is currently under contract with Hughes Aircraft Company to fabricate two similar meteorological sensors for future use for the National Oceanic and Atmospheric Administration (NOAA), and two systems to provide similar weather surveillance for the Japanese National Space and Development Agency (NASDA).

SAVINGS PLAN VALUES AS OF 31 MAY, 1983:

EQUITY: 2.6031003 FIXED: 2.3775485

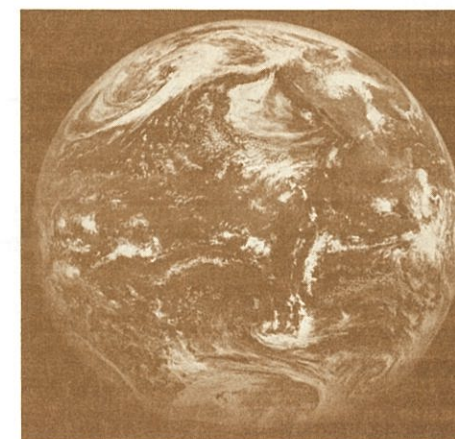
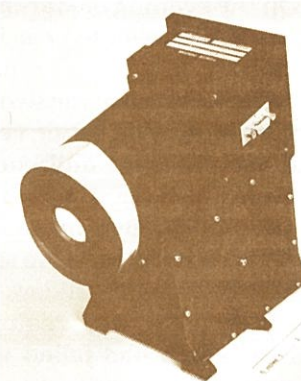
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SBRC IN SPACE

June 1983

Nearly fifteen years ago, several members of the EOI staff spent their Thanksgiving holiday completing two proposals for scientific instruments to be flown aboard the Pioneer 10 and 11 spacecraft. Of the more than 2500 such proposals submitted by international science teams, only 13 were selected for the proposed mission intended to explore the planet Jupiter. Both SBRC experiments were among those 13.

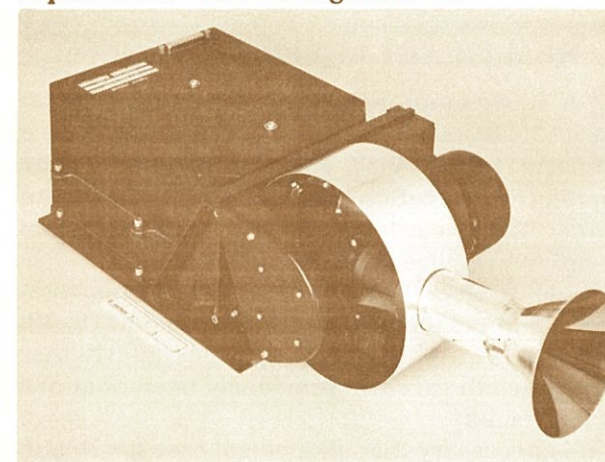


THE NEW EYE IN THE SKY

On April 28, 1983, SBRC participated in the launch of a spacecraft designated Geostationary Operational Environmental Satellite (GOES F) at Cape Canaveral Eastern Test Range.

On April 30, the spacecraft was injected into geosynchronous orbit 22,300 miles above the equator and drifted in a westerly direction to its planned station of 135° west longitude until May 16, on which day it was stabilized over the western United States and a major portion of the Pacific Ocean from Alaska to New Zealand.

On May 17, SBRC's Frank Malinowski and Dave Rogers supported a team of NASA/NOAA personnel at Goddard Space Flight Center in the first in-orbit test of the "eye" for the GOES, that being the Visible Infrared Spin-Scan Radiometer Atmospheric Sounder (VAS), designed and built by SBRC. The VAS System is an electro-optical device that senses the radiant energy produced by the Earth and clouds, and detects temperature variations throughout the atmosphere. Images are then provided in both the infrared and visible spectrums every half hour, 24 hours a day.



These experiments demanded instruments to make remote measurements of physical phenomenon with laboratory precision and accuracy, while operating in a hostile space environment under the constraints of extremely limited resources of power (less than 3 watts) and weight (a few pounds). Meeting these technical challenges, SBRC produced the Infrared Radiometer (IRR) and Imaging Photopolarimeter (IPP) instruments on a fixed delivery schedule, because the specific launch time was determined by the relative position of the planets.

Continued on page 2

Continued on page 4

Continued from front page

The IRR was developed under the direction of Still Chase as Program Manager and Dick Ruiz as Program Engineer, was designed to measure the temperature of the planet. The IPP, managed by Lou Watts and Dr. Edward Russell as Systems Engineer, was designed to measure the zodiacal light during the 21-month flight to Jupiter, analyze the Jovian atmosphere and aerosols through polarimetry and photometry measurements, and then produce close-up color spin-scan images of the planet. Because of the great uncertainty of the environment and trajectory of the spacecraft, special attention was given by the designers to flexibility of preprogramming the instruments to handle a wide variety of potential contingencies. This foresight has subsequently proven invaluable as this 21-month mission has now been stretched to an 11-year duration, accomplishing feats that were not even possible at the time of the launch.

While Pioneer 10 was enroute to Jupiter, the deep-space communication ground stations were improved to allow for more data to be sent back to Earth than originally planned. For example, the IPP designed to produce six images of the planet ultimately sent hundreds of images. Other experiments were similarly expanded. In fact, Pioneer 10 was so successful in obtaining information about Jupiter that Pioneer 11, following a year behind, was retargeted in mid-course to be deflected by Jupiter and to fly-by the planet Saturn nearly five years later, a new unplanned bonus mission.

The SBRC instruments are still functioning flawlessly, with the Pioneer 11 IRR data aiding the analysis of Saturn's moon Titan, which appears to have the hydrocarbon compounds necessary for life. Both IPPs are providing all navigation and attitude reference information now, since the spacecraft sensors, well beyond their design ranges, are unusable.

Among the many "firsts" of Pioneers 10 and 11, SBRC instruments have contributed to the proof of the existence of zodiacal light, equality of Jupiter's daytime and nighttime temperatures, new moons of Jupiter, new rings around Saturn, atmosphere composition and structure on Jupiter and Saturn, and navigation beyond the solar system.

Earlier this month a special ceremony was held at NASA Ames Research Center as Pioneer 10 exited the solar system. As a special exercise for this occasion, Lou Watts and University of Arizona scientist Lyn Doose imaged the star "Altair" toward which the spacecraft is traveling; the IPP responded flawlessly 4 hours and 20 minutes later when the commands arrived at the spacecraft 2.8 billion miles away, but it was another 4 hours and 20 minutes (8:40 round trip) before anyone knew that it had done so.

The Pioneers interstellar exploration could last thousands of years and take them billions of miles into the unexplored recesses of the universe. SBRC can indeed be proud of the accomplishments of the many employees whose hard work has given our company the opportunity to play a part in these historic journeys.

COMMENDATIONS FOR PLANT PROTECTION OFFICERS

As a result of their actions in coming to the aid of a police officer, Plant Protection Officers Yvonne Bynum, Gregg Ritchie, and David McNeil have been commended by both Security Management and the UCSB Police Department.

On the evening of March 30, 1983, a UCSB patrol unit stopped a stolen car in the SBRC parking lot adjacent to Hollister Avenue. When the officer attempted to place the two suspects under arrest, one fled and the other resisted, struggling with the police officer and knocking him down.

Hearing the activity on the Command Center scanner, Sgt. Bynum and Officers McNeil and Ritchie responded to the scene. Upon their arrival the SBRC security officers found the police officer in a struggle and requesting assistance. The officer's gun had fallen to the ground near the struggle and appeared to be within reach of the suspect. After kicking the gun away from the suspect's reach, the SBRC officers assisted in subduing and holding him until backup units from UCSB and the Sheriff's Office arrived.

HEALTH NET COVERAGE BEGINS

For those employees selecting the Health Net Health Maintenance Organization, coverage became effective 1 June 1983. Health Net will soon be mailing identification and Prescription Drug Plan cards. These cards will verify coverage when members require services.

When first visiting the facility, it is important that members identify themselves as new Health Net members. This is true regardless of whether or not health care has previously been obtained at that facility.

It is necessary that all medical care for Health Net members be coordinated by a Health Net Primary Care physician. The responsibility for selecting a Primary Care Physician rests with the Health Net member. Physician listings for the various medical groups are available in the Benefits office.

If it is necessary to obtain prescription services before receiving the prescription identification card, all members may utilize Prescription Pharmacy, located at the Santa Barbara Medical Foundation Clinic. Having prescriptions filled at Prescription Pharmacy will allow members to obtain

Continued next page

GRADUATION TIME

CONGRATULATIONS are in order for 27 graduates of SBRC's "Supervisory Skills" course. For 11 weeks, supervisors, new and veteran, as well as nonsupervisory employees from various Business Areas, completed an intensive program of supervisory skills and behaviors, practices, and responsibilities. The fruits of the efforts and study will no doubt manifest themselves in all aspects of their day-to-day activities, especially in the areas of goal-setting, coaching, improving communication, and building solid work teams.

These graduates hold high expectations of themselves and of SBRC and they are willing to meet the challenges of today's environment with a stronger commitment to excellence. Your applause and support should be extended to:

Devonna Bitz	Frank Martinez
Karen Bushnell	Russ McNeil
Gene Coling	Janet Morales
Hortencia Esparza	Ellie Mullins
Lloyd Evans	Frank Munro
Martha Fallgatter	Bill Pennington
Steve Fishel	Jim Randolph
Fred Gallagher	Sam Ryan
Steve Hernandez	Diane Salazar
Helen Jefferson	Ed Salera
John Jeffryes	Susan Tunnell
Greg Lewis	Pauline Wold-Echert
Maurice Lipkowitz	John Yanos
Darrell Marchus	

PREMIUM HOLIDAY—VOLUNTARY AD&D

Due to favorable claims experience, a premium holiday has been declared for the Voluntary Accidental Death and Dismemberment insurance plan. Employees participating in this optional plan will not have a premium payment deducted from paychecks for pay periods ending June 3, 10, and 17, 1983. There will be no lapse in coverage. This premium holiday is a means of passing insurance cost savings back to the employee.

Continued from page 2

a prescription by paying the required \$2.00 deductible. If prescriptions are filled at any other pharmacy before the identification card is received it will be necessary to pay the full price of the prescription, then file a claim for reimbursement. Claim forms for this purpose are available in the Benefits office.

After the prescription identification card is received it may be presented at any participating PCS pharmacy. This will allow members to receive prescriptions by paying only the \$2.00 deductible. Lists of participating PCS pharmacies are available in the Benefits office, Building B5, or by calling ext. 2288 or 2502.



AIR FORCE GRADUATION

Michael Louis Diaz, the son of Louis Diaz who works in the Publications Department at SBRC, graduated as a Lieutenant from the United States Air Force Academy in Colorado Springs on June 1, 1983.

A graduate of Bishop Diego High School, Michael received appointments to West Point and Annapolis, but chose to accept the Congressional appointment by Robert Lagomarsino to the Air Force Academy.

Congratulations to Lieutenant Diaz and his proud parents, Clare and Louis, for Michael's laudable achievements.

ATTENTION SBRC EMPLOYEES

Human Resources and the benefits office offers employees of B-8, B-9, B-11 and B-12 the opportunity to do their benefits and personnel services business right in the friendly confines of their own buildings. One day each week a representative from benefits visits these buildings for the express purpose of handling your questions and concerns. In addition, claim forms, enrollment cards and other necessities may be secured from the benefits representative. Come on! Take advantage of this service and save time in the process.

BLDG	ROOM	TIME	DAY
B11, B12	E-708	1:45 -2:30	Tuesdays
B9	Lunchroom	3:30 - 4:15	Wednesdays
B8	Lunchroom	2:45 - 3:30	Thursdays

SAVINGS PLAN VALUES AS OF 31 MARCH 1983

EQUITY: 2.4341288 FIXED: 2.3409994

SAVINGS PLAN VALUES AS OF 30 APRIL 1983

EQUITY: 2.5940972 FIXED: 2.3599417

SBRC PATENT AND LICENSE ADVICE

Many employees may be unaware that SBRC has newly acquired the guidance of our own patent attorney. Mr. Jay Dennis Moore, employed by the Hughes Patent and Licensing Department in El Segundo's Corporate Towers, is now holding office hours in B1, Room W824, on Mondays (10:00 a.m. - 5:00 p.m.) and Tuesdays (8:00 a.m. - 3:00 p.m.). Mr. Moore is available on an appointment or drop-in basis to help anyone interested with patent, licensing, or patent-related contractual questions.

A year ago the Hughes Patent and Licensing Department's attorneys provided service for all of Hughes and its subsidiaries. Due to an organizational change, each subsidiary or specific Hughes group has been assigned its own attorney(s). Mr. Moore is responsible for the Hughes Research Lab at Malibu, and SBRC.

Those employees interested in having an idea or process reviewed for patentability should fill out a disclosure form and submit it to Mr. Moore. The idea will be evaluated and reviewed by the SBRC Invention Evaluation Committee, of which Mr. Moore is the chairman.

The following patents were granted during the years 1981-1983:

PATENT NO.	DESCRIPTION	INVENTOR	DATE GRANTED
4,282,290	High Absorption Coating	S. Pellicori	8/24/81
4,344,476	HgCdTe Supercool Quenching Technique	M. Monnier E. Sutcliffe	8/17/82
4,297,082	Vacuum Gettering Arrangement	R. Cole E. Peterson	10/27/81
4,296,324	Dual Spectrum Fire Sensor	H. Wurtz R. Cinzori	10/20/81
4,330,204	Self-Aligning Laser Communicator Utilizing Reciprocal Tracking	M. Kern R. Dye	5/18/82
4,385,833	Double Optical Fan Generator	L. Gardner	5/31/83

SERVICE PIN AWARDS

The following SBRC employees received pins during the month of May 1983:

MAY 1983
5-YEAR PINS

W. Jean Faison Security Representative II Administration	Ed A. Rios Vacuum Technician 2 SIRS Business Area
--	---

Helen R. Gagnon Administrative Secretary Administration	Mark Janorschke Technical Photographer Manufacturing
Brenda R. Blomberg Project Control Administrator EOI Business Area	Genevieve V. Meinert Secretary, Administrative, Sr. Manufacturing
Cheryl A. Rossman Production Control Specialist EOI Business Area	Norine F. Wallace Materiel Clerk "A" Manufacturing
John C. Applegate Research Assistant "A" EOI Business Area	Mary Garrett Supervisor, Production 2 Manufacturing
F. Gerald Brown Manager, Project EOI Business Area	Doris J. Montgomery Production Technician "B" Manufacturing
Brent A. Graham Member of Technical Staff, Software EOI Business Area	Cheena V. Cuevas Administrative Clerk, Sr. Manufacturing
William J. Molloy Supervisor Mechanical Assembly & Test I SIRS Business Area	Charles B. Jucey Quality Technical Assistant, Sr. Product Assurance
Susan A. Sena Assembler, Sr. SIRS Business Area	George S. Harms Quality Assurance Engineer II Product Assurance
Richard Hartshorne III Research Assistant "A" SIRS Business Area	Frank W. Munro Supervisor, Quality Assurance I Product Maintenance

10-YEAR PINS

Martha J. Fallgatter
Production Control
Administrator
Manufacturing

15-YEAR PINS

Emile F. Renaud Research Assistant "A" EOI Business Area	Graciela Resek Production Technician "B" Manufacturing
Robert W. Marlett Process Engineer I Manufacturing	

25-YEAR PINS

Robert S. Biggers
Production Project
Administrator
Manufacturing

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NEWS

SANTA BARBARA RESEARCH CENTER

AUGUST 1983

DSU-15/B AND DSU-15A/B ACTIVE OPTICAL TARGET DETECTORS

In 1972, China Lake Naval Weapons Center contracted SBRC to design, develop and fabricate six engineering models of an Active Optical Target Detector (AOTD) as a candidate for the AIM-9L Sidewinder Missile. At the completion of this work, the SBRC design (designated DSU-15/B) was selected and SBRC produced units for fabrication and flight tests. In the acronym DSU-15 or DSU-21, "D" stands for pilotless carrier and "SU" stands for optical unit. The number 15 or 21 is a sequential number assigned to differentiate between types of DSU's. The successful qualification program was the forerunner of five major DSU-15/B production contracts which began in 1975 and were completed in 1982 with the delivery of the 10,025th unit.

In 1975, the Naval Weapons Center awarded SBRC a further contract to produce the DSU-15/B. The result of this contract is the DSU-15A/B with 200 fewer components (a reduction of 53%) and a correspondingly lower production cost. After two years of production, SBRC has delivered over 6,000 DSU-15A/B's.

The total number of Sidewinder Missile AOTD's manufactured by SBRC is in excess of 36,000 units comprised of the DSU-15/B, DSU-15A/B, and DSU-21/B versions for the Air Force, Navy, and various foreign countries.

The success of the DSU-15/B and DSU-15A/B Target Detectors is a credit to all of the SBRC organizations that have worked on these programs. These have been the largest programs that the company has ever received, currently totaling over 151 million dollars of business. SBRC expects to continue to compete for production of DSU-15A/B units through 1988.

THRIFT AND SAVINGS PLAN

The Thrift and Savings Plan offers several significant improvements over the previous Savings Plan. The highlights of those improvements include

- A reduction in taxable income, deferring payment of taxes on Savings Plan contributions until withdrawn.
- An increase in the company contribution to 75 cents for each employee dollar invested, up to 7 percent.
- Company contributions will be 100 percent vested after two full calendar years following the year of contribution and may be withdrawn after vesting occurs. Employee contributions must remain in the plan until retirement, termination, or demonstrated hardship.
- Employees may invest 2, 4, 6, or 7 percent of their pay immediately. The three year wait to invest at the maximum contribution level has been eliminated. The Future Planning Card provides the opportunity to authorize an increase in contribution level to 8%. If participation levels are met, the increased maximum will become effective sometime after 1 October 1983. The amount contributed above 7% will not be matched by company contributions, but will continue to have the tax deferral advantage that the plan offers.
- Investments may become retroactive to 1 January 1983. Completion of the Retroactive Card will enable contributions made to the current plan in 1983 to receive the tax advantages and vesting provisions of the new plan.

The effective date of the Thrift and Savings Plan is 1 October 1983. Employees are encouraged to contact the Benefits office, extension 2288 or 2502, with any questions concerning the Savings Plan.

HEALTH NET INFORMATION

Health Net Identification cards and Member Handbooks have now been mailed to those employees whose Health Net coverage started 1 June 1983. New employees who selected Health Net medical plan coverage will normally receive their materials within 8-10 weeks from their date of hire.

Identification cards are to be used when requesting medical care, both at the clinic and in an emergency situation. Members should be aware that it is important to contact their Participating Medical Group no later than 48 hours after an emergency occurs. This information, along with other important provisions, is available in the Member Handbook. Health Net members are encouraged to read carefully through the Member Handbook. The terms and conditions of health care coverage under the Health Net Plan are covered in detail. An understanding of the way Health Net operates will help plan members obtain the greatest benefit from this program.

The Prescription Drug Plan (PCS) provides a separate plastic identification card. This card may be presented at any participating PCS pharmacy in order to obtain prescriptions by paying only the \$2.00 deductible. The plastic PCS card will take two to three months after enrollment to be delivered to Health Net Members. The paper Health Net Identification does not provide prescription coverage. Plan members who need to have a prescription filled prior to receiving the PCS card should contact the SBRC Benefits office for special claim forms.

Health Net Coordinators are available to answer questions, resolve patient care problems, and help members better understand their coverage. These coordinators are located at the Santa Barbara Medical Foundation Clinic and may be reached by telephone at 964-6211, extension 378. In addition, all employees may contact the SBRC Benefits office at extension 2288 or 2502 with any questions concerning health care coverage.

The Benefits office also has Health Net Membership Change Forms available. These forms must be used by Health Net Plan members only to add new dependents, delete dependents, and to change names or addresses. Newly acquired dependents must be added within 60 days after birth, adoption, or marriage. For additional information, members should refer to page 8 in the Member Handbook.

BUSINESS ROTATORS LUNCHEON

Another "class" of Business Rotators was honored at a recent graduation luncheon. The graduates, who include Jim DeBeau (Environmental Health and Safety), Lisa Luciano (Procurement), Sharon Maley (Domestic Contracts) and Terry Taylor (Financial Planning and Budgets), were joined by Dr. Talley along with the four rotational area managers and our new class of rotators in a celebration of a job well done. We wish them good luck and continued success.

CONGRATULATIONS!



The luncheon gives managers and rotators a chance to get to know one another. Here Dr. Talley and Jarcelyn Harris (new rotator) are doing just that!



The luncheon was also a great opportunity for graduates and new rotators to get acquainted. Clay Clemmons (new rotator) shares his expectations as Terry Taylor (graduate) looks on.



MESA PARTICIPATION

Santa Barbara High School graduate Alicia Gutierrez, a summer employee at SBRC, will begin computer science classes this fall in UCSB's College of Engineering. Alicia has been a member of the Mathematics, Engineering Science Achievement (MESA) program since the 9th grade. The MESA program assists high school minority youth in following a mathematics-based curriculum and in selecting which pre-engineering classes to take to prepare themselves for an engineering major in college.

SBRC's efforts in the MESA program were recently honored by the bestowal of a plaque from UCSB's College of Engineering. The plaque is now on display in the B-1 lobby.

Good luck to Alicia who is now ready to embark on her academic studies.

AFFIRMATIVE ACTION AWARD

SBRC received an award from the Candelaria Native American Indian Council (CNAIC) at the Holiday Inn in Ventura on August 19, 1983.

The award honors SBRC's Affirmative Action Outreach Program - its efforts in the recruitment and placement of native American Indians in private industry, as well as on-the-job training provided to the CNAIC staff.

Senator Gary Hart, Assemblyman Jack O'Connell, Assemblyman Tom McClintock and other notables attended.

The Affirmative Action Outreach Program deserves to be complimented for the effort that brought this recognition to SBRC.

Savings Plan Values as of 30 June, 1983:

EQUITY: 2.7308444

FIXED: 2.3947403

A-6E/B-52 COMPLETION

A number of significant goals have been achieved in the A-6E/B-52 program.

One goal achieved was the July completion of 117 detectors and harness assemblies for use on Navy carrier-based A-6E aircraft. The largest production run completed in the history of the program, the task was achieved on schedule and under budget. Also achieved were continuation contracts for more detectors and harnesses, the beginning of a new contract to build two new acceptance test sets and the announcement by HAC of the resumption of spare production detectors for the B-52 program.

The B-52 program, after which the A-6E program was modeled, was the first FLIR (Forward-Looking Infrared) production program at SBRC; it produced detectors for Hughes Aircraft Company and the Air Force for use on B-52 bombers. Since termination of production seven years ago, SBRC has been conducting "depot-repair activity" for units originally built at SBRC. The request for resumption of production of these units has been a surprise as well as a compliment to the quality of SBRC's product.

Congratulations to the many hard-working SBRC employees who have helped contribute to the success of these programs over the years.

CI PROGRAM EXCEEDS GOALS

Good news! Congratulations are in order to all 1983 Cost Improvement Program (CIP) participants. Due to the great amount of employee participation in the CI program we have already exceeded SBRC's 1983 Cost Savings Goal of \$1,250,000.00 by \$536,743.79.

CIP recipients for the month of June were Karen Kohler (Manufacturing-Material), Bobby Thompson (Manufacturing-Material), Heather Fraser (Manufacturing-Assembly) and Mark Wohlwend (Manufacturing-Manufacturing Engineering).

Also, for the first half of 1983, 108 PIPs have already been submitted. Congratulations to PI recipients for June goes to Dave Voss (Manufacturing-Manufacturing Engineering), Stephen Thomas (EOI), Julie Davidson (PA), Sue Brown (IRC), Denny Bogner (Manufacturing-Operations), Tim Kass (SIRS), Genny Meinert (Manufacturing-Facilities), Jeff Mora (Manufacturing-Material), Tony Gilbert (Manufacturing-Material), Gabe Tabyanan (Manufacturing-Material).

1983 GO CLUB COMMITTEE



Left to right: (back row) Art Brown, Jack Prince, Alice Jauregui (Secretary), Greg Kennedy and Joe Byrd.

Left to right: (front row) Theresa Gonzalez, Pattie Richards (Chairperson), Dottie McKiddie (Advisor), and Elaine Welt (Vice-Chairperson).

Absent Members: Douglas Fraser, Peter King, Nils Lindman, George Miles.

Alternates: Joanne Sawyer, James Avey, Janet Fleming, and Sheila Kamhi.

SBRC GO CLUB GOAL 1983

65%
PARTICIPATION

PLEASE HELP US
MEET THIS GOAL

GO CLUB RECIPIENTS FOR 1983

Access Theatre	1,000
American Lung Association	1,000
American Lupus Society	500
Blue Jackets Teenage Club	500
Combined Health Agencies Drive (CHAD)	2,400
American Diabetes Assn.	
American Heart Assn.	
Arthritis Foundation	
Cystic Fibrosis Foundation	
Easter Seal Society	
Leukemia Society of America	
Nat'l Assn. for Sickle Cell Anemia	
Nat'l Kidney Foundation	
Nat'l Multiple Sclerosis Society	
Santa Barbara Mental Health Assn.	
Society to Prevent Blindness	
United Cerebral Palsy	
Community Resources Information Service (CRIS)	500
Council of Christmas Cheer	1,000
Food Bank of Santa Barbara County	1,000
Goleta Boys Club	175
Isla Vista Youth Project	1,500
Jessie Hopkins Hinchee Foundation	1,600
Klein Bottle	2,000
National Council on Alcoholism	600
New House	500
PARENTS OF GATE	2,000
PTA Creative Arts Co-op Scholarship	250
Santa Barbara Educational Clinic Scholarship Committee	500
Santa Barbara Humane Society	800
Santa Barbara Rape Crisis Center	1,000
Santa Barbara Young Men's Christian Association	2,000
Shelter Services for Women	25
Special Olympics	1,000
Villa Majella, Inc.	500
Work Training Program	1,000

The GO Club committee would like to express their appreciation for all the special assistance, support and patience given to us by the Publications people, the photographers and all those who have helped to put out this newsletter. We would also like to give our thanks to all of you who are contributing to make the GO Club a success.

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Special Edition

October 1983

EMPLOYEES GIVE ONCE CLUB



SBRC GO CLUB
MEMBERSHIP DRIVE
FALL 1983

GO CLUB DRIVE KICKOFF
by GO Club Committee

This special edition of the SBRC News is dedicated to informing all employees of the nature, function and goals of our GO Club. In concert with Hughes Aircraft Company, SBRC is sponsoring a special membership drive from 17 to 31 October 1983. Our goal is simply to increase participation to the maximum extent possible and thereby, the amount of money available for donation to worthy community and human service organizations.

Many employees - nearly one-third - are now enrolled in the program. As you read the following articles, we are sure you will see why. The GO Club is dedicated to the efficient delivery of badly-needed funds to those organizations found most in need of support. These organizations are designated by the GO Club Committee, a board composed of concerned employees who represent all contributors in evaluating how monies raised should be spent (see this page for an article describing how committee members are selected.)

We are sure that many current GO Club participants are aware of the many good uses to which employee contributions have been put in the past, but we would like especially for those not now enrolled in the program to read the following articles and consider joining the GO Club this month. For those current members of the GO Club, we hope we have presented here some facts and ideas that will encourage your continuing support and a regular review of your level of contribution.

You will be hearing a lot more about the special October '83 GO Club drive, but we encourage you at this time to evaluate this outstanding program to see how individuals can really make a difference in their own community.

WHERE DOES THE MONEY GO?
Art Brown

Ever wonder what goes on within that curious little organization called the GO (Give Once) Club? You might be surprised. They have to give away a lot of money - over \$40,000, in fact. But to whom? There's no shortage of organizations seeking the money. The requests pour in. As if by magic, the current chairperson's name gets known in the social service community and the entreaties start arriving. This organization needs money to help the handicapped; that organization needs money to buy new uniforms; the Boy's Club needs money to resurface the gym floor; a soup kitchen needs a new stove. On

and on it goes. But, how are such requests handled?

The first thing that becomes apparent is that there is a bewildering array of social service agencies in the greater Santa Barbara County area. The Community Service Directory, published by the City of Santa Barbara and covering the tri-counties (Santa Barbara, Ventura, and San Luis Obispo), is over 1/2" thick, 8-1/2"x11", with about six listings per page. Some say in our society nobody cares anymore. Looking through the Community Service Directory might suggest otherwise. There are hundreds upon hundreds of organizations in our area helping people improve the quality of their lives. People do care! But how effective are these agencies? How much do they actually deliver to those in need? Every conceivable organization seems to exist to help out in any contingency, but are they successful? Who gets SBRC's money and who doesn't? The GO Club Committee has to make decisions on one organization after another. Is the organization really providing a worthwhile community service? Is it well-funded already? Does it only seem to serve a narrow, special-interest clientele? Is it political rather than a human service organization? These are difficult questions to answer, and an organization is granted funds by majority vote at the once-a-month GO Club meeting.

Recommendations or requests from contributing employees are given the highest priority by the committee when making funding decisions. It is, after all, the employees' money and their input is both needed and appreciated.

SHOULD YOU BE A GO CLUB COMMITTEE MEMBER?
by John Prince

Why not add to the satisfaction of giving by becoming a member of the Go Club Committee? You will represent your fellow workers in reviewing requests for aid and in voting on the disbursement of contributed funds. Each major organization or Product Line may have up to three committee members elected by vote of the GO Club members in that organization on the basis of one committee member for each fifty employees. Officers of the GO Club are elected by the committee from among its members. The committee normally meets once a month during working hours. You must be a member of the GO Club to serve as a committee member. The election for the 1984 GO Club Committee will be held later this year, so sign up now - you'll have a lot of fun as well as helping your community!

To: GO CLUB COMMITTEE B5 M/S 10

I am interested in becoming a candidate for membership on the 1984 GO Club Committee.

Name _____

S/C _____ Telephone _____

Organization/Product Line _____

A drawing will occur which will include current GO-Club members plus those who signed up during the GO-Club campaign 17-31 October 1983. Several prizes will be given. Watch for further announcements on the drawing.

WHAT THE COMPANY IS DOING
by Jim Weston

Corporations have social and community responsibilities. What does this mean and how does it affect SBRC?

Employees and employers are different today than they were 10 years ago. Employees today rightfully expect, from their employers, respect and fair, impartial treatment. Employees want recognition for a job well done and they want to achieve a sense of satisfaction about the work they do. Employees are more concerned about their fellow citizens in the community and so organizations like SBRC's GO Club are formed.

Employers also look at things a little differently today. The impact that large employers can have on a community is of greater concern to management. Employees have children in schools and children and friends who are handicapped. Employees pay taxes and buy consumer goods from local retailers. What does this have to do with SBRC's social and community responsibilities?

SBRC is very active in our community. SBRC works in all our behalf with organizations that affect the education of our children, the training and treatment of the disabled, the protection of the consumer, as well as the tax burden we all carry. In Santa Barbara and Santa Maria, SBRC is a member of several organizations such as the

Employer's Advisory Group, the Industrial Education Council, the Private Industry Council, the Santa Barbara Industrial Association, the Career Guidance Institute, the Better Business Bureau, Work, Inc., and the Santa Barbara County Tax Payers Association.

SBRC works closely with Santa Barbara, Goleta, Lompoc, and Santa Maria area educators from the various elementary schools up through SBCC, Allan Hancock, and UCSB, to assist those institutions in establishing curriculum and standards which will best prepare our children for the "world of work". The educators want to know what qualifications their students will require in order to be able to get jobs after high school, vocational school, or college. Education and industry working together assures a better education for our children. SBRC has long known of this "community responsibility" and has for some time actively participated with these organizations.

The handicapped and disabled people in our community offer SBRC a tremendous opportunity to help. SBRC has been with Work, Inc., for many years. Work, Inc., provides vocational training and placement services for the mentally and/or physically handicapped. SBRC assists Work, Inc., and other similar organizations, in developing programs to provide quality rehabilitation and training to help less fortunate people achieve productive, satisfying employment in our community.

SBRC has had a representative as a director of Santa Barbara's Better Business Bureau for over 10 years. SBRC's active participation with the Better Business Bureau helps everyone in the community by policing retailers who may not be dealing fairly with the consumer.

At this point, you may ask "How has SBRC helped the community members with their tax burden?" SBRC is also an active participant in the Santa Barbara County Tax Payers Association. The organization, with SBRC's help, is a "watch dog" to hold down unnecessary and unneeded tax increases.

As you can imagine, large employers would be doing the community, as well as its employees, a big disservice if they ignored their social and community responsibilities and just "took" from the community without "giving" in return. SBRC is now a large and respected employer in the community. The "respect" part comes from SBRC management's commitment to its employees and to the community in which we live. "We have kids too," kind of sums up where SBRC is coming from regarding this employer's fulfillment of its social and community responsibilities.

HANDICAPPED AWARENESS TRAINING

Members of IRC management received a handicapped awareness briefing from State Rehabilitation Counselor Steve Conti on September 22. The session, coordinated by the Affirmative Action office, was designed to increase managerial awareness and sensitivity in the employment of partially disabled or handicapped employees. Such sessions are part of an on-going effort by SBRC to respond to its obligations under the Rehabilitation Act.

ADOPT-A-SCHOOL

Executives from SBRC recently met with Dick Prigge, Jim Lombard, and Mel Cokeley from Dos Pueblos High School (DPHS), located near our Goleta facilities. As part of an exciting new program called "Adopt-A-School," SBRC has adopted Dos Pueblos High School. Through this program, SBRC and other companies on the South Coast will help with the education of our young people in mathematics, science, and computers. Some of the activities which will result from the Adopt-A-School program include:

- (1) Tours and get acquainted meetings will be arranged at SBRC for Dos Pueblos High School faculty.
- (2) Familiarization presentations on computer activities at SBRC will be given to Dos Pueblos faculty.
- (3) SBRC computer facilities will be made available to faculty and selected students from Dos Pueblos after working hours, to help students develop computer competency beyond the capabilities of the school equipment.
- (4) Dos Pueblos, faculty and selected students will be attending applicable educational programs offered by SBRC in our extensive Evening Study Program.
- (5) Special assistance will be provided as needed by the school through speakers, resource consultants, and perhaps through the contribution of equipment and materials which have been identified as surplus by SBRC.
- (6) An SBRC scholarship will be awarded annually to an outstanding student in math, science, or computer science.

The Adopt-A-School program is a mutually beneficial arrangement. Dos Pueblos is now helping our Training Department with one of our courses. This fall an Evening Study Program course is scheduled for secretaries to help them increase their shorthand speed. Dos Pueblos has arranged for SBRC students to use their tape play-back equipment in order to practice for this course.

It is expected that there will be considerable interaction in the future between employees of SBRC and faculty and students at Dos Pueblos. Already a number of employees have volunteered to work with DPHS on their own time. Jack Reith, of SBRC's Training Department, says, "This is a program that really 'grabs you.' Already we feel we are involved in the education of our young people here in Goleta. The person-to-person relationship which is developing with Dick Prigge and his staff is very motivational. It seems that the more we talk together about it, the more ways we find we can work together."

B3 RAMP



SIRS mascot "Teddy", with a little help from friends, performed the ritual ribbon cutting as a group of very happy SBRC employees celebrated the completion of a new ramp at B3's north entrance on August 25, 1983. Primary users of the entrance, the SIRS Calibration/Maintenance group and employees working in the mailroom, no longer need to lift equipment or mailcarts up steps to enter B3.

The long needed ramp was installed after its approval as a CIP idea submitted by Glenn Griffin and Lucy Luciano.



A SUBSIDIARY OF
HUGHES AIRCRAFT

NOVEMBER 1983

SBRC'S WARREN NICHOLS RECEIVES TWO HIGH HONORS FOR SPACE WORK



Warren D. Nichols, a vice president of Santa Barbara Research Center, has been doubly honored with high-level commendations from two space organizations for his contributions to the nation's space program.

On October 4, the American Astronautical Society (AAS) presented Mr. Nichols with its W. Randolph Lovelace II Award, given to individuals who have made significant contributions to space science and technology. On October 25, he received the National Aeronautics and Space Administration's Distinguished Public Service Medal, presented annually to individuals who "measurably improve" the mission of NASA.

Specifically mentioned in both awards was Mr. Nichols's direction of the Thematic Mapper program, which produced the highly successful Earth resources instrument that was launched last year aboard NASA's Landsat-4 spacecraft. The Thematic Mapper, which "sees" in several visible and infrared spectral bands, is already credited with helping to provide a better understanding of the Earth's mineral resources, vegetation cover, agricultural production and land use.

The AAS commendation, noting that Nichols has been a consultant on infrared space system

technology to high levels of government and industry, cites his work on a number of advanced space systems and remote-sensing optical instruments. It mentions his contributions to the Surveyor lunar lander system and the first Applications Technology Satellite, in addition to the Thematic Mapper, which it calls "the world's most advanced multispectral earth resource sensing instrument."

The NASA award goes even further, praising Nichols's "engineering acumen and management skills," which enabled the Thematic Mapper program to meet milestones, perform within cost and "maintain technical excellence of the highest order." Crediting the instrument with providing data exceeding the expectations of the scientific community, the space agency said that it is expected to establish "a standard which may never be improved on in any future optically scanning instrument."

Mr. Nichols has also recently been reappointed to the Civil Operational Remote Sensing Satellite Advisory Committee (formerly the Land Remote Sensing Satellite Advisory Committee) for a two-year term. This appointment was made by Malcolm Baldrige, U.S. Secretary of Commerce.

Nichols, who has been with SBRC and Hughes Aircraft Company for 30 years, moved to SBRC in 1979 and was made a vice president two years later. He attended UCLA electrical engineering school, and is a registered professional engineer, EE, in California.



HAPPY THANKSGIVING

EXCEPTIONAL MONTH FOR
PI PROGRAM

GOOD NEWS! SBRC's total CIP savings to date this year is \$1,786,743.79!

Thirty-five PIs were approved during the month of July. This number of PIs is outstanding and congratulations are in order to all participants for their enthusiastic support in the program. All employees who submitted an approved PI during July received a complimentary Santa Barbara sun visor.

PIP recipients for the month of July were: Bruce Laina, Charles Hamza, Betty Sousa, Alice Westrip, Margaret Fiechter, William Williamson, Salvador Gonzalez, and Gilbert Frazier (Manufacturing Assembly); Jacqueline Bottorff, Stewart Chan, and Anne Winn (Manufacturing-Materiel); David Moine and Joseph Humphrey (Manufacturing-Manufacturing Engineering); Kelly Powers and Karoline Wieggers (IR Components); Peter Du Brule, Steven Sorensen, Thomas Gross, and Stephen Thomas (EOI); Jacqueline Wheeler, Lyn Shiroma, Sherry Smith, Chris Mangini, Brinn McKone, Sheryl Rosness, and Terry Taylor (Human Resources); Luci Luciano, Betty Palato, Shelley Scott, Diane Lopez, and Charles Stiefes (Product Assurance); Hugh Marsh (Publications); Joseph Selman, and Jean Ring (Manufacturing Operations); Russell Mack (Manufacturing-Facilities); Glen Griffin (SIRS); Sharon Maley (Contracts; and Gary Lieber (Information Systems).

Congratulations to all and keep those ideas coming!

LANDSAT DOCUMENT
COMPLETED

SBRC's Photo Services Department recently completed "Landsat: Cycle of Progress", an 18-minute videotape documentary tracing the development of NASA's Landsat program. Summarizing the history of remote sensing, this comprehensive program notes the importance of NASA's Mercury, Gemini and Apollo programs in establishing the requirements for an Earth Resources satellite. The videotape also gives credit to SBRC's pioneering efforts in building the Multispectral Scanner that was launched aboard Landsat 1, and the scientific developments that led to the Thematic Mapper on Landsat 4. The use of future remote sensing instruments, including SBRC's Multilinear Array, are also discussed.

"Landsat: Cycle of Progress" was produced as part of the Landsat Short Course recently presented by EOI's Dr. Carl Schueler at UCSB and co-sponsored by SBRC, the National Oceanic and Atmospheric Administration and UCSB Extension.

"Landsat: Cycle of Progress" is now available for general viewing on short-term loans from Photo Services. Call extension 4486 to reserve the program.

SBRC SOFTBALL LEAGUE

Congratulations to SBRC's league champions, the Loaded Bases, who defeated runner-up team Dr. Bob's Best in a best of three games series by scores of 2-3, 6-1, and 4-0. The two teams had played midseason, with the Loaded Bases winning that game also by a score of 7-3. The Loaded Bases, from Transportation, were coached by Jeff Mora. Players on the winning team included: Kevin Gunn, Jeff Deitz, Joe Ortega, Rick Ella, Tony Gilbert, Kelly Miele, Danny Gilbert, Bernie Parker, Rob Holmes, Frank Martinez, Marianne English, Kerrie Hanna, and Dave Campos.

Congratulations are also in order for the remaining teams in the league, whose enthusiastic participation helped make the softball season fun for everyone. Those teams, listed in order of their standing in the league, came from Publications and IRC (tied for third place); EOI and SIRS (tied for fourth place); Production Assembly (fifth place); and Array Fabrication (sixth place).

League commissioner Jim Eutsler looks forward to expanding team membership for the next challenging season.

TOASTMASTERS COME TO SBRC

"The ability to speak well is to a man what cutting and polishing are to the rough diamond. The grinding does not add anything to the diamond. It merely reveals its wealth." These words of Orison Marden best depict the goal of Toastmaster International. In response to numerous requests, SBRC will sponsor a Club on-site. An organizational meeting has been scheduled for . . .

NOVEMBER 10TH
4:00 PM

B1/Main Conference Rm (Q814)
Bring a friend or two or three!!

CLASS OF 1985—
ENGINEERING ROTATORS



Under the leadership of Cathy Sarver in Employment, a number of outstanding young college graduates are chosen each year to enter SBRC's Engineering Rotation program. Each rotator spends six months in one of four assignments for a total of two years of varying experience in different areas of SBRC. Entering this past July were Marilou Delos Santos, Darrell Gray, and Rob Leighty (pictured above) from Cal Poly in San Luis Obispo, and Katherine Dowling, David Kloos, Maggie McMillan, and Dan Miley from the University of California at Santa Barbara. These seven engineers are currently assigned to EOI, SIRS, IRC, Microelectronics Manufacturing Engineering, and Technical Systems Operations.

This is the second year of the Engineering Rotation program. Six engineers who graduated from college a year ago have completed two of their six-month assignments and are now into their third. These rotators, who will graduate as the Class of 1984, are Alan Trager, Andy Finch, Dan Gilfry, Jim McDonald, Tom McWaid, and Bill Cushman.

Rob Leighty, who is working in a special project under Rolph Keehn's leadership, says "The Rotator Program provides a special opportunity to determine a permanent position most beneficial to SBRC and the individual. My first assignment is an independent study project in the SIRS Missile Fuze Lab. My supervisors and the surrounding personnel have made the school-to-work transition comfortable and the project itself is very motivating."

Overall management of the program rests with Dr. Fletcher Phillips, Director of Engineering, and Jack Reith, Head of Personnel Development. However, the real "directors" of the program are all the managers and supervisors throughout SBRC who make the six-month assignments so challenging to the rotators and, at the same time, beneficial to SBRC.

CORRECTION TO AUGUST ARTICLE

J.D. Moore writes to correct some of the information given in the article "SBRC Patent and License Advice" of the August 1983 newsletter. Mr. Moore is not responsible for the Hughes Research Laboratory. He is, however, the primary contact at SBRC for the Hughes Patent and Licensing Department. Our apologies to Mr. Moore for the erroneous information.

HUGHES MEDICAL
PLAN CHANGES

A change in the Hughes Medical Plan offers increased reimbursement for employees and dependents covered by the plan. For charges incurred on or after 1 July 1983, benefit payments for x-ray and laboratory examinations obtained through out-patient services have been increased from 80% to 100% of reasonable and customary charges. Because these services tend to be more expensive when provided to in-patients, and because such in-patient services often result in additional charges for hospital room and board, it is hoped that this benefit improvement will encourage eligible employees to obtain these services as out-patients. Your cooperation in this area will greatly assist the company in its ongoing efforts to reduce the alarming rate of increase in health care costs.

Savings Plan values as of July 31, 1983:

Equity: 2.604464 Fixed: 2.4171666

Savings Plan values as of August 1983:

Equity: 2.5596767 Fixed: 2.4363441

Savings Plan values as of September 1983:

Equity: 2.609134847 Fixed: 2.455401291

The SBRC News - published in the interest of the employees of
SANTA BARBARA RESEARCH CENTER

Editor - Tom Ball
Writers - Ellen Masthoff, Rich Jensen

—STAFF—

Greg Krueger - Anita Metcalf - Judy Rys
Tom Sullivan - Steve Walker - Advisor Ed Ward

SERVICE PIN AWARDS

The following SBRC employees received pins during the months of September and October:

SEPTEMBER 1983 5-YEAR PINS

Vernon K. Anderson Telecommunications Operator, Sr. Information Systems	Pierce F. Clarke Mfg. Engineer III Manufacturing
Linda L. Padgett MTS. Chem IR Components	Robert E. Mudge Supervisor Production Control 2 Manufacturing
Thomas Reynolds II Lab Assistant, Sr. SIRS Business Area	Julie A. Johnston Prod. Control Coord. 2 Manufacturing
Ronald D. Lewis Research Asst. A SIRS Business Area	Thomas G. Thiele Utility Worker A Manufacturing

10-YEAR PINS

Maria M. Martinez Adm. Clerk, Sr. IR Components	Joseph D. Cardona Supervisor Prod. I Manufacturing
Hortencia Sanchez Prod. Tec. "B" EOI Business Area	

15-YEAR PINS

Donald G. Skvarna Manager, Program IR Components	Joseph W. Jackson Utility Worker, Sr. Manufacturing
Roy W. Gaither Lab Assistant, Sr. EOI Business Area	William L. Knecht Head Product Assurance Product Assurance

30-YEAR PINS

Warren D. Nichols Vice President Corporate
--

OCTOBER 1983 5-YEAR PINS

Quyen C. Wilcox Accounting Assistant Administration	Melody R. Acres Administrative Clerk A Manufacturing
Karl A. Harris Staff Engineer IR Components	David A. Campos Stores Clerk Manufacturing
Tina M. Reigle Lab Assistant, Sr. IR Components	Rosalies M. Vergara Assembler, Sr. Manufacturing
Allen R. Coppes supervisor, Technical IR Components	Peter J. Honor Developmental Specialist Manufacturing
Gregory A. Johnson Research Assistant "A" IR Components	David G. Voss Supervisor Tool Engr. Manufacturing

Roderic L. Osgood Member of Tech. Staff, Physics IR Components	Salvatore Abate Supervisor Prod. Control Manufacturing
Jeanne Solis Secretary IR Components	Larry E. Cobb Member of Tech. Staff, Mec. Manufacturing
Donald B. Randles Planning and Control Adm. SIRS	Ramona C. Hanna Transportation/Equipment Operator "B" Manufacturing
Gary A. Whitehair Research Assistant "B" IR Components	Lucille H. Johnson Technical Inspector "B" Product Assurance
Vernon W. Alferd Member of Tech. Staff, Electronics SIRS	Dianne R. Bushman Quality Tech. Assistant "B" Product Assurance
Charles D. McKenney Developmental Designer SIRS Business Area	Evelyn H. King Quality Data Analyst, Sr. Product Assurance
Michael C. Lobenberg Member of Tech. Staff, Elc. SIRS Business Area	Jefferson L. Korpela Developmental Engr., Chm. Product Assurance
John D. Bouregy Process Engineer I Manufacturing	John J. Strathern Quality Assurance Eng. II Product Assurance

10-YEAR PINS

Ralph H. Pendelton Vacuum Tech. Chief SIRS Business Area	Jean L. Ring Systems & Procd. Analyst Manufacturing
Melinda D. Torres Production Technician A Manufacturing	

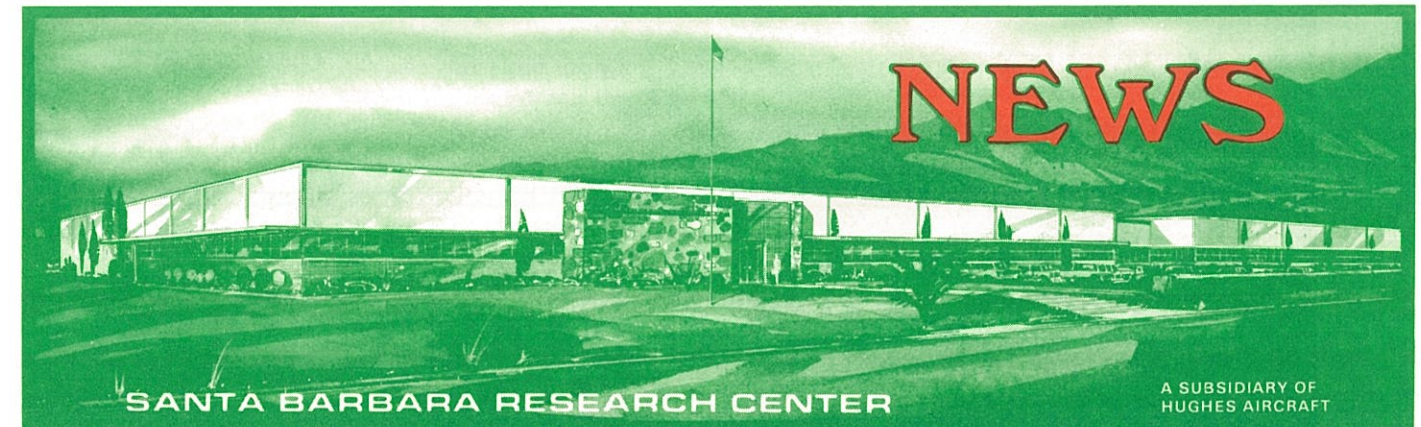
15-YEAR PINS

Richard G. Martinez Marketing Representative SIRS Business Area	Dorothy L. Willis Production Technician A Manufacturing
Rose M. Adair Technical Assistant "A" SIRS Business Area	

20-YEAR PINS

Willard M. Peffley Member of Tech. Staff, Systems Product Assurance
--

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Tom Sullivan - Steve Walker - Advisor Ed Ward



December 1983

MERRY CHRISTMAS

SEASONS GREETINGS!

I would like to extend best wishes for a happy holiday season to all of you and your families. The year of 1983 has been a good year for our company and a busy one for all of us. Your interest, endeavor and participation in our progress is appreciated. May the new year bring peace and happiness to the world.

Robert M. Talley

THE JOY OF GIVING

The annual Christmas Tree Project offers the opportunity to share blessings with the less fortunate.

Colorful boxes will be placed under the Christmas trees located throughout SBRC facilities. Donations of usable toys and packaged or canned foods may be placed in these boxes.

Your donation will go to the Council of Christmas Cheer, which provides food and toys to needy families at Christmas time.



LIFESAVER MEDICAL RECORD

A plastic, laminated card may save 18-year old Kari Johnson's life one day. Kari's essential medical information and an EKG 12-lead strip can be read from two microfilm strips on the card.

The survivor of two open-heart surgeries, at ages 4 and 9, Kari has lived with the insecurity of not knowing whether she could convey vital information to medical personnel in an emergency. Now that she carries her Lifesaver Medical Record with her, Kari and her parents, Eric and Dee Johnson, can relax, knowing that her medical records, insurance information, emergency treatment and surgery authorization are available to doctors in minutes, even seconds, in an emergency.

Eric Johnson, an SBRC employee in the Publications Department, informed us that Kari has been interviewed on CNN, Cable Network News program, and her story has been filmed at the Baldwin Emergency Medical Center in Los Angeles.

LOOKING AHEAD

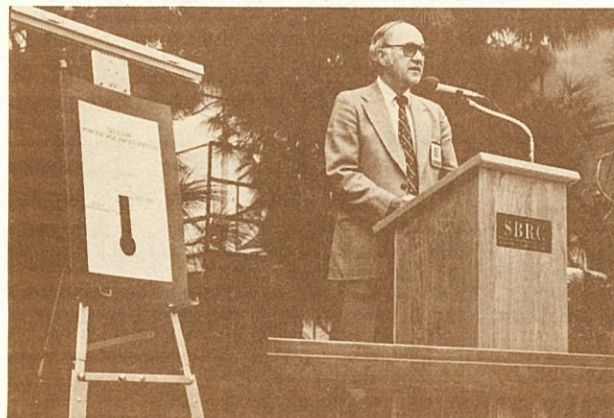
Training and Development will be hosting another "Educational Opportunity Day" on....

December 7th
11:00 - 2:00 p.m.

B1/Main Conference Room

Take advantage of this exchange to familiarize yourself with what's ahead for 1984. Representatives from the following schools have already reserved space: UCSB Extension, USC, Redlands, Golden Gate, UCSB-Engineering, Santa Barbara City College, Alan Hancock, and Cal-Poly San Luis Obispo. See you there!

SBRC GO CLUB DRIVE



SBRC Management would like to express their appreciation and thanks to SBRC employees for your cooperation during the recent Give Once (GO) Club Drive. Your involvement was instrumental in raising our participation level from 32% to 63%.



A special plaque was presented to Malcolm McNeil, Director, Information Systems, to honor the organization with the highest participation level (85%) at the completion of the GO Club Drive. The plaque will be re-awarded each year with the name of the winning organization on the plaque.

Major organizations and their participation levels at the completion of the GO Club Drive, 31 October 1983 are:

Corporate Staff	85%
Administration	62%
Information Systems	85%
IRC	67%
EOI	75%
SIRS	61%
Manufacturing	58%
Product Assurance	51%

Manufacturing completed the drive with exceptional participation levels:

Materiel	81%
Manufacturing Engineering	81%
Microelectronics Manuf.	72%

Winners of the GO Club drawing on 7 November 1983 were:

3—\$100 Savings Bonds	Holman Eklund (EOI) Ronald Risser (IRC) Peter Staffers (Mfg)
1—Clock Radio	Putnam Fairbanks (Mfg)
1—Digital Desk Clock	Stella Kimberely (Mfg)
3—Dinners for Two at the Philadelphia House	David Campos (Mfg) Nancy Ella (Info. Syst.) Eric Johnson (Mfg)
2—Dinners for Two at the Talk of the Town	GO CLUB Canvassers Mary Schoepke (Mfg) Ruth Avila (Corp. Mktg.)

The GO Club is one way the employees of Santa Barbara Research Center can provide financial support to the needy in the local community in which they live and work.

Employees may now choose the recipient(s) of their contributions. They may elect to have their entire individual contribution made directly to United Way, CHAD (Combined Health Agencies Drive), or anyone of the specific approved organizations listed by the GO Club Committee. Listed are a few of the charitable organizations SBRC employees chose to support:

United Way (all agencies)
CHAD
SBRC GO Club
American Cancer Society
Boys Club of Goleta
Meals on Wheels
Mental Health Association
Salvation Army
American Diabetes Association
American Heart Association
CALM (Child Abuse Listening Mediation)

A special thanks to all SBRC employees for making this GO Club Drive so successful.



S.O.S



The SBRC NEWS is your newspaper! We need articles and your information to keep the newspaper coming regularly. Please help us make the SBRC NEWS a vital communication tool by supplying us with information of general interest from your work area. A collection representative from each business area will be established in the near future. Articles will be submitted to each representative by the fourteenth of each month. All Human Resources Department articles will be submitted to Dottie McKiddie, B5, M/S 10, extension 2600.

SIRS INSTRUMENTATION



"On schedule and under budget"—the words everybody likes to hear, were applied enthusiastically by Program Manager Wayne Speth to the work done by the Instrumentation group of SIRS Business Area this month. Under the leadership of Project Engineer Mark Sutton, the group successfully fulfilled the firm fixed-price contract to design, procure materials, construct, verify performance, and deliver two Common Module Final Test Sets to the Sacramento Army Depot for Forward-Looking Infrared Devices. Delivery of these test sets capped the efforts begun 12 months

ago when SBRC won the test set contract in a three-way competitive bid.

Mark Sutton attributes the great success of this program to the hard work and professionalism of the individuals involved, including Ed McGinnis, Ben Lum, Lucille Johnson, Linda Burns, Alex Zasidatel, Estella Juarez, and Jay Folkes, Mary Denton, and Charles McKinney and their groups. "These people did an outstanding job and should be very proud of their accomplishments," added Wayne Speth.

The final test sets delivered to Sacramento will provide the US Army with the capability for evaluation and performance verification of Common Module Detector/Dewars removed from the field for assessment or repair. According to Sutton, use of the computer controlled system is basically simple and may be done by minimally experienced operators. Mark Sutton recently returned from Sacramento where he installed the test equipment and trained operators in use of both hardware and software components of the system.

Contract customers have exercised an option for a third test set to be delivered to Fort Belvoir, Virginia on a contracted date in February 1984. However, with the Instrumentation group well under budget and schedule for the option, the unit is expected to be delivered before Christmas 1983.

A GIFT FOR YOU



With best wishes from the SBRC management, we hope you will enjoy a delicious Norbest turkey or Dubuque ham for your Christmas day. Given out with the paychecks on December 9, the certificates are good from December 10, 1983 through January 31, 1984. Have a happy holiday season!



ENVIRONMENTAL HEALTH & SAFETY



John Meagher

foreseeable possible emergencies—from fire or earthquake to chemical spills inside or adjacent to our facilities. Fire Prevention conducts frequent liaison with Santa Barbara County Fire Department officials and provides familiarization tours of our facilities for firefighters, so that effective planning will result in efficient emergency response. Guaranteeing the immediate availability of hazardous materials data is also a key element of this program and the SBRC Hazardous Materials Guide helps to serve this function. EH&S emergency response capability is augmented by maintenance of the Emergency Response Vehicle (ERV) which is equipped with chemical spill kits, self-contained breathing apparatus, fire extinguishers, rescue equipment, and hazardous materials data. EH&S is also linked by radio to Security and Plant Services upon activation of Industrial Defense emergency procedures. The SBRC Industrial Defense Plan assigns many key responsibilities to EH&S in planning and emergency response, from facility inspections to emergency medical care.

CIP/PI PROGRAMS EXCEL

CIP Cost savings to date for 1983 are \$1,820,928.00 exceeding our goal by over \$570,000.00!!

CIP recipients for September were Alicia Moriarty (Human Resources), Kenneth Johnson (Mfg-Assembly), Vaughn Hardman (Materiel), Steven Tighe (Mfg-Assembly), Van Eakes (Materiel), Linda Tyler (Materiel), Bob Ledbetter (SIRS), Lloyd O'Connell (SIRS), Gustave Schaeffer (SIRS), Bobby Thompson (Mfg-Operations), Vicki Lewis (Materiel), John Treese (Mfg-Assembly), Grady Bell (Mfg-Mfg Engr),

Richard Nichols (Mfg-Mfg Engr), Harold Hill (Prod. Assurance), and Mary Theis (Materiel).

CIP recipients for October were Jeffrey Dillion (Product Assurance) and Mary Thompson (Product Assurance).

Thirty-three PI's were approved in September with 30 participants. The recipients were Anne Winn (Materiel), Leanna Bell (Mfg-Assembly), Leroy Kubel (EOI), Vicki Lewis (Materiel), Alicia Williford (Mfg-Operations), Terri Rivas (Mfg-Assembly), Bruce Laina (Mfg-Assembly), Juan Pico (Facilities), Rodney Lloyd (Mfg-Mfg Engr), Harold Hubler (Mfg-Mfg Engr), Betty Sousa (Mfg-Assembly), Maria Robinson (EOI), Luther Graham (Materiel), Wally Thompson (Facilities), Dorothy Willis (Mfg-Microelectronics), Kathy Macleod (Mfg-Mfg Engr), Dorothy Bennett (Materiel), Clara Fernandez (Materiel), Louise Johnson (Materiel), Pat Carlin (Finance), Greg Price (Finance), Kathy Ganas (Mfg-Operations), Tom Pawl (Mfg-Mfg Engr), Jim Camden (Mfg-Mfg Engr), George Lemire (Mfg-Operations), Frank Crowe (Mfg-Mfg Engr) and Roy Schrader (Facilities).

Twenty PI's were approved in October with 21 recipients: Russell Mack (Facilities), Cathy Sarver (Human Resources), Colleen Cox (Human Resources), Mike Limon (Mfg-Operations), Karen Trembly (IRC), John Konopak (Facilities), Victoria Rader (Materiel), Judith Krayk (Mfg-Operations), Clyde Barth (Materiel), Christine Baker (IRC), Howard Mainhart (Mfg-Mfg Engr), Linda Rose (Finance), Paul Carty (Mfg-Mfg Engr), Jane Bates (Mfg-Microelectronics), Peter King (IRC), Jesse Garcia (Product Assurance), Janice Yaeger (Mfg-Operations), Diane Salazar (IRC), Jim Lookabaugh (Mfg-Mfg Engr), Pat Carlin (Finance) and Phyllis Gordinier (EOI).

Congratulations and thanks to all and keep those ideas coming! They are appreciated!



LIFE INSURANCE COVERAGE IMPROVES

Improved company paid Basic Life insurance became effective 1 October 1983. Coverage under the new program now provides for a benefit of two times annual base salary. As an employee's salary increases, the amount of life insurance coverage will also increase automatically. This new Basic Life plan is a distinct improvement over the previous "scheduled" benefits that provided a maximum coverage of \$50,000.

An open enrollment period for Optional Life and Voluntary Accidental Death and Dismemberment (VAD&D) was held during the month of October. This allowed employees to select participation in these plans without providing the normally required medical evidence of insurability. The optional plans also have major changes in the coverage levels available. The effective date for these new programs is 31 December 1983.

Employees had the opportunity to enroll in Optional Life insurance with coverage of either one-half or one times annual base salary. As with the Basic Life insurance, salary increases will automatically increase the level of coverage under Optional Life. Premium cost for Optional Life will change at year end with new rates that vary by age. This cost structure is more competitive with rates of life insurance available elsewhere. Those employees who are enrolled in the current Optional Life plan should be aware that their Optional Life coverage will automatically become one times annual base salary unless an enrollment card indicating otherwise was submitted. Employees wishing coverage under this plan who are not currently enrolled may contact the Benefits office for information regarding medical evidence of insurability.

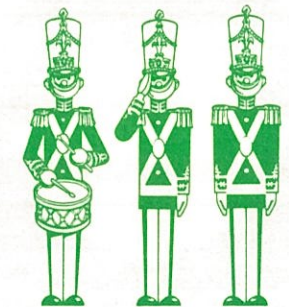
VAD&D plan improvements include higher maximum coverage, up to as much as \$500,000, and decreased premium amounts. VAD&D is designed to provide a benefit in the case of death as the result of an accident, as well as for specified serious injuries. Employees may cover themselves and eligible family members. Two coverage levels have been deleted from the new plan: \$10,000 and \$125,000. Coverage for those employees enrolled at these levels will automatically increase, on 31 December 1983, to \$25,000 and \$150,000, respectively.

Employees are encouraged to contact the Benefits office at extension 2288 or 2502 with any questions concerning these plans.

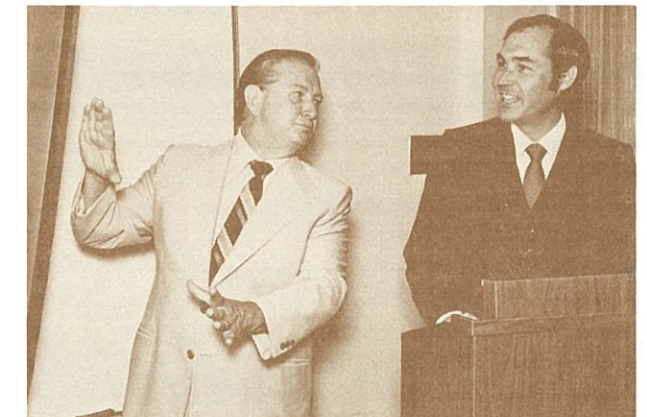
Savings Plan Values as of October 1983:

Equity: 2.5073754

Fixed: 2.4739852



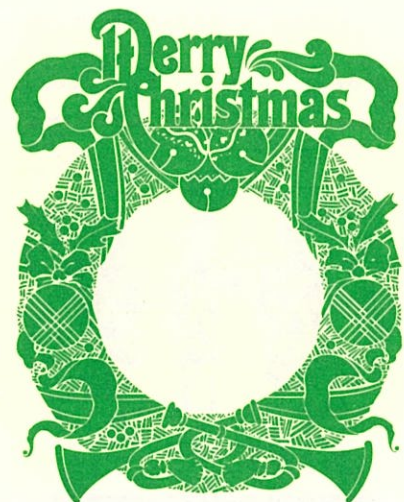
"SMILE...YOU'RE ON..."



They will never be the same! Ten SBRC employees recently completed a three-day seminar in Effective Presentations held at the Pepper Tree Inn, conducted by Jane Mayer and Ralph Carey from the Corporate Presentations Office. Comments such as: "... the most useful (class) I've ever attended," "Better than public speaking in college," and "... (I) liked it better than anything I've taken in the past six years with Hughes/(SBRC)..." were typical. Ralph and Jane helped everyone fine-tune their speaking and presentation skills. Effective use of viewgraphs, organizing material, and team presentations were discussed. Impromptu talks, video-feedback and group critique challenged and encouraged everyone.

Participants included: George Bunson, Dave Edwards, Luther Graham, Karen Kormos, Jose Landriz, Hugh Marsh, Larry Snarr, Don Thorton, Bill Elliott and Greg Price.

A special thanks to Hugh Marsh and Howard Wurtz for sharing their expertise during the Seminar.



SANTA MARIA, HERE WE COME!



Conversation these days in the Production Assembly area and supporting functions is centering on the relocation to the Santa Maria facility. Included in the Phase I move are the Cryogenics Lab, supervised by Rick Buckelew, which has been operational in Santa Maria since November 4th, as well as the MK 404 Program.

The components Yellow Area (90C and TOW Widefield), supervised by Karl Neumann, is scheduled to be operational in Santa Maria by November 21st, followed by Ed Putnam's Component Test Area by November 30th. The Glass Shop, supervised by Bill Williamson, is the next scheduled relocation, due to be operational in Santa Maria by December 6th. By mid-December it is expected that there will be about 35 production employees, plus 15 to 20 support personnel.

The main and largest move will encompass our Christmas vacation shutdown and will include the Cleaning/Plating Lab, Module Repair, Common Module and Maverick Production Groups, as well

as support and office personnel. By January 3, 1984, Phase I of the relocation to Santa Maria will be complete and will include about 225 employees.

The Production Control Department will be under the supervision of Bob Pittman in Santa Maria; Don Burke will head the Manufacturing Engineering Department and Jim Breen will have responsibility over the Product Assurance Department. Production Assembly will be headed by Bob Smith, Don Winn, and Joe Pagliotti; Human Resources Department will be under the direction of Jim Weston.

Many employees have commuted for several years from the North County to SBRC Goleta and are most anxious to transfer to SBRC Santa Maria. Howard Mainhart (Manufacturing Engineering) has traveled from Nipomo to Goleta for 3½ years (approximately 61 miles/roundtrip daily). When asked how he felt regarding his transfer to the Santa Maria facility, Howard replied, "Words can't express," but the relief on his face certainly expressed his feelings. Bill Langlois (Quality Engineer) took a different approach when asked: 3,000 miles per month; 36,000 miles per year; at 55 mph equals 655 hours per year in the car, equals 4 weeks. "I have spent approximately one month per year sitting in a car just going to and from work. That time will be decreased to 43 hours commuting time per year starting in January." (Spoken like a true engineer.)

Becky Bogart, Production Assembly Supervisor for the M-1 Program, has never had less than a 45-minute commute to work, and for the past 10 years has had a one-hour commute each way. By January, Becky will have a five-minute commute. With a twinkle in her eye, Becky says, "I suppose I'll have to change my whole life style." Becky says everyone on the M-1 Production line is anxiously anticipating the relocation to Santa Maria. They are all living there now and as one lady put it, "Commuting from Santa Maria to Goleta is like having jet-lag every day."

Doris Montgomery, the "pioneer" for the Manufacturing Production Group, was the first full-time employee at the Santa Maria facility. She says the new facility is "beautiful," though she wishes others would hurry up and transfer to Santa Maria. Though she is "lonely," Doris also says she will never complain again after tolerating the commute from Orcutt to Goleta for over a year.

Overall, the consensus among employees scheduled to relocate to Santa Maria is one of enthusiasm and eager anticipation. Good luck from the Goleta branch to the Santa Maria branch!

ENVIRONMENTAL HEALTH AND SAFETY

The Environmental Health and Safety (EH&S) office was originally established within Security in the early 1970's. From a one-person function offering first aid and workplace inspection services, as well as basic required training and administrative support, the Safety office has grown to accommodate the needs of our modern high-technology manufacturing and R&D operations. Under the supervision of Senior Engineer Don Bates, the EH&S section now encompasses, in addition to basic safety services, the dispensary, fire prevention, comprehensive industrial hygiene monitoring, and safety training programs. EH&S personnel maintain a modern array of scientific monitoring devices to ensure that workplace exposures to hazardous materials are maintained well below recommended workplace exposure limits.



Jim DeBeau

Many employees are familiar with the training programs offered by EH&S, ranging from Defensive Driving to Hazardous Materials Handling. In 1983 over 1,000 SBRC employees have already participated in at least one Safety or Fire Prevention training program. The complex and highly-regulated modern manufacturing environment demands highly skilled employees; specialized safety training is viewed as an important part of each employee's professional development. A major thrust of EH&S activity has, therefore, been to refine and expand training programs in all areas of safety, fire prevention, and emergency preparedness.

EH&S also plays a major role in ensuring company-wide compliance with environmental regulations, ranging from participation in new process design to administration of the Hazardous Waste Management program. In cooperation with



Irene Lewis, Ginger Herrera

other operational and support organizations, EH&S has developed a comprehensive waste management program which emphasizes the recycling of our spent process chemicals. This approach not only reduces the amount of waste chemicals which must be disposed of by burning or burying at approved waste disposal facilities but is also more cost-effective. EH&S continues to work with line organizations to ensure the application of cost-effective and environmentally sound process designs and disposal techniques.

Another current EH&S effort involves the training and education of employees in prevention of injuries through better knowledge of the hazardous properties of the materials with which they work. A milestone in this program was the publication in July 1983 of the SBRC Hazardous Materials Guide, which is available to all employees at control points throughout the company or from the EH&S office. This guide, containing over 800 Material Safety Data Sheets is a key to increasing employee understanding and safety awareness.

A good deal of effort also goes into emergency preparedness. EH&S maintains strategically placed emergency supplies and equipment, develops action plans, and trains Emergency Response Team volunteers. Comprehensive contingency plans and facilities are maintained to address

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