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PULSE

EMR
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HIGH QUALITY AWARD GIVEN TO EMR BY SWS

Employees of EMR-Telemetry were honored this month by Schlumberger Well Services for supplying equipment of extremely high quality over the past year with an acceptance level of 98% or higher.

The award was presented in a special ceremony to a group of employees who served as representatives for all EMR employees involved in producing equipment of outstanding quality for SWS.

Mr. Joe Duhon, Product Assurance Specialist for Schlumberger Well Services, Houston, presented the certificate which will be prominently displayed.



Joe Duhon, of SWS, presented Certificate of Quality Performance to EMR employees represented by Frank Bloechl, Chris Papastrat, Sharon Gooch, Carmen Ireson, Jim White and Wayne Norman.

The SWS Award is the first of its kind to a major tool system supplier, according to an SWS Quality and Reliability spokesman. Similar awards have previously gone only to vendors supplying components and subsystems.

The Award reads as follows:

Schlumberger Well Services - Certificate Awarded to *EMR TELEMETRY* in recognition of outstanding achievement for continuous delivery of material of an *EXTREMELY HIGH QUALITY LEVEL*. This Certificate is presented only to vendors who have continuously supplied Schlumberger with material for a period of one year or more with an acceptance level of 98% or higher.

It was signed by R. D. Ricketts, Manager, Quality & Reliability; J. K. Bruner, Purchasing Agent; G. C. Hepburn, Jr., SWS Materials Director. (Cont'd on P. 2)

ATTENTION ALL ARTISTS! IT'S EMR ART SHOW TIME

EMR's third Employee Art Show is now being planned by Carolyn Cox, of Materials. Carolyn served as coordinator for the initial EMR employee exhibitions which were hung in the lobby of our Administration building last August and September.

"All employees and members of employees' families are invited to participate," Carolyn said. Paintings of all media, sculpture and macrame will be considered for inclusion in the Summer show.

Phone Carolyn Cox, Ext. 363, for further details.

How about you talented EMR folks in the Field? Let's hear from you, too!

HIGH QUALITY AWARD BY SWS (CONT'D. FROM PAGE 1)

Frank Bloechl, EMR's Program Manager for the SWS contracts, and Chris Papastrat, EMR-T's Manager of Quality Assurance, were in the group accepting the Award.

"This Award is recognition for all employees who take pride in their work and build quality into the equipment produced at EMR," Chris Papastrat noted.

"At SWS we stress the need for quality at every step--from components and metal fabrication to each solder joint and throughout the manufacturing process," Mr. Duhon said. "Therefore, this certificate is meant for all employees who participated in supplying high quality equipment."

Frank Bloechl also stressed that the SWS Award is "a tribute to all the conscientious

employees in various departments who have been involved in the SWS program."

SWS has awarded contracts to EMR-T over the past two years to produce many million dollars worth of sophisticated logging tools used in the worldwide search for oil. The units include Microlog Proximity Cartridges, Compensated Neutron Cartridges, and Scintillation Gamma Cartridges and related tools. The variety of equipment includes down-hole tools used in the bore holes at well drilling sites as well as related boxes used at the surface at drilling locations.

Many new types of tools are being readied for production. They include mud testers and sonic logging equipment.

RUIZ AND SHANDELMAN FILL MARKETING POSTS

Two recent additions to EMR-T's Marketing organization are Frank Shandelman, Manager of our Eastern Sales Area, and Ronald Ruiz, Instruments Product Line Manager. Both men are experienced sales and marketing executives and will help to reinforce our sales efforts. They report to Director of Marketing Shelby D. Bass.

Frank Shandelman earned his electrical engineering degree from City College of New York. He has a broad background in telemetry marketing, engineering and management positions. Until recently he was President and Director of Marketing of Microcom Corp, and from 1959 to 1966 was Director of Marketing for Vector Manufacturing. Earlier he was with Tele-Dynamics as Manager of the airborne and ground system engineering group.

For the past ten years he has been a Director of the International Foundation for Telemetry. He holds a number of patents including a Twin-T Subcarrier Discriminator, Tape Error Compensation System, Low Level Commutation (air-



← Frank Shandelman

Ronald Ruiz →



borne commutator) and Pasteless EKG Electrode.

Frank and Barbara Shandelman make their home in Pennsylvania, and are the parents of three sons and a daughter.

Ron Ruiz, based in Sarasota, earned his bachelor's and master's degree in electrical engineering at Cornell University. He has been involved in selling a wide variety of electronics instruments with General Radio, Time Data, Tektronix and Philips, Inc. As Instruments Product Line Manager, he heads the marketing effort for EMR dynamic analysis instrumentation used in vibration and stress testing applications.

Mr. Ruiz is a member of IEEE and the Acoustical Society of America. Ron and Carol Ruiz are the parents of a son and a daughter.

EMPLOYEES ACHIEVE ONE MILLION HOURS SAFETY RECORD

Safety-conscious EMR employees have achieved a record milestone--one million hours without a work-related lost-time accident. The record was reached on February 28, 1975, according to Safety Director Carl Weinrich.

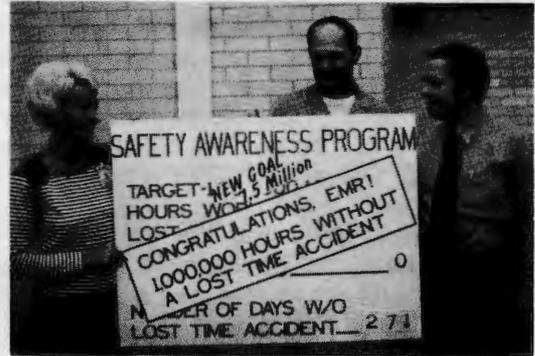
"This is a notable first for EMR employees and reflects credit on all employees and our Safety Committee," said Rich Brogan, Manager of Personnel. "It gives clear evidence that employees are really practicing safe work habits."

The record indicates that EMR employees did not lose any work days due to work-connected injuries during the past eleven months.

"We congratulate all employees on this achievement," Carl Weinrich said. Next goal? One million, five hundred thousand hours.

Our Safety Scoreboard, mounted on the wall near our Cafeteria, shows the number of days since the last EMR-T lost-time accident and indicates the number of months to go to reach the new goal of 1,500,000 hours.

Since the Safety Awareness Campaign



Joan Stabenow, Waymon Warren and Carl Weinrich with the good news -- 1,000,000 hours of safety!

was launched in October, 1973, EMR employees were awarded two Awards of Commendation from the Travelers Insurance Companies for outstanding performance in accident prevention. One award signified achieving over 600,000 employee hours without a work-related lost-time accident during the period April through September, 1974. An earlier award was presented for reaching over 500,000 employee hours without a lost-time injury during the second half of 1973.

SEVERAL EMR PAPERS ARE BEING PUBLISHED

Writing technical papers and presenting papers at technical symposia are ways that EMR personnel can make the Company even better known to our potential clients. A number of our engineers and marketing people are currently doing just that. The authors, their papers, and the dates of their presentations or publication are listed here:

Farinas, Pete - "A New Fault Location Method for Transmission Lines," Pacific Coast Electrical Assoc. Engineering and Operating Conference, Culver City, Cal., March 20-21, 1975.

Farinas, Pete - "A New Distance Relay for Medium and High Voltage Overhead Lines," IEEE Southeastcon, Charlotte, N. C., April 7-9, 1975.

Norton, John and Victor Declercq (Ford Motor Co.) - "Automotive Impact Instrumentation System," ISA Proceedings of the 21st International Instrumentation Symposium, Philadelphia, May 19-21, 1975.

Turrell, Don - "Ripple Control - Its Application for Meter Switching and Load Management," Load Management Seminar, Georgia Public Service Commission Atlanta, March 24-25, 1975.

Waggner, Bill - "Optimum Design of PSK Demodulators," 8th International Aerospace Instruments Symposium, Cranfield, England, March 24, 1975.

Waggner, Bill - "Tunable Matched Filters for Pulse-Code Modulation Using Charge-Transfer Devices," IEEE Transactions on Communications, March, 1975.

EMR - T MEN JOURNEY TO OIL RIGS IN THE STORMY NORTH SEA

To get to an oil rig in the North Sea, you can fly from Aberdeen, Scotland (or Dyce) to the Shetland Islands. Then you helicopter another hundred or so miles north over that stormy body of water known as the North Sea to get to the rig.

Mike Russell and Don Woodworth are two EMR Engineers who have made that trip in recent months as part of a job the company is performing for a sister Schlumberger organization, Etudes et Productions Schlumberger (EPS), Clamart, France.

The project involves improving radio communications transmission over crowded, noisy radio channels from distant rigs. Schlumberger logging data from the North Sea oil rigs is sent to an on-shore base for processing. Accuracy and speed in transmitting the information are vital, since waiting for a decision based on the logging data involves many thousands of dollars per hour. Using conventional modems* (see note below) resulted in too many errors. EMR designed a special modem to make fewer errors, and to correct most of them, under the difficult North Sea conditions.

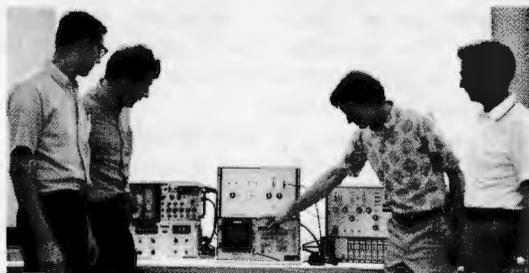
"These are exploratory oil rigs in the North Sea," explains Mike Russell. "The rig is work base and living quarters for about 100 people. On board the leased rig are a few oil company representatives who arrange for transportation and handle other logistics problems. All other personnel are contract employees. Drilling operations are run by 'roughnecks' and 'roustabouts.' Then there are mud engineers, divers, Schlumberger logging employees, testing personnel, caterers and so on."

*Modem -- MODulator-DEModulator. Modulator makes data bits into tones which can pass through telephone system. Demodulator converts tones back into data bits.



At left, Don Woodworth on offshore oil rig, Ocean Voyager, in North Sea.

Mike was stationed on two separate oil rigs for several days each. "Everything on an oil rig is huge," he observed. "Thirty-foot lengths of pipe are connected together for the well casing. Drills, anchors, and anchor chains are all enormous and heavy. The platforms on the rig are about 100 feet above the water's surface. Down about 300 feet, at the bottom of the sea, is the well head--observed by an underwater TV camera. The rotary drilling operation goes down two miles into the earth. Thirty-foot sections of casing are linked together, and when the drill or tool has to come up, 90-foot lengths must be coupled and uncoupled with speed, and then hoisted up and stored near the top of the derrick--an immense amount of weight--while the down-hole



Milt Litwiller, Francois Jullien (EPS), Mike Russell and John Belt; with prototype of Schlumberger Data Link Equipment in Sarasota.

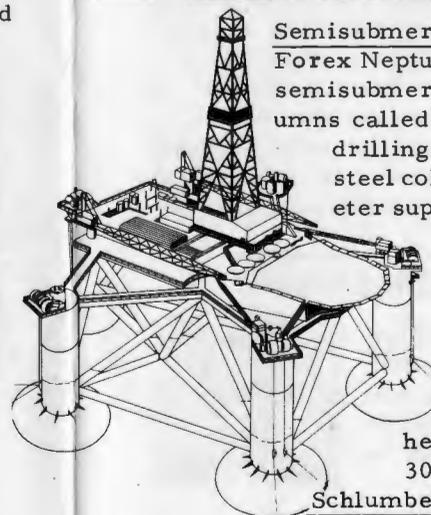


"That'll be the day when they get me up in one of them things!" --Intercom, SPES

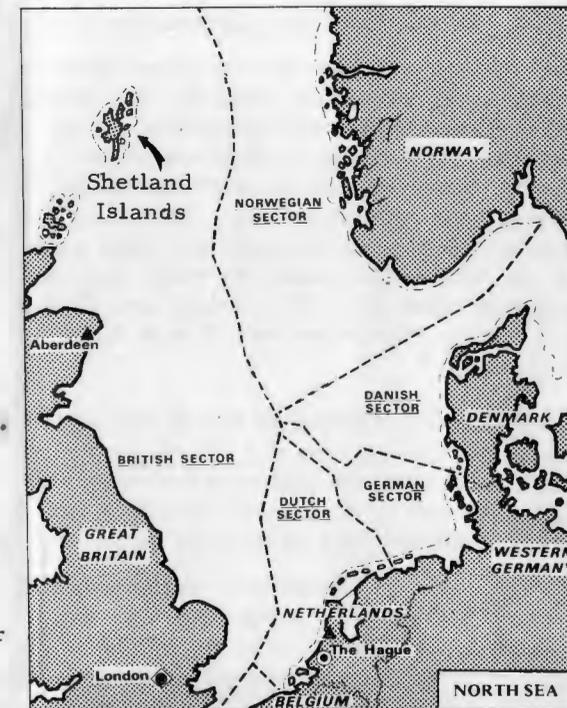
casing, drill, or logging tools, etc., must be held securely to prevent their being dropped down into the hole.

"These are expensive, exploratory drilling operations to determine geological strata and the likelihood of finding hydrocarbons (oil and gas). Therefore, the Schlumberger well logging services are very important.

"Living on an oil rig can be exciting or routine," Mike continued. "There's a catch boat standing by at all times to pick up anyone who might fall off, or in case of emergency such as a blow-out. Men are on 12-hour shifts, working two weeks at a time, and then off for two weeks. Transportation to and from the rig is by an 18-



Semisubmersible Platform - Forex Neptune designed a semisubmersible with 5 columns called a Pentagone. The drilling platform sits on steel columns 30' in diameter supported by pontoons which provide buoyancy. At the drilling site pontoons are partially flooded for stability; the floating unit is held on location by 10 30,000 lb. anchors.-- Schlumberger Annual Report



man helicopter. On the rig, popular pastimes are darts and chess. Movies are shown twice a day. Rooms are usually for four persons, with bathrooms nearby. Food, laundry, cleaning, etc., are by catering service. An oil rig is very much like a floating hotel, and very clean," Mike and Don reported.

"Oil rigs are self-propelled vessels with their own motor power. They are anchored to the sea bottom with quarter-mile-long enormous anchor chains (a couple at each corner of the rig). The rig floats via a flotation arrangement under the water's surface. Thus waves pass beneath the platform, and the 'legs' of the platform offer less surface for the waves to beat against, making the rig somewhat 'transparent' to the wave action. When wind and sea conditions are severe, the rig's engines are used to keep the rig stable and ease the strain on the anchor chains," Mike says.

"There's some slight up and down motion on board, but it's very stable," he said.

(Cont'd on Page 6)

OIL RIGS (cont'd from page 5)

Oil companies lease the rigs from offshore drilling rig companies, and the rigs themselves can travel, self-propelled, by sea, perhaps from Texas to all parts of the world. Mike visited two rigs, and Don Woodworth visited another. "Francois Jullien, EPS Project Engineer, also went to two other rigs during my stay--including Pentagone 84," Mike remarked. "Many men on the rigs were from Texas and Louisiana."

In addition to visiting the North Sea rigs, we stopped in London and Aberdeen to clear with communications regulatory agencies and to coordinate activities with other Schlumberger personnel, Mike said.

NOTE: See the Employees' Bulletin Board (near Cafeteria) for more photos of Don and Mike and the oil rigs.



PENTAGONE 84 - a North Sea drilling rig about 90 miles off the Shetland Islands

NEW PRODUCT



Patsy Carter, Model 713, Polly Smith

One of EMR-T's newest units just about ready for shipment to initial customers is the Model 713 Programmable Word Selector. Shown with the unit are Patsy Carter and Polly Smith, members of the Assembly team.

The Model 713 was launched during the ITC (International Telemetry Conference) in Los Angeles, and EMR's Marketing personnel took it and other units in a working telemetry/computer system on a cross-country sales demonstration tour.

Among the major customers who have already ordered the Model 713 are:

Bell Helicopters, Lockheed, NASA Ames, NCS, Philco, Martin Marietta and Edwards Air Force Base.

Members of the Model 713 development, design and manufacturing team include Tom Bray, Ian Albritton, Roy Paxton, Vince Supple, Jerry Belveal, George Norton, Bob Schmidt and others.

Units are being produced under an accelerated Phase III Product Design program for quicker productization and manufacture of the units.

ANNIVERSARY GREETINGS

Happy anniversary to Bob Klessig, Manager of our Western Sales Area, who marked his 15th service anniversary with EMR in



March.

NEW WIRE WRAP MACHINE ADDED IN ASSEMBLY



Faye Pack, seated, and Jeanie Thatcher are getting acquainted with the new wire wrap machine recently added to our manufacturing capability. The Contact Systems, Inc. tape-controlled machine is the second wire wrap machine in the Assembly area.

ACCURACY COUNTS

Additional wire-wrap capacity is required to accomplish the complex wiring of new EMR products. For example, a single printed circuit card in new products such as our Models 711 and 713 may contain up to 2,000 or 3,000 wires each. That means 4000 - 6000 wire wrap operations on one card. Yes, accuracy is important!

Other wire wrap machine operators include Cindy Buckles, Nancy Helleis and Polly Smith.

GOLFERS ACTIVE

Some 14 two-man (and woman) teams are enjoying the 13-week EMR Golf League now under way on Tuesday afternoons. The mixed league plays at Rolling Green. There are weekly prizes, plus some stiff competition, according to League President Skip Bailes.

VEHICLE TEST EQUIPMENT EXHIBITED AT SAE SHOW

EMR-T's telemetry equipment and systems were exhibited at the Society of Automotive Engineers' Exposition in Detroit last month. John Norton, of Marketing, and Bob Murphy, of our Michigan Sales Office, manned the EMR booth.



John Norton and Bob Murphy in EMR booth at SAE Show in Detroit

Featured in the display at Cobo Hall were our VTS, 604 Data Sets, 4000 Series equipment and 607 Auto. Calibration System. Through the cooperation of Ford Motor Co., the EMR impact barrier system was on loan to us for this show.

The system is described in a paper written jointly by John S. Norton, of Marketing and Victor J. Declercq, Product Test Engineer for Ford in Dearborn, Michigan. The paper, entitled "Automotive Impact Instrumentation System," will be published in the forthcoming ISA Proceedings of the 21st International Instrumentation Symposium, May 19-21, 1975.

The Auto-Data System was delivered to Ford in 1974 for use at their crash barrier facility.

PULSE - The EMR-Telemetry News

M. E. Herbst, Editor

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A SCHLUMBERGER COMPANY

WHO'S WHO --- COLLECTING IS FUN FOR JAN

"Collectors of sharks' teeth are easy to identify," says Jan Ammen, Computer Operator in EMR's Engineering Software Group. "They spend hours on the beach, but their faces are never tanned because they're bent over hunting for specimens - - so they have tan backs and white faces!"

Jan should know. She has over 6,000 examples of fossilized sharks' teeth, most of them found at Venice beaches. Venice is described as the best beach for fossil hunting in the entire State of Florida. Jan's been a collector since last summer.

"They say the fossilized teeth wash up on the Venice beach because of the gentle slope of the Continental shelf," Jan reports.

Her studies of sharks' teeth reveal many interesting facts: you hunt among the shells and pebbles along the water's edge. When they are in the live animal, the teeth are white as yours. As they become fossils, the teeth turn gray, black, brown, gray-blue, etc., depending on the type of deposit in which the teeth have been buried. Sharks' teeth range in size from 1/4 inch to a rare, giant five inches or more.

"These fossilized teeth can be millions of years old, but you have to be a paleontologist to date them," Jan says. (Paleontology is the study of life of past geological periods as known from fossil remains.) Experts estimate the size of the shark from the size of the teeth. If you were lucky enough to find a five-inch shark's tooth, for example, it probably came from a *Charcharodon megalodon* that was about 40 feet long.

Textbooks say a modern tiger shark could produce 24,000 teeth during a 10-year period. A shark has hundreds of teeth at one time. The front row is erect; others in several rows, one be-



Jan Ammen with some of her collection of sharks' teeth

hind the other, are flat against the interior of the jaws. When an active tooth is lost, the tooth behind it moves into place, and the process continues for the life of the shark.

Jan comes from upstate New York and has two teen-age daughters. She was employed as a Senior Computer Operator on an IBM 360-50 at General Dynamics, Rochester, N. Y. Earlier she did key-punch work for Sarah Coventry, the jewelry house, and was a Computer Scheduler for the Orlando (Fla.) School Board before joining EMR in 1973.

Her other interests include travel -- notably her trip to Osaka and Kyoto, Japan, and Hong Kong, Macao and Bangkok in 1970. She has traveled in Canada and the Virgin Islands, too.

Jan enjoys painting pottery and white ware for her home decorating projects and for gifts -- and collecting sharks' teeth.

