As this is written, confusion reigns in the oil industry and this turmoil has had an immediate and direct effect on our company. In an industry already hard hit by mergers, massive debts incurred to avert takeovers, moratoria on exploration, etc., the precipitous drop in the price of oil has created chaos. It had long been a foregone conclusion that sustaining the price of oil in the $26-28 range would be difficult at best; however, when the drop did occur, the fall was so sharp and sudden that it sent shock waves through the entire oil industry.

Faced with reduced revenues from the oil they produce and sell, the companies reacted immediately by drastically cutting budgets allocated for exploration work. In addition, projects which were viable when oil was selling for $26-28 suddenly have become uneconomic and are being aborted. As a consequence of these and other factors, we are seeing the pace of domestic exploration activity reduced to a slow crawl.

Now, what does all this mean to us as a company? For sure, in the short term we will have to do some serious belt tightening. Since, as a service company, salaries are our largest single expense, it is unavoidable that we must face the unpleasant task of trimming our work force so that it is compatible with the level of business which we are able to maintain. Secondly, we will have to watch closely all expenditures; items that have been taken for granted in the past will now have to be scrutinized carefully. We solicit all employees to be intimately and personally involved in this endeavor to eliminate waste and to spend wisely.

In the longer term it is anybody’s guess as to when oil prices will return to a suitable level to support reasonably widespread exploration activity. The fragile pricing structure has triggered some fundamental changes in the oil industry which are ongoing right now and which will delay (or may even preclude) a return to “business as usual” as we have known it in the recent past. For example, consider the early retirements and massive lay-offs which have occurred and which have decimated the corps of explorationists. The number of “prospect generators” has been trimmed considerably and exploration activity will reflect this situation for some time to come.

However, just remember that opportunities come with change and, if we are as good as I think we are, then, with the dedication of all of us we will not only survive and prosper in this market, but we can also emerge as an even stronger force in our industry in the future.

Neal O. Adams
Westerners benefit from continuous safety education

In the geophysical industry, the protection of our most important asset, our people, is an integral part of operations. The “cost” of any accident is too high, often wasting money and time, lowering productivity, and most important of all, causing human injury and sometimes death.

In the past four years, Western Geophysical’s total number of accidents and lost manhours has steadily declined.

The Safety department focuses on training employees to perform their job safely, resulting in fewer problems found during regularly conducted safety inspections. In 1985, Western’s Safety department, under the supervision of Wayne Prince, sponsored numerous programs that emphasized safety awareness. These programs, presented to both office and field personnel, helped make Western’s 1985 safety campaign an impressive one.

The First Responder Program trains employees in artificial respiration, applying bandages, and treating burn and shock victims. The program is presented to many employees who work in outlying areas where it is not always easy to obtain professional medical attention.

The CPR Training Program trains employees in cardiopulmonary resuscitation. Each field crew has at least two members who have current CPR and first aid cards. These classes are usually taught by medical instructors with several years of experience.

Fire Training Programs emphasize safety in combating various types of fires in a controlled situation. Two-day field exercises provide students with the opportunity to use portable extinguishers on various types of fires, using foam and water extinguishing methods. The exercises also include simulated search and rescue operations.

- Defensive Driving Courses are offered to all employees who operate a company vehicle. The eight-hour course is also recognized by insurance companies as credit toward lower premiums.

In addition to various programs, Western Geophysical offers an extensive library of videotapes dealing with safety information. These films have been given excellent ratings.

- Survival Training instructs participants in the technique of “drownproofing” and how to use flotation devices and life rafts in case of accidental immersion.

- Hypothermia Training teaches prevention, diagnosis, survival, and treatment in case of immersion in cold water.

Safety courses are often taught in classroom as well as on location.

- Drug and Alcohol Awareness, presented to all field crews, addresses drug and alcohol abuse, signs and symptoms of abuse, and counseling and treatment available.

A Colorado land crew celebrates a clean accident record with a traditional safety dinner organized by the Safety department.

SPRING 1986
reviews by several professional organizations. The films include Survival at Sea, Survival Swim Techniques, Hypothermia — A Cold Reality, Safe Procedures for Airgun Operation, and Flagman Safety. After each film, a test or review is completed by the viewer. The results aid the Safety department in determining any weaknesses in the training process.

Director Wayne Prince heads the Safety department. In addition to his duties as director, Wayne is vice chairman of the IAGC's safety committee. Wayne is assisted by Senior Secretary Judy Smith, who is often left "in charge" when everyone is out on field assignment. Judy also handles the safety awards program.

Jeff Howell, facilities safety representative, is in charge of Western Geophysical's safety committees, evacuation teams, and training in office facilities. Jeff is also responsible for maintaining the employee driving record division which has recently been computerized.

Working with the field crews are Butch Allen, Gene Stramel, Dick Bye, Gerry Reynolds, Keith Bailey, and John Bowers. These men travel to land and marine crews educating crew members in first aid, CPR, handling hazardous materials, fire fighting, fire prevention, highway safety, defensive driving, and equipment operation. Butch and Dick work out of the Houston office, Gene is from Denver, and Keith is from Calgary. In addition to safety responsibilities, Gerry is general services administrator in London, and John handles other administrative duties in Anchorage. Mick Gillespie, a Western supervisor out of Brisbane, Australia, helps with safety procedures for that area by being a member of the safety committee.

Western's goal regarding safety first can be attained only if accidents are kept to a minimum. A high degree of safety consciousness among employees and whole-hearted cooperation with safety procedures, regulations, and standards are necessary to maintain a safe working environment.

In Houston recently for a group safety meeting are (left to right) Director Wayne Prince, Supervisors Keith Bailey, Gene Stramel, John Bowers, Jeff Howell, Butch Allen, Chris Tutt, and Gerry Reynolds.

**Facts on Drowning**

Denial seems to be a real problem around water. It's common to hear people say, "I don't need a life jacket. I can swim." Can they swim with a broken arm or leg? Can they swim a mile or two to reach shore in 50°F water?

Some interesting statistics were presented at a recent safety conference:

1. Approximately 8,000 deaths a year are attributed to drowning.
2. Drowning is the second leading cause of accidental death for ages 4 to 44.
3. 85 percent of victims are male.
4. 65 percent of victims cannot swim.
5. Over 50 percent of victims did not intend to be immersed.
6. 50 percent of victims are alone.
7. 90 percent of victims are within 10 yards of safety.
8. Only 30 percent of victims receive CPR.
OVER THE YEARS, WESTERN’S EMPLOYEES have worked together to make the company a success. PROFILE talked with several employees to find out what their jobs involve and how they feel about working at Western. It’s the people that make the difference and give Western its reputation as a leader.

PROFILE

In a sense, Marion Hirsch left one classroom for another when she joined Western Geophysical.

A data processing supervisor in the Houston office “annex,” Marion spent 10 years of her earlier career teaching high school mathematics in Houston and San Antonio. Now, the tables are turned and she is aware of the education she and others can receive at Western and from the industry in general. “New programs are always coming out,” she says. “The technology of yesterday is not good enough for the challenges of exploration now.”

Says Marion of the geophysical industry: “I wish I’d been in it all my life.”

time is spent with her processing groups in overseeing parameter selections and quality control as well as with clients. She also interfaces a great deal with other departments, particularly the R&D and Computer Science departments.

Of the seven analysts in the building, Marion was the first to do 3-D work. A large portion of her time is spent on 3-D processing, which she says is a “big challenge.” Another challenge she cites is working with the idea in mind that efficiency and, at the same time, accuracy, are more important than ever now.

Marion has worked for Western six years, starting out as a geotechnician in the main building and transferring to the annex as an analyst a few months after the new center opened. She became a supervisor in November 1984. Besides teaching, Marion also has worked as a bank auditor in Denver. But she became acquainted with the geophysical environment long ago through her father, a geophysicist.

Marion has enjoyed Western’s “friendly atmosphere” and appreciates the employees who “bend over backwards to make sure you get your work turned around.” She has confidence in Western’s standing: “We’ll weather the storm,” she says.

Charlie Yanez has been party manager of crew 703 (V-3), based out of Beeville, Texas, for over five years.

“Western Geophysical is a first-class outfit. I don’t feel like I’m just a number working for Western,” he says.

Born in Havana, Cuba, but a naturalized U.S. citizen, Charlie has been in Texas since 1963. After graduation from Texas A&I University in May, 1980, he started working for Western as a geophysical trainee in September and became party manager five months later. His previous job experience includes work as a roustabout on offshore rigs in Louisiana and Texas.

As party manager, Charlie is responsible for managing and overseeing all the activities of the field crew, with the goal “to maintain Western’s standards, maximize production, and reduce costs.” He interfaces with the client to ensure the data acquired meets the requested parameters and specifications, and oversees the permitting, surveying, and actual data acquisition of the program.

Charlie has worked on Party 703 in “about every town on the map.” On the road for roughly 20 days a month, he spends only about five days per month actually in the Beeville office. He says that on the weekends he tries to get home to

Marion is responsible for two processing groups in Houston Digital Center II (managed by Royce Sharp). With a schedule that is “different every day,” much of her

Charlie Yanez

 spills

Marion Hirsch
Corpus Christi, where his wife and two children keep him busy. Other interests include fishing.

Charlec likes two things, in particular, about his job: being outdoors and the idea that "every day seems to bring new challenges."

But he also likes the people he has worked with. "All of my supervisors have taken the time to teach me," he says. "We're kind of like a big family...here on the crew," he adds.

“You can’t stop learning in this industry,” says Ybarek Cuddus, navigation supervisor. “There are always new requirements. You have to think of new ways of improving what you’re doing.”

Cuddus (most people call him by his last name) oversees the WISDOM® Integrated Positioning System and the WISDOM 3D-QC Computer System for Western’s seven Gulf Coast vessels in operation. He assists navigators with day-to-day problems and activities and also keeps attuned to the latest system configurations.

When Donna White moved to Houston from Wichita, Kansas, 13 years ago and hired on with Western a week later, she didn’t quite know what to expect of her job. But Donna, client distributing supervisor, found a home at Western. “I really enjoy working here,” she says.

Donna and her assistant, Carlo Moen, are responsible for seeing that completed land and marine data processing jobs and paper sections reach their proper destination. She explains that her group is the last at Western to handle the data.

Says Donna of her job: “It’s not boring—that’s for sure!” One reason she has liked her work is because of the contacts she has established and maintained over the years with “all kinds of people,” including other Western personnel, carriers who deliver the data, and clients.

“Like dealing with the clients,” says Donna. “I actually go to the clients to ensure the shipment is complete, that they’ve got what they ordered.”

Donna, who started with Western at the former Westpark location, has seen the Houston office grow. She notes that she and another employee were the first two members of the office’s centralized client distributing group. Previously, the processing groups were totally responsible for their own distribution. Another change with the times that Donna has observed during her Western career is the shift from hand-typed transmittals to ones done on computers.

Donna also has served as one of Western Geophysical’s two representatives on the committee for the Geophysical Society of Houston annual golf tournament. Outside of Western, she enjoys skiing and active participation in Houston mayoral elections.

WISDOM is a registered trademark of Western Geophysical Company of America.
Western Geophysical's Gulf Coast Marine Division boasts vessels outfitted for various projects. The crews from three of these vessels, the Western Shore, the Western Inlet, and the Western Harbor, are featured in this PROFILE pictorial review. Specifically designed for the Gulf Coast, these ships have performed successfully in this area as well as areas extending beyond the Gulf of Mexico when the need arises.

Mate Patrick Walker helps paint the deck of the Western Harbor.

Junior Observer Wilbur Williams assists with the installation of the WISDOM® Navigation system aboard the Western Shore.

The Western Harbor refuels by truck on special assignment in Eshjerg, Denmark.
Mark De Martelaere, Inlet compressor mechanic, repairs a connecting rod.

Gunner Jon Klitzing loads cable aboard the Western Harbor.

Party Manager Pete Lucas (seated) gives advice to Engineer James Bulser during the Inlet's recent port call in Galveston, Texas.

Testing cable continuity is the Inlet's Senior Coordinator Marcus Austin.

First Mate Billy Kornman takes a wide view of the Gulf from the wheelhouse of the Shore.
During resupply, Navigator Jim McGrew loads camera monitor boxes on the Western Inlet.

Senior Observer Mike Bateman works on a cable reel during recent port call of the Western Harbor.

The Inlet celebrates its fifth birthday on May 5, 1986.

Changing the oil filter on the Shore is Mark Danielson, compressor mechanic.
WESTERN’S GULF COAST FLEET

Monitoring recording activity aboard the Western Harbor is Technician Ray Kuhar.

As party manager for the Shore, David Beile organizes port call for resupply and ship maintenance.

Western Shore Mate Kenny Lepre “touches up” the base of the new Marisat antennae.

Navigator Tim Rash checks instruments in the Inlet’s recording room.

Amidst new compressor parts, Gunner Joskie Jenkins takes a break before unpacking boxes on the Inlet.
The Shore, primarily designed as a back-down/drag vessel, is the only one of its kind in the Gulf Coast fleet.

Part of the Western Inlet’s gun crew, Gary Reed (left) and Mark Umfleet (right) make alterations to their equipment.

Western Shore Technician Mike Gehring checks computer cards in the recording equipment.
Alaskan waters present a challenge to Party

The condition of the back deck indicates it's time to head out of the Chukchi Sea in late September.
AFTER A WINTER IN SEATTLE
painting and upgrading the Western Horizon, Party 120 headed north for another season in Alaska. Our first prospect was in the South Aleutians off southeast Alaska where riptides and whirlpools made for a hard month of production and cable balancing. Once that project was complete, we headed to Dutch Harbor, Alaska for a quick crew change, then back out to sea to a new prospect area called the Navarin Basin.

Good production in this area is possible if the weather allows. The problems encountered in the Navarin Basin are other seismic vessels, and Japanese and American bottom-trawler fishing vessels. This method of deep-water fishing can cause severe damage to the seismic cable although the Horizon managed to steer clear of them this summer. Party 120 also spotted a Soviet naval vessel near the disputed zone.

After the Navarin Basin, the Horizon headed for a port call in Nome, Alaska where the crew took time out for a little rest and relaxation, then to the Chukchi Sea prospect area which is further north along the Alaskan coast. The first ten days, the Western Horizon was stuck in the ice. While waiting for assistance from the wind to push the ice back out, the crew had a chance to take pictures of themselves sitting on an iceberg. The Horizon spent three months in the Chukchi Sea area and towards the end of the third month, when the weather and ice forced us to leave, the vessel had shot more mileage than any other Western Geophysical boat had ever shot in the Chukchi Sea. We then sailed back to Nome, Alaska to drop off the crew and then to Seattle to get the Horizon ready to begin a new year.

Senior Coordinator Reuben Aldrich and Assistant Michael McGuirk, observers Dan Spencer, Phil Marvis, Keith Raschke, junior observers Bob Anderson and Willie Fletcher, helpers Scott Brannan, Keith
Casey, Geoffrey Mertz, Otis Ernst, John Christy, and Duncan McLaren did a fine job in keeping Western's high standards of quality.

The Horizon's gun crew consists of Chief Gun Mechanic Dennis (Boss) Bible, gun mechanics Jack Thiesen, Tom Spoto, and Brik Waggoner. Helpers are Brian Swanson, Bill Sanders, Pat Prendergast John Esteves, Randy Erikson, Kent Roach, and Frank Devery. Chief Technician Mark Lein is assisted by Technical Trainee Ralph Lange. Chief compressor man Brett Cahill and assistants Ken Huette and Roger Wasy low did a great job for Party 120 along with Chief Navigator Rod Weatherspoon, Jay Simpson, Paul Luke, Allen Young, and Mark Thompson. Our talented marine crew was led by Captain Dillard Stone and the late Captain Jim Dismore, who passed away this fall and will be missed by all. Mates are Jefferey Deutschle, Malcolm Porter, Robert Helbig, seamen Joseph Davis, Fred Bern, Coral Doran, David Hill, Chief Engineer Mario Lister, assistant engineers Gary Kruger, Gregory Cooper, Del Sherman, and Jonathan Mack. The Horizon cooks are Harry Belanger and Charles Gibbs with galley hands Raoul Macalinoa and Philip Mathes. The whole crew of the Western Horizon did a fine job this past season with the leadership of Party Manager Tom Hoymer directing from Point Barrow.

Chief Gunner Dennis Bible takes time out to enjoy an iceberg off Cape Lisburne, Alaska.

From left to right, Michael McGuirk, coordinator; Bruce Cervene, head gunner; and Larry Howard, compressor man, look on as the Horizon leaves Ballard Lock on her way north to Alaska.
Captain Dillard Stone prepares to leave the Ballard Lock and head out to sea.

Gun Helpers John Esteves and Brian Swanson (foreground) man the Horizon shooting shack.
A PPROXIMATELY FIVE percent of Alberta's "oil patch" is covered by water and significant petroleum reserves are thought to underlie the lakes. They have remained relatively untapped, in part because exploration of these shallow waters is not amenable to either standard land or marine techniques.

In the fall of 1984, the Calgary office embarked on an ambitious project to obtain quality seismic data beneath several large lakes, using the DIGISEIS®-200 system.

In order to accommodate the many operational and design constraints of the project, custom recording and source vessels were built by a houseboat manufacturer in Kelowna, B.C. Otis Johnston and his group in Alvin, Texas aided in the redesign work needed to accommodate the sophisticated recording instruments and waterguns, while retaining portability.

The source boat, R/V Western Beaver, and the recording boat, R/V Western Otter, were each designed with a three-pontoon hull. The outer pontoons are used for buoyancy while the center pontoon houses a 110-horsepower turbo diesel inboard engine and a fuel capacity of 400 gallons. The remainder of the center pontoon is utilized as buoyancy.

Calgary's Shop Supervisor Dennis Dornstauder collaborated with John Crowell of Western Research in Houston to build a custom trailer that would permit the vessels to be loaded and unloaded in limited water depths. It was also a desire that no special permits or pilot cars be required for highway movements.

The resulting 16-wheel trailer was built in Calgary's shop. The unique design allows dislocation and removal of the trailer dolly to a position below a stationary portion of the gooseneck. The trailer cradle is lowered hydraulically to the lake bottom leaving the vessels to float freely while loading/unloading. Once complete, the cradle is lifted hydraulically, the dolly winched back into position, locked, and the trailer is ready for travel.

The first vessel to arrive at the Calgary shop was the R/V Western Beaver with the R/V Western Otter just a few days behind. Upon delivery of the Beaver, Rick Berquist, Party 111's head gun mechanic, and Herman Schwarz, second gun mechanic, were assisted by Mike Lyons of the Houston office in outfitting the shooting boat. The Beaver is equipped with two 6-cylinder diesel engines powering a 35 KW generator, 2-hydraulic pumps, and a 17 cu. ft. per minute air compressor. Two 400 cu. in. hydro-pneumatic water guns are used for the energy source. An LRS-100 energy source synchronizer is aboard to control individual gun performance. Weighing in at 50,000 pounds, the Beaver's initial design loads were found to be underestimated. To compensate for the extra load, 2-meter outrigger pontoons were added to the aft port and starboard sides of the tri-pontoon hull.

Mike McKenzie and Roger Stainbrook arrived from Houston, each for an extended period of service with Party 111. With their help outfitting the recorder and providing field support in the early stages of operation, Steve Barker, Party 111's observer, and the technical team, Don Stirling and Jim Wilson, quickly came to task with the new system. A 6-cylinder diesel engine powering a 35 KW generator was installed for power. Additional equipment included the Central Receiving Equipment (CRE), Digital Recording Equipment (DRE), four air conditioners, enclosed storage for 75 DAU's, batteries (while on charge), radios, and antennae.

Under the watchful eye of Supervisor James Gibson and Party Manager Darrel Elliott, the Beaver and Otter were beehives of activity with mechanics, electricians, welders, carpenters, and installation crews. All modifications and installations were completed and the vessels were on the front prospect less than two weeks after delivery from the factory.

While undergoing installation and testing of the recording system, the Otter was the center of activity for yet another distinguished lot. Chief Navigator Ben Couturier was joined by Eldido Coss from Houston to install the navigation system. The recording vessel uses a full WISDOM® system and a two-boat link. Navigation is accomplished with trisponder beacons located on shore stations, each shore station having been tied to geodetic controls.
Ben was soon joined by William Chu and Barclay Jelly to round out the navigation group. Installation of a navigation receiver and a smart data monitor unit into the navigation boat was first accomplished in the shop, dismantled for transport, and reassembled on the first prospect. Coordinates and fathometer data for each station are committed to system memory as each hydrophone is deployed. At the end of each day, all data are dumped to tape via hardwire link to a computer and tape drive aboard the R/V Western Otter.

The first prospect, Utikuma Lake, located in northern Alberta, was the largest lake Party 111 worked during the 1985 season. Averaging just four meters in depth, it also holds the distinction of being the shallowest lake we have surveyed. It is an environmentally sensitive area where many local people depend on the lake for much of their livelihood and food. A protected habitat for the abundant waterfowl, Utikuma is one of the few areas in the world which hosts breeding grounds for white and brown pelicans.

Concerns over the safety of such an environment are well founded. In order to hear these concerns, a public forum was held to provide project details to interested individuals as well as to representatives of the Gift Lake Metis Settlement and Whitefish Indian Bands which reside on the western shore of the lake.

An independent biological consultant was hired by Western to conduct tests to determine the effect of the energy source on local fish. Seven species of fish were represented in two tests. Three cages were deployed in each test at distances of 1 m, 3 m, and 5 m from a stationary source. Both source and cages were positioned at a depth of 2 m in approximately 4 m of water. No direct or delayed mortality of test fish was observed.

Waterguns were selected rather than more commonly available airguns for several significant reasons: they can be operated in as little as two feet of water without ‘venting’; the signature is very short, in the range of 50 ms, and is highly repeatable; the power spectrum is rich in high frequencies, and the signature can stand alone without the need for complementary

Technicians William Chu (foreground) and Barclay Jelly work aboard the navigation Zodiac.
dissimilar units to tune the signature; and
there is virtually no bubble pulse.

The shooting and recording vessels were
both equipped with a Remote Energy
Source Control Unit (RESCU) that served
as a master/slave controller between the
boats. A UHF link between the RESCU
systems allowed real-time monitoring of
the location of the shooting vessel from the
recording vessel and synchronization of
appropriate closures, so that all shooting
and recording events occur in proper
relation to the time break.

Trisponder beacons were positioned
around the shore to provide accurate radio
navigation for both vessels. The shooting
boat was guided by a trisponder with a
smart distance measuring unit (DMU),
while the recording vessel interfaces tri-
spounder ranging into the WISDOM system.

Six inflatable rubber Zodiaks were used
as line boats for deploying navigation
markers and data acquisition units (DAU).
An additional Zodiac was equipped with
a navigation receiver and smart DMU
which located hydrophone positions along
the preplot line. Once the navigator located
a shot point, the coordinates and fathom-
eter data were logged and a line boat
placed a hydrophone that was anchored to
the lake bottom and attached to a naviga-
tion buoy at the surface. A DAU was then
attached to the navigation buoy and the
hydrophone was connected.

From a late July commencement,
DIGISEIS Party 111 recorded a total of
444 kilometers of 96-fold data on Utkuma,
Sturgeon, Pigeon, and Sylvan Lakes. Work
came to an abrupt halt in early November
with the arrival of sub-zero temperatures.

Data were processed in the Calgary
center using a model-derived statics ap-
proach developed by Steve Lynch, land
processing manager. As several lines tied	onshore wells, Pat Kong and his group
were faced with the chore of sorting out (for
phase correction) traces as both hydro-
phones and geophones were involved in
the transition-zone shots.

As a result of our initial experience,
equipment is presently being modified
and field procedures are under scrutiny
in preparation for the 1986 open-water
season.
Don Stirling operates the positioning and gun control equipment.

On the source boat, waterguns and hose bundles are in for a line change.

Chief Navigator Ben Couturier checks the central receiving equipment aboard the Otter.

Biologists display one of the many varieties of fish in Utikuma Lake.
London office hosts Litton European Managers’ Meeting

Western’s London office, headed by Vice President Joe Saltamachia, was chosen to host Litton’s Annual European Managers’ Meeting for 1985, held on September 25.

A total of 27 delegates attended from Litton’s corporate headquarters and the many European divisions. Dr. Paolo Cella from Western Ricerche in Italy and Joe Saltamachia were the two Western attendees.

The Grosvenor House Hotel in Park Lane, London, was used as the base hotel and on Tuesday, September 24, a dinner was held at the House of Commons. As this is the “house” of England’s politicians, anyone wishing to hold a dinner at the House of Commons must be sponsored by a member of Parliament. Joe Saltamachia contacted the Rt. Honorable Barney Hayhoe M. P., named as Minister for Health by Prime Minister Margaret Thatcher in her new government, and he agreed to act as our sponsor on behalf of Litton Industries, Inc.

The meeting at Western’s facility included presentations by corporate officers and European managers.—Sally Humphreys

Third South American Symposium of COGEODATA

Senior Vice President Carl Savit was one of four special guests delivering a paper at Third South American Symposium of COGEODATA held last November in Lima, Peru. The Commission of GEO-DATA, which belongs to the International Union of Geological Sciences, had appointed Petroleos del Peru (PETRO-PERU), the Peruvian national oil company, to sponsor and organize this third meeting in South America. The First Symposium of COGEODATA had been held in Rio de Janeiro in 1981, while the Second South American Symposium of COGEODATA was held in Buenos Aires, Argentina in 1983.

The theme of this symposium was “The Application of Computers in the Search for Energy Resources” with the objective being to promote the exchange of experiences in the handling of geological and geophysical information by means of computers. In this manner, the symposium provided a transfer of technology and information among the representatives of the member countries. The conference was attended by 76 representatives from throughout South America, the United States, France, Italy, and Germany.

Thirty-one papers were presented on varied subjects such as quantitative seismic and bio-stratigraphy, remote sensing, geochemistry, geothermia, geohydrology, database systems, and computer science. Other special guests delivering papers were Gottfried Gabert and Hernani Chaves representing the European membership of COGEODATA, and Tiziano Cirillo from Escuela Professional de Ingenieria Metalurgica, Peru. Carl Savit also presented a talk on the SLIM® process to the Geophysical Society of Lima at Colegio de Ingenieros during the week of the conference. Juan Vallhonrat translated for Mr. Savit.

The conference was held from November 26-29 in PETROPERU’s excellent auditorium facilities which even included simultaneous translation for both English and Spanish. The next symposium is tentatively scheduled to be held in 1987 in Rio de Janeiro, Brazil and to be sponsored by PETROBRAS.

Mr. Savit’s paper, Computadores en la Exploración, was delivered in Spanish. However, Spanish as well as English versions are available by writing the PROFILE.
Interpretation wins two large contracts

Western Geophysical has recently been awarded two large contracts, both for basin studies. The contracts involve cooperation from various departments of Core Laboratories, Inc. in Dallas (part of Litton Resources Group since 1984) and from the Interpretation department of Western Geophysical.

Basin studies have been performed by Core Laboratories for many years in various parts of the world. Briefly described, such studies utilize all geological and geophysical information available for a basin to construct a comprehensive picture of the basin, including its structural and stratigraphic composition, evolution history, and potential for generation and accumulation of hydrocarbons. The study also describes the types of hydrocarbon traps to drill and estimates the amount of recoverable hydrocarbons.

The first study awarded is located in Jordan and the bid, prepared jointly by both parties, was submitted by Core Laboratories, who now administers the study. The second study is located in Equador and the bid, again prepared jointly by both companies, was submitted by Western Geophysical. Western’s Interpretation department now administers this study.

Western is also conducting a feasibility study of speculative integrated basin studies in domestic land and marine basins.

Discovery sets sail from London

New to the Western fleet in the North Sea is the Discovery, a 262-ft. ship whose renovation was completed this spring in Galveston and London. Originally built in 1974 in Vancouver Shipyard, the Panama-registered Discovery was recently purchased by Western from Cayman Island Vessels.

An A-1 ice-classed vessel, the Discovery boasts twin screws (2,000 horsepower engines driving two propellers independently) and the WISDOM® navigation system.

With a marine crew of 21 and a seismic crew of 24, Party 114 will be working on a two months on/ one month off schedule. Fred Dunn is the party manager, working out of the London office.

Jones named general manager of DSS

George R. Jones has been named general manager of Downhole Seismic Service, a subsidiary of Western Geophysical. Jones, headquartered in Houston, will oversee DSS borehole seismic acquisition and processing activity and participate in the development of new technology to enhance wellsite seismic surveys. Paul Henson in the DSS office in Harvey, Louisiana, will continue as vice president of operations for DSS data acquisition and wireline services, and will report to Jones.

DSS provides acquisition and processing of borehole geophysical surveys on land and offshore, including velocity surveys, VSPs, and salt-dome proximity surveys.

Supervising contractors and the overall working condition of the ship is Port Engineer Axel Thompson.

Docked in Galveston in February, the Discovery prepares to leave for London for conversion to “next generation” equipment.

Crew members of the Discovery test equipment prior to launch.
Supercomputers at Western

Three-dimensional surveys, depth migrations, the SLIM inversion process, and a host of other new and developing techniques and technologies demand even more computing power. To stay ahead of these growing demands, Western has recently installed two supercomputers. In the London processing center, the new arrival is an Amdahl VP 1200, while at HDC, an IBM 3090-200 fills the supercomputer slot.

Supercomputer ratings are usually quoted in megaflops. A megaflop is the ability to perform a million floating-point arithmetic operations in one second. Our Amdahl is rated at 533 megaflops; that is, it can do 533 million multiplications or additions every second. The 3090-200 has a rating of 216 megaflops.

Powerful as these two machines may be, they have only increased Western’s total computing capacity by about 40%. Within the past year or so, we had converted some of our older top-of-the-line IBM computers to supercomputer status by equipping them with STAR array-processors, each of which contributes 100 megaflops to the computer to which it is attached. Counting the five installed STARS and some forty of the older array processors still on line, Western now has a total computer capacity of more than 2,500 megaflops (2.5 gigaflops or billions of floating-point operations per second).

Twenty years ago when Western had just begun to build its digital computer capacity, we pioneered in the introduction of special-purpose computer devices to improve our ability to turn out work for our clients accurately and on time. Then the total capacity of Western’s machines was something like 5 megaflops. A five-hundred fold increase in twenty years has enabled us to continue to render our clients the most advanced services in the shortest possible time.

At the present rate of advance in seismic exploration methods and in computer design and capacity, it should not be surprising to see our next 500-fold increase take only ten years. In 1996, we shall probably be talking teraflops (trillions of floating-point operations per second).

Aero Service completes a non-fuel minerals atlas and study in Honduras

Aero Service recently completed an aeromagnetic survey of nearly all of the country of Honduras and has now produced a special purpose atlas of non-fuel mineral resources detailing occurrences of gold, silver, copper, tin, lead, zinc, and more than a dozen other mineral commodities in relationship to the magnetic anomalies observed in the country.

The rugged forest and jungle-covered mountains of Honduras have been worked for gold since pre-Columbian times. The Aero study, using the latest high-sensitivity aeromagnetic technology, has indicated several promising new leads in the search for gold deposits in Honduras. Although the gold has no direct magnetic response, its association with veins and shear zones in hard rock areas and with other heavy minerals such as magnetite in stream channel deposits (called ‘placer’ deposits by miners) provide the rationale for the use of magnetics as a quick nationwide reconnaissance tool.

Both the Honduras minerals atlas and the Litton Resources Group study of the hydrocarbon potential of Honduras (discussed in the last issue of PROFILE) arose from the Aero Service speculative aeromagnetic hydrocarbon reconnaissance program in Honduras. Discussion with the Government of Honduras and their consultants in the spring of 1985 suggested to Aero Service personnel that the opportunity existed for a separate comprehensive non-fuel minerals atlas developed from the same data set, as well as an integrated hydrocarbon potential study to demonstrate, in a concrete form, the Litton Resources Group’s overall capabilities in assessing the hydrocarbon potential of the country.

Both projects were initiated and worked on in the Geophysical and Remote Sensing Interpretation group headed by Glen Penfield. The minerals study was authored by Penfield, William Cathey, and Subbarao Yalamanchili with follow-up exploration recommendations (largely with electrical methods and geochemical sampling) suggested by Richard Crosby, Peter Emmet, and Steven Faber. The atlas, with more than 300 figures and 400 pages, was expertly assembled by Kaye Lawanson and Ann Symes.

This cross-section shows the ground surface, magnetic curves, and calculated geologic sources of the magnetic anomalies.
An Aero Service aircraft boasts both fixed (stinger) and towed (bird) magnetometer installations.

The rugged, heavily vegetated countryside of Honduras has been worked for gold since pre-Columbian times.
down Western’s line
for 30 years

Vice President Jimmy Jordan (left) and Quality Control Supervisor Billy Scroggins (right) reflect on Billy’s 30 years of service.

November 21, 1983 marked the 30-year service date for Quality Control Supervisor Billy O. Scroggins. Billy works in Houston data processing under Vice President Jimmy Jordan.

In 1955, Billy joined Western as a computer on Party 20. His work kept him in many small western towns in Texas until 1958, when he was promoted to chief computer for Party 88, located in Bolivia. It was during this stint that he met his wife, Mary, and three years later they were moving to the Canary Islands where Billy was chief computer for Parties 93 and 98. Another move in 1963 took Billy to the Netherlands where he worked as assistant party chief on Western’s first marine project in the North Sea. The party was laying dual-purpose cable in an icy, heavily trafficked ocean.

Returning in November 1963 to the United States, Billy took vacation before leaving for Nigeria, again as assistant party chief on a marine crew.

By 1965, Billy had been transferred to land once again and was firmly entrenched as manager of a Western analog processing center in London. In 1966, Billy was promoted to analyst in the London digital processing center, where he remained for 12 years, until 1978. During that time, he witnessed the center’s expansion from a two-room office to the present-day complex.

In 1978, Billy, a native of Louisiana, was called back to the United States for the first time in 20 years! He was then assigned the job of quality control supervisor for special client group processing at the Houston data center.

In honor of Billy’s 30 years of service, a luncheon was held at Vargo’s Restaurant in Houston, attended by Billy, his wife Mary, Jimmy Jordan, and many others.
for 40 years

Field Supervisor T. J. Phillips (center) chats with President Neal Cramer (left) and Vice President Ben Langston (right) about the “good old days.” T. J. celebrated his 40th year of service last November.

T. J. PHILLIPS HAS SPENT HIS 40 years with Western in a steady rise from helper and shooter on Party 18 to field supervisor for east and southwest United States. His original stint with Western was in Laurel, Mississippi until it was interrupted for military service. Following his discharge, he was assigned to Party 21 as an assistant observer in Tennessee.

His progress with the company was rapid, and T. J. was soon promoted to observer, chief observer, and in 1966, to assistant supervisor assigned to the Midland, Texas office. Two years later T. J. became field supervisor and worked out of Midland until 1971 when he moved to Galveston. He currently offices in Houston.

Through the years as he traveled the “doodlebug trail,” T. J. has covered much of the United States, including the Rocky Mountains, the east, the southwest, and the Gulf of Mexico. Also, he was in Venezuela on a Lake Maracaibo crew.

Currently working for Vice President Ben Langston, T. J. celebrated his 40 years of service at a luncheon held at Vargo’s Restaurant with fellow co-workers including Ben Langston, Dalton Taylor, Joe Walker, Richard White, and Janet Loveday.

SPRING 1986
In the London office, Facilities Manager Gerry Reynolds discusses some business of the day with Secretary June Warner.

Television Technician Greg Trest shoots film footage, edits, and handles duplicating and distributing videotapes throughout the Western network.

Working under Vice President Ken Larner, Research Geophysicist Patrick Ng writes a new research document.
Party 347 Party Manager Greg Neville, working out of Colombia, is pleased to present the crew’s mascot “Smiley Dog” in PROFILE. (Photo by Wayne Prince)

As geophysical technician in the Marine Velocity department, Matthew Padon picks intersections for velocity consistency on a survey.

Having worked for Western 11 years, Payroll Clerk Reva Ross handles all payroll for hourly field personnel.
Reviewing crew activity statistics are Manager of Purchasing Dave Durham (left) and Supervisor of Instrumentation Royce Landman.

After coming off the Western Anchorage last season, Harry Walkoff, geophysical technician, now works in marine seismic data.

Paco Delgado is computer operations supervisor in Western's London office.
Clerk Linda Highburger sorts checks in the payroll department.

In the London office, Data Storage Supervisor Alan Hobbs and Data Storage Assistant Vera Claridge check daily data entries for the tape storage library.

Research Geophysicist Carl Godkin (left) and Senior Research Geophysicist Walt Lynn look at amplitude vs. offset analysis results.
Diane Parker (right), Training and Documentation production supervisor, teaches the fine points of computer word processing to Secretary Candy Lafayette.

London Tape Librarian Habib Akram runs a job on the 3480 tape drives.

Stefano Volterrani, tape librarian in London, loads jobs in the Amdahl 380.
YES! I would like to receive additional copies of the following Western, Aero Service, and Downhole Seismic Service brochures and technical papers. I have indicated my preferences and desired quantities in the spaces provided.

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(Continued on following page)

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party pickings

Party 752's vibrators shake down a turn row outside of Verhalen, Reeves Co., Texas.

PARTY 752—TEXAS

Kevin Drake, Reporter
Greg Brannon, David Coppola, and Joe Perez, Photographers

There have been many changes for Party 752 over the past few months. First we would like to pay our respects to veteran party manager Harold Dwight Rich, who died of cancer on September 10, 1985. Dwight had been with Western 25 years, serving throughout the southern United States and in Australia. Dwight joined 752 in 1975 as a surveyor and was later promoted to party manager. He will be sorely missed by all who knew and worked with him.

The duties of party manager have been assigned to Greg Brannon, son of the late area manager Willie Gene Brannon. Greg, formerly field clerk for Party V-1, wasted no time leading the crew to the first production dinner in over a year.

Production in December was at a three-year high and credit can be shared equally by all crew members. Party 752 started the month of December in Edinburg, Texas, moving from there to Rio Grande City, on the Rio Grande River. Our next move was a long one, just over 500 miles to Pecos, Texas. Permit agents B. R. (Slim) Gilbert and Jackie Bowman were the first to make the move, gaining necessary permission for the crew to work. Keeping ahead of the fast-moving recording crew was not so easy for chief surveyors Charles Edwards and Donnie McLendon and Surveyor Joe Perez. They managed to keep a line ahead thanks to the efforts of helpers Danny Ramirez, David Gonzales, and Ray Lara.

Moving 500 miles north of our usual south Texas stomping grounds didn't seem to bother juggling Fidel Benavidez, Ruben De La Cruz, Gilbert Moreno, Manuel Moreno, and Ruben Moreno. The move presented observers David Coppola and John Posada with some unusual problems, such as having the recorder's air conditioner freeze up instead of overheating. The absence of dozed trails surprised truck drivers Antonio Tamez III, Conrado Vela, and Joe Vela, who managed to keep the cables and flyers moving despite a survey outside of Pecos, Texas.

Survey Helper David Gonzales conducts a survey outside of Pecos, Texas.
plague of flat tires that kept Field Clerk Kevin Drake busy running tires from the field to the station and back. The lack of dozed trails didn’t hinder Troubleshooter Faustino (Frost) Bernal, who kept the line looking good and hauled phones and cables in for repair. Cable Mechanic Jim Barbour, a 22-year Western veteran, always had a stack of repaired phones ready for the crew in the morning.

The colder weather caused some starting problems for vibrator operators Lionel Alaniz, Richard Cuellar, Martin Garcia, Ismael Martinez Jr., and Freddy Silva, but Vibrator Mechanic Salvador Silva had the answer: an earlier start and more warm-up time. Despite all obstacles, the crew finished and returned to Beeville in time for a well-deserved Christmas break.

The best way to start a new year is with a production dinner and that is how 752 started 1986. The crew enjoyed a steak and shrimp dinner at Shirley’s Steakhouse in Beeville. Everyone who attended had a good time and expressed the hope of enjoying another one soon.

Congratulations to Party Manager Greg Brannon and wife, Missy, as they welcomed their first baby, Sara Gene Brannon, born October 11, 1985. Good luck to Chief Surveyor Jim Yuill who recently transferred to Party 703. We wish all Westerners a safe and productive 1986.

From left to right, Truck Driver Conrado Vela, helpers Manuel Moreno and Gilbert Moreno, Vibrator Operator Lionel Alaniz, and Helper Chris Rodriguez show that weather in Texas is not always hot and humid. Party 752 worked 500 miles further north than usual recently.

Vibrator Mechanic Salvador Silva repairs a recorder’s frozen air conditioning system.

Chief Surveyor Charles Edwards works with his surveying instrument ahead of Party 752’s recording crew.

Party 752 celebrated a production dinner in Beeville, Texas in January.
Western’s Processing Center 976, located in Calgary’s downtown core, began as an appendage to the main northeast facility. The 976 Center has now taken on a character of its own.

With personnel using terminals linked to the northeast center’s systems by telephone modem, the group started work on one of North America’s largest seismic land surveys for a local client. In addition to terminals, a printer for listings was also set up to help ease logistics in transporting listings and plots between centers. With space at a premium and a massive volume of data to be processed, the group quickly adopted leaner and more efficient methods of tape listing and plot management.

Located on the second floor of Palliser Square West, the group processed numerous jobs for the northeast Center’s system. Group Leader Terry Mikoch and five technologists forged ahead with phase one of the prospect. At times, with as many as 2,000 lines, Western’s software and hardware were pushed to limits usually not reached in everyday processing. Needless to say, the equipment was equal to the task.

While working on phase one of the prospect, planning for the actual Center was taking place under the watchful eyes of Manager of Data Processing Frank Ralton and Manager of Operations Marvin Bent. Details, ranging from the complexities of setting up the computer to matching carpet, occupied a good deal of their time during the summer and fall of 1984. Finally, with all agreements and negotiations in place, two days before Christmas 1984, construction on Western’s newest Processing Center was underway.

The processing group was temporarily relocated to offices immediately above the proposed new quarters. Drilling and banging became a constant reminder of progress on the new Center and after seven months, the group was anxious for additional space and personnel. The numerous advantages of an independent system were obvious in both the downtown and main offices.

As construction progressed, daily updates were provided by members of the group for those unable to resist the temptation to peek in and see how things were going. As completion date neared, and with the computer system in place and being tested under the supervision of Bryant Misener and Jay Fares, there was an aura of excitement.

The new Center has a single 4381 CPU with one string of 3380 disk drives, linked to eight of the new 3480 cartridge drives, with three 3420 tape drives for demultiplexing field tapes. Plotting is via online Versatec plotters, while printing is done on one 3203 maintained by a single librarian. Working in shifts of two, under an operations supervisor, the system has been running 24-hours a day since bringing it on line, with only marginal downtime for system changes and maintenance.

An addition to the conventional system, rooms were set up both for SLIM® and 2-D and 3-D CRYSTAL® system capabilities, offering complete interpretation facilities for the client. Though a link to the main northeast Center’s system is maintained through a 3705 communication controller, the feeling of dependence on the northeast Center has been gradually decreasing.
The Center was officially opened mid-April 1985 and there was an open house for the client and the management and staff of Western Geophysical. Demonstrations of the CRYSTAL system, 3-D, and computer room tours were the most popular activities.

Since its inception, the 976 Center has become a closely-knit group who pride themselves on their ability to process a somewhat unique prospect.

PARTY 743—CALIFORNIA

Dick Shields, Reporter
Tommy Smith and
dick shields, Photographers

Hello fellow Westerners from the south San Joaquin Valley of California! Party 743 is engaged in a combination effort with Party 309 and Party 311 in a multiple vibrator, helidrill, conventional and buggy drill operation on San Emigdio Mountain.

Observers Tom Smith and Jerry Reiser, with their junior observers Randy James and Dan Miller, have had an interesting time maneuvering the master-slaved 240-channel trucks to some very scenic (read that s-c-a-r-y) set-ups.

Cable Pusher Jeff Jacobsen and cable truck drivers Mike Grammer and Geronimo Hernandez have been learning new techniques for getting cable and phones into steep and difficult terrain. There have been a few cliff hangers both for juggies and jug trucks. The excitement and challenge have made for a unique learning experience that most of the crew will not forget.

Helpers Wayne Farmer, Mike Guill, Keith Jurasevich, Andy Guill, and Vince Steiber have their hands full dragging out much of the cable and phones as well as using a helicopter to spot them in inaccessible areas.

Surveyors Jack Meyers and Mike Hutchings have had Cheryl Darby, Warren Zahl, Jim Brooksher, and Keenan Williams continuously laying out line, staking shot points, velocity holes, and vibrator points—plus getting some excellent drive-around maps assembled.

Brad Smith, drill coordinator and powder man, has kept Steve Cheadle busy supplying drillers Blackie Waldron, John Clingan, Fred Leonard, Roy Ireton, Mark Wickenheiser, and Trent Anderson with bits, mud, powder, caps and water. Getting the drill bits proved to be especially difficult since the shipper thought they belonged to a Georgia hospital surgery department. Root canal, anyone? This is much to the regret of drill helpers Scott Nickols, John Husen, John Wickenheiser, and Gary Williams. They were capably overseen by 309’s Party Manager Rod Lund.

Assistant Group Leader Bonnie Cowles and Technologist Jon Goodman, also from the downtown center, analyze airgun data.

At his desk in Calgary’s downtown center, Group Leader Dave Chown gives a final quality control check.

Rain is infrequent in California during the summer but Party 743 encountered some unexpected and heavy storms.
Party Managers Dick Shields and Joe Broussard as well as Assistant Party Manager Spencer Harris and Clerk Herb Steffle are learning new and valuable lessons working in the rough terrain with all types of equipment. Joe got his first helicopter ride and then wondered why he had bothered; the anticipation was more of a thrill than the actual flight!

Vibrator Mechanic James Samuel and vibrator operators Ken Farrow, Bob Dietz, Jim Galindo, and Rick Blystra took turns with shooters Jesse Lugo and Casey Larsen providing our energy source. The vibrators got to remain in the lower elevations and flatter terrain which James sincerely appreciated.

This has been an interesting, fulfilling three-month project handled by supervisors Jerry Crowell and Ward Maricle. So until the next time...we will see you shaking and shooting farther on along the line.

Pictured is San Joaquin terrain as seen by observers Tommy Smith and Jerry Reiser and assistant observers Dan Miller and Randy James.

Driller Mark Wickenheiser’s heldrill is placed on the steep side of a hill.

Ken Farrow, Jimmy Galindo, Bob Dietz, and Rick Blystra guide vibrators on flat land toward more mountainous areas.

PARTY 703 – TEXAS

Dave Biersner, Reporter
Cayetano Nunez and
Dave Biersner, Photographers

Party 703 continues to roll along with another outstanding production year, working on a multi-year project on a ranch in south Texas.

There have been many changes along the way, both in management and equipment. Area Manager Roscoe Sullivan retired and Supervisor Gene Brannon passed away recently. Both will be missed for their leadership and expertise in the field. Richard White, affectionately known to the crew as “The Mighty Whitey,” was chosen as the new area manager of south Texas. His innovative ideas and “go-getter philosophy” are already paying off in black ink.

Charlie Yanez, party manager, was influential in landing our present contract. Dave Biersner, field geophysicist, relieves and assists Charlie. Supervisor of Instrumentation Marty Nurre has been a life-saver dealing with the problems that arise from a new system. Dalton Taylor continues to be a great help as field supervisor in maximizing our efficiency and quality.

Jim Blair, permit agent, has been a loyal Westerner for the past 32 years. Jim keeps our surveyors going with plenty of line and occasionally helps out the other south Texas crews in obtaining rights of way. Chief Surveyor Duane Eudy has recently switched to the total station system and computer with guidance from recent transfer Jim Yuill. Catetabo Nunez and newly promoted Surveyor Mike Hasette supervise bulldozing operations and layout. Assisting them are helpers Jimmy Hasette, Jimmy Danysch, and newcomers Jesse Chavez and Jose Nunez.

Head Observer Dennis Rinehart has done an outstanding job adjusting to the new equipment. Supporting him is our other observer, recent transfer Robert Ashton. Team leaders Hipolito Garza and Enrique Garza have done an excellent job adapting to the daily problems of the new system. Truck drivers Braulio
Garza, Jessie Gomez, Rogelio Ortiz, and Norberto Ortega make sure we keep moving. Juggles Ruben Garza, Clemente Garza, Jose Garza, Raymundo Cuevas, Gonzalo Gonzalez, Enrique Zavaleta, Jr., and newcomer Joe Serrano do a great job negotiating with our batteries, remote units, and 1,000-ft. cables, not to mention the exotic game, incredible packing across sand dunes, and coastal marshes.

The new recording system also accompanied larger, more powerful vibrators (LRS-315) which Steve Bernal, 703's ingenious vibrator mechanic, keeps shaking through thick and thin. Backed up by Lead Operator and Assistant Mechanic Rufino Ojeda are the rest of the operators Genaro Garza, Antonio Juarez, and Enrique Zavaleta, Sr. Also helping Steve with more complex problems that arise are vibrator supervisors Boots Dungan and Richard Zowie. Field Mechanic Truman Gilmore remains in the shop in Beeville looking after all of south Texas' vehicles. Last but not least Imelda Alvarez, 703's cable technician, has proved her flexibility in adapting easily to the fiber-optics cables and batteries.

Party 703's future looks secure with abundant work on the "ranch" for some time to come, while we continue to strive for the utmost in professionalism and quality data.

Observers Enrique Garza, Dennis Rinehart, and Jose Garza (left to right) perform monthly tests on equipment.

Observers Robert Ashton (left) and Dennis Rinehart (right) are pictured with the recording instruments.

Team Leader Enrique Garza (center) reviews layout operations with the late shift. Pictured left to right are Jimmy Danysch, Jose Garza, Antonio Juarez, Enrique Garza, Raymundo Cuevas, and Norberto Ortega.

Party 703's back pick-up crew consists of (left to right) Rufino Ojeda, Enrique Zavaleta, Jr., Raymundo Cuevas, Gonzalo Gonzalez, Ruben Garza, Jose Garza, and Braulio Garza.
Party 786 begins the day with an early morning rain.
Totally isolated, Crew 785 often works for two to three weeks at a time before taking a break.

Acting as alarm clock, Cook Glen Armstrong wakes Party 785 with an early morning bang on the steps.

Assistant Party Manager for Party 785 is Rick Adams.

Surveyor Tony Moss works for Party 785, located in Western Australia.
Party 786 Shooter Mick Foster (blue shorts) and Observer Mac Summer (right) prepare to load shots for the drill crew outside of Brisbane, Australia.

Testing the battery on a recording truck is 785’s Mechanic Lindsay Warry.

The jug crew for 786 pulls in the line.

From left to right, Ron Dickerson, Birwyn Jenkins, Cindy Cole, and Clare Easterbrook are part of 786’s jug crew.
On October 13, 1985, Gulf Coast Marine division had their second annual Fish Fry and surprise party for Manager Mike McCormic.

The celebration took place at Linda and Mike McCormic’s home. All the catfish you could eat was supplied by Sherry and Art Teutsch and a variety of side dishes were brought by all the attendees. A special cake was made in honor of Mike’s birthday, complete with famous trick candles. After about 20 tries to blow them all out, Mike finally decided to pull them out and stomp on them.

The highlight of the day was when champion swimmer Chester Roundtree decided to take a dip in the pool. Little did he know that the reason no one else was swimming was because the temperature of the water was less than desireable! — Virginia Nowak

Fred O. Leonard (right) receives his 25-year pin from Party Manager Dick Shields at a small gathering held for him at the Holiday Inn, Bakersfield, California. Fred was recently transferred to Party 743 in California to man one of their Mayhew 1000 drill rigs. Attending the party for Fred was his wife, Jeanne, Field Equipment Supervisor Rod Lund, Driller Mark Wickenheiser, Party Manager Joe Broussard and Assistant Observer Dan Miller.

Supervisor Mike Shoup (left) and Field Supervisor Art Teutsch (right) are amused to watch Manager Mike McCormic attempt to blow out trick birthday candles.
Bogota Manager Gary Jones (right) and his wife Joan celebrated a Thanksgiving adoption service with their new children Matthew (held by Gary) and Mara (held by Joan). The service was held at St. Albans Episcopal Church in Bogota and was led by Father Colby (left). Standing between the couple is Cindy Smith, the children’s godmother.

Accountant Fred Williams retired from the London office in August, 1985. A luncheon, attended by Vice President Joe Saltamachia and Area Manager Tim Briggs, was held for Fred and his wife Gladys at the Camellia Restaurant.

Shop Mechanic Ernest Kinast, flanked by Shop Supervisor Dennis Dornstauder (left) and Operations Manager Jock Coull (right) boasts 20 years of service with Western in Calgary. Ernie will soon be retiring and plans to live in the Okanagan Valley of British Columbia.

Playback Supervisor in the London office, Mike Byrne (left) receives his 15-year pin from Steve Blick, manager, data display and storage.

Graduating in May, 1986, from Douglas County High School in Castle Rock, Colorado is Donna Gardner, daughter of Denver Processing Manager Donald Gardner.

Donna is a member of the National Honor Society, recipient of the Gold Award (Girl Scout’s highest award), has taken courses for advanced credit in Spanish, English, physics, and math, and is active in the band and orchestra. She has been accepted to the honors curriculum at Miami University in Oxford, Ohio.
Supervisor Jerry Crowell (left), operating out of the Woodland office, receives his 15-year service pin from Area Manager Nolan Webb in late January on one of Jerry’s many trips to the Bakersfield office.

Cutting his retirement cake during a farewell party given by Western Research co-workers is Party Manager Hal Hansen. Hal worked for Western for 16 years, first with Gulf Coast Marine, then West Coast and Alaska Marine, and finally for Western Research as party manager for the Anne Bravo.

Party Manager Del Hill presents Observer Dick Roberts (left) with his 20-year pin in the hills outside of Santa Monica, California. Dick began working for Western in Plentywood, Montana in May, 1965.

Gary L. Fair (left), manager of data processing, celebrated his 20-year service anniversary with Vice President Jimmy Jordan on January 8.

Prior to an anniversary luncheon, Gulf Coast Marine Manager Mike McCormic (left) and Vice President John Laker (right) posed for a picture with Field Supervisor Art Teutsch (seated), who reached his 20-year service date on February 21, 1986.

On Nov. 1, 1983, Assistant Party Manager Jack Skaaning (left) celebrated 20 years of service with Western. Jay Silverman, supervisor, Mid-Continent U.S. (right) awarded Jack his pin.
Marianne Clarke was editor of PROFILE for 23 years. This photo was taken just before her retirement in 1981.

Marianne Clarke joined Western in 1958 and retired in 1981. She died January 16th in a California hospital, and was buried in Kansas where she was born.

A lot of us never knew Marianne... a great many of us did. I never met her personally; but I was one of the fortunate ones...I knew Marianne—

Marianne was a Westerner...She cared—And, for a few of us, she and her ideals will live on.

For 23 years, Marianne was editor of this publication—She called, begged, and pleaded with many of us to please get our articles and stories in “on time” so the publication could reach the far corners of the earth when Westerners expected it—and, believe me, though she was seldom told, her calling...and pushing...and threatening...were all extremely important in the publication of one of the very best company magazines ever printed.

Yes, Marianne, you were appreciated; and we are glad you were a part of our Western Family.

Signed,
...a fellow Westerner

February 13, 1986

Friends of Marianne Clarke
Western Geophysical Company of America
P.O. Box 2469
Houston, Texas 77252

On behalf of my brother and our families, our deepest thanks for the very thoughtful contribution that you have made to the American Cancer Society Memorial Program in Marianne’s name.

Her years at Western were the happiest and most fulfilling of her life. In fact, I think that the PROFILE really was her life and she thought of it as her own.

The many deep and enduring friendships that she made among the Los Angeles and Houston staffs, as well as those she made through correspondence with the Western field crews, meant as much to her as the members of her own family because, in many ways, Western was her family.

May God bless you all.

Sincerely,

Sam Clarke

In 1962, Marianne accepts an award from the University of Southern California for highest journalistic standards for PROFILE Magazine.
As this issue of the PROFILE went to press we were all saddened to learn of the untimely death of Valery Gelfand. Valery died the morning of April 10, 1986. Valery had been hospitalized for a serious illness but had returned home and was thought to be recovering.

Dr. Valery Gelfand will be sorely missed, not only by his family but also by his fellow members of the Research department, all Westerners who knew him, and the seismic research community at large. Valery’s good humor and ready wit never left him through his trials and tribulations. He was always ready with a quip or an anecdote no matter how solemn an occasion. His wide-ranging inventiveness had become legend in the Research department and among different organizations of the Litton Resources Group.

An ardent fisherman, Valery applied his knowledge of the behavior and hydrodynamics of certain fish varieties to the design of a quieter hydrophone to be placed on shallow ocean bottoms. He applied his knowledge of well-logging equipment to the design of a novel geophone for use deep in an oil well. All in all, he was awarded two patents in his native Russia before coming to the United States in the summer of 1981. He added one more (for a geophone to be used in a deep well) in the United States and had several more patents pending.

Valery’s wide interests ranged from his completion of work for a doctorate in geophysics from Moscow University to a ranking in karate (2nd in the city of Moscow) and deep interests in art and classical music.

Born on June 21, 1937 in Moscow, Valery had a distinguished career in geophysics in the Soviet Union and Poland. He, his wife Lia, and son Alexi, accompanied by his mother, Sofia Gelfand, came to the United States as refugees in the summer of 1981. Within a few days of his arrival in Houston, Valery joined Western as a Research Geophysicist, and shortly thereafter he was promoted to Senior Research Geophysicist, a position which he held until his death.

Valery was featured on pages 4-7 of the summer 1984 PROFILE for his distinguished achievement in the invention of the SLIM process for which he received the Charles B. Thornton Litton 1984 Advanced Technology Achievement Award.

Displaying inherited artistic talent at age 17, Alexi Gelfand painted this portrait of his father.

Valery often attributed his work motivation, as in developing the SLIM process, to laziness. He is pictured here enjoying a lazy day in Port Aransas, Texas in 1982.

“It’s shish kabob!” “No, it’s shashlik!” Oz Yılmaz and Valery banter over barbeque... Turkish or Russian?

A fishing enthusiast, Valery displays a prize catch during a Christmas outing at Lake Conroe, outside of Houston.

Mark joined Western in 1980 and Ruth joined in September of 1984. They now live in Surrey.—Sally Humphreys

In a traditional Moslem ceremony, Technical Instructor Shahid Farsiq married Afsheen Aziz on December 27, 1985 in Karachi, Pakistan. The groom's family held a party, called a valima, for the couple on December 29. Shahid works in the Houston office in Training & Documentation, under the supervision of Dave Turner.

Patrick and Yolanda Gould were married in Bogota, Colombia on December 23, 1985. An accountant for Party 531, Patrick is shown with Yolanda and Westerners from the Bogota office. From left to right are Joannie Jones, Resident Manager Gary Jones, Yolanda and Patrick Gould, Party 342 Surveyor John Dickson, Yolanda Browne, Party 347 Vibrator Mechanic Noel Browne, Party 531 Secretary Pilar Lozano, Party 346 Mechanic Don Rooth, and Dixie Howell.
Future Westerners

John Michael Stathopoulos  
born July 1, 1985  
son of David Stathopoulos  
Geophysical Analyst  
Houston  

Ashley Mathew Harrison  
born September 26, 1985  
son of Paul Harrison  
Marine Catering Supervisor  
London  

Laura Renee Fisher  
born April 4, 1985  
daughter of Steve Fisher  
Resident Programmer  
Singapore  

William Coy Coltharp  
born December 4, 1985  
son of Rodney C. Coltharp  
Stationary Engineer  
Houston  

Sarah Gene Brannon  
born October 11, 1985  
daughter of Gregory Brannon  
Party Manager  
Party 752  

Adam Shorrock  
born September 26, 1985  
son of Paul Shorrock  
Gun Mechanic  
Party 61  
grandson of Peter Shorrock  
Compressor Engineer  
Party 102
They Serve

Service Anniversaries...November, December, January, February

40 YEARS
Jordan, James B.
*Phillips, T. J.

39 YEARS
Haug, Kurt

36 YEARS
Trippel, Richard C.

34 YEARS
Gehring, Carl R.
Riley, Wilbur W.

33 YEARS
Langston, Benjamin L.
Perdew, Harold T.

32 YEARS
Brooks, George
Coul, John T.

31 YEARS
*Morris, Roy

30 YEARS
Bratos, Bebo
Larsen, Palmer L.
Scroggins, Billy O.

28 YEARS
Bakke, Ronald D.

27 YEARS
Birdsong, Don L.
Hendricks, John L.
Scott, James R.

26 YEARS
Hudson, Mark N.

24 YEARS
Anderson, Robert K.
Arnold, Thomas J.
Fuller, Alfred J.

23 YEARS
Cain, Donald F.
*Curtis, William C., Jr.
Gardner, Donald D.
*Schwartztisher, William C.
Walker, Joseph F.

22 YEARS
Delgado, Juan F.
*Edwards, Charles Allen
*Graham, Grover R.
*Lopez-Diaz, Claudio

21 YEARS
Schmidt, William Clayton
*Williams, Wilmer C.

20 YEARS
Kinst, Ernest
Laker, John D.
*Skaaning, Jack
Teutsch, Arthur E.

19 YEARS
*Anderson, Raymond
*Bolduc, Maurice
Clark, Ellis W., III
*Dornstauder, Dennis
Hancock, Guy John
Metcalf, Leventon
Peck, Francis Roy
*Rackham, Sydney
Robblee, J. L.
*Selke, Otto
Siems, Lee E.
Wu, Changsheng

18 YEARS
Jones, Henry Curtis
King, Bernard Michael
*Sadler, Terry J.
Stanland, Russell O.

17 YEARS
Barker, Josh W.
Clark, Donald R.
Hearn, Harvey A.
*Isgrigg, Richard O.
*Lucas, Rodney
Mateker, Emil J., Jr.
*Merlino, Francisco
Skerl, Damir S.

16 YEARS
Benedik, Warren
Camacho, Mario
*Davila, Maximio F.
Gilbert, Burlis R.
Machacek, William Joseph
*Russell, James Barton
*Vagt, Volker

15 YEARS
Bice, John Wilson
Crowell, Jarett Lee
Darnall, James Milton
Goodman, Hugh
Hill, Delmar Ellis
McCleery, John Arthur
Scott, Parker Wright
Stewart, Max Ross
*West, Frank

14 YEARS
*Amezquita, Amparo
*Andrew, Leon
Bernal, Faustino, Jr.
Castillo, Andres, Jr.
Garza, Margarito M., Jr.
*Hill, Patrick George C.
Lorenzwicz, Edward
*Montour, Russell
Paddock, Danny L.
*Peters, Jonas W.
*Petersen, Lloyd H.
Smith, Gordon Gibbon
*Solonenko, Doug
Thielvoelt, Dean Wayne
*Trotter, Thomas Hugh
*Vacek, Tillie Ann

13 YEARS
Cunningham, David
Francis, Rodney Graham
Gauger, Larry Alvin
Goldberg, Stanley S.
*Moats, Donald F.
Scheliga, Alfred
Scheliga, Mary H.
Senter, Richard E.
Vallhovnat, Juan B.
*Wilson, Ronald J.

12 YEARS
Benson, Paul Lloyd
Carney, Frederick G.
*Clark, Al W.
*Elliott, Darrel
*Favor, Mary Beth
*Garza, Fernando
Hall, Richard C., Jr.
*Hickam, William M.
Ho, Emily C.
Kingshott, David J.
Maher, Tim J.
Peck, Patrick Allen
Pileggi, Sherri
Renner, Ernest
Richardson, Henry H.
Schoeppe, Robert A.
*Smith, Frederick L.
Smith, Sheila Ann
*Snowman, Leo F.
*Sommerville, Norman White, William R.

11 YEARS
Armato, Anthony J.
Bowers, John P.
Breville, Frances V.
Brookes, Ralph K.
Burton, Martyn
Clulow, Bruce Sturt
*Daniel, Karol Layton
*Davis, Steven Howell
*Dupree, Gary David
Frentz, Richard Joseph
Gilliam, Glenn E.
Gil Martel, Antonio
Goertz, Robert A.
Ibrahim, Aly
Livingood, Bobby P.
*Lund, Roderick D.
Machacek, Deborah Lynn
*Mangum, Leo Wayburn, Jr.
McNew, Billy D.
*Mitchell, Robert L.
Neiff, Christopher Blaise
Ost, Lyle H.
*Rainwater, Richard C.
Schembr, Gaetano
Sosa, Antonio Naranjo
Stroich, Danny J.
*Stueland, Jeffery L.
Tarnosky, Michael J.
*Thierjung, John C.
Turo, Leon
*Wagner, Lawrence E.
*Wilkinson, James Phillip
*Williams, Archie

10 YEARS
Barrett, Leicester J.
*Bereznak, Paul
*Dawson, Christopher J.
*Dinch, Erol
*Klamer, Jeffrey Paul
*Leach, Edwin W.
*Marcinak, Jeffrey J.
*McGlynn, Bruce Hubert
*Ness, Raymond R., Jr.
*Rabczuk, Enrique
*Shptomkin, Karina
*Wyatt, Harley St. John

9 YEARS
Alghamdi, Saeed A.
Allgood, H. Dean
*Arnold, John David
*Bousserhane, Mostapha
*Bulo, Ramiro Juan
*Campbell, Robert
*Carter, Steve L.
*Chown, David J.
*Cook, Paul
*Cree, Douglas G.
*Dodge, Harland P., III
*Gillooly, John F., Jr.
*Jacobsen, Jeanette
*Jacobsen, Jeff Lynn
*Koroba, George Paul
*Lauck, David Stewart
*Malak, Mamdouh S.
*McWeeny, Shawn
*Meister, Lee William
*Milne, Ian Campbell
*Mosley, Gregory S.
*Mouton, Loretta G.
*Parker, William M.
*Posada, John David
*Ramirez, Daniel
*Sander, Terence N.
*Sanders, Charles W.
*Schorre, Susan G.
*Sheldon, John David
*Sloan, Samuel Thomas, III
*Thompson, Peter Gordon
*Tortora, Fernando
*Watts, Peggy T.
*Zirschky, Zane Paul

Black, Jerald R.
Borg, Joseph Paul
Castillo, Domingo
Chapa, John C.
*Courchene, Phillip M.
*El Wazier, Abu Bakr Saye
Espinosa, Juan Herran
*Falcon, Jose
*Fisher, Steven E.
Freeman, Nicholas A. M.
*Hennessy, Peter
*Hill, Edward
*Holdren, R. Lynn
*Ibanez, Augusto Atonye
*Johnson, Conrad Allen
*Juarez, Antonio Ayala
*Kennedy, Raymond H.
*Kim, Thomas
*Knutson, Dale T.
*Landman, Royce Clay
*Laue, Jeffrey P.
*Lawson, Jerry Lee
*Loh, Steve Mark
*Leonard, John F.
*Marks, Stephen
*Maxey, James A.
*Michalsky, Mary
*Michener, Mary Jo
*Miralles, Luis
*Mothershead, Bryan J.
*Munro, David Michael
*Moore, William B.
*Nelhouse, Mei J.
*Papson, Edward, Jr.
Powell, Gene A.
*Pringle, Keven Ray
*Ray, Ralph James, Jr.
*Reynolds, Larry Lee
*Riley, Alice J.
*Rosson, Herbert M., Jr.
*Sikorski, Patrick D.
*Splunk, David L.
*Stark, Gregory E.
*Stowe, David
*Thomas, Eric W.
*Van Bekkum, Bert
*Van Borsum, Peter W.
*Wigley, Robin Michael

Collins, Richard O'Neil
De La Cruz, Ruben
Dilgard, Barry E.
Eggiseston, Peggy R.
Estes, Rui Da Cunha
Faltsjepek, Peter
Fleming, Michael
*Forstyth, James Nigel
*Foster, Jerry G.
*Foster, Paul H.
*France, Ernest
*Gable, Richard Dale
Garza, Abel Bergara
Garza, Enrique
Giambra, Michael
*Grammer, Michael Lee
*Hakala, James
*Hamilton, Esperance A.
*Hamilton, Jerry M.
*Haralson, Thomas R.
*Harris, Sharon E.
*Houston, Mark Harig
*Howland, Peter A.
*Hufty, Douglas
*Hsiieh, Mark Jung-Kai
Jafarzadeh, Hooshang
Jeffery, Linda K.
Kim, Soo Chul
Kovacs, George Thomas
*Le, Hien Thi
*Lee, Royce D.
*Linscott, Robert R.
*Loveday, Janet A.
*Lowe, James F.
*Lyons, Michael B.
*Maguire, Mike M.
*McCord, Debra Alexander
*Moffatt, Peter Michael
*Moore, Retta L.
*Moreno, Gilberto
*Nhuong, Hieu Thi
*Patrick, Kevin
*Peterson, Nicholas C.
*Philpott, Mike J.
Poli, Terence Peter
*Ramaeker, Donald W.
*Ranslam, William R.
*Repp, Kim
Richardson, Wayne C.
*Robinson, Rita Renee
*Ruiz-Olave, Juan-Jose
*Salyers, Roger Kelson
*Schilling, Paul S.
*Sheehan, Timothy Edward
*Shim, Sook Jim
*Spagnolo, Robert
*Stavinoha, Bernice A.
*Thorner, Stuart Patrick
*Tock, Michael

Turnwald, Tom Steven
Usmani, Rukaiya A.
Vander Esch, Ivan Dean
Vanek, Dennis F.
Vowell, Michael James
*Wells, Scott
*Wen, En-Tsu
*Wier, Jack

6 YEARS
Atkins, Thomas L.
*Avila, Javier C.
*Barker, Roderick L.
*Baule, David L.
*Beaton, William
*Bennett, Gordon W.
*Bird, Ronald Bruce, Jr.
*Bledsoe, Donald W.
*Boissier, Wilson
*Brown, Dwight Neil
Brown, Mary P.
Buttle, David K.
*Campbell, Robert James
*Cant, Steven W.
*Carroll, Charles V.
*Clark, Michael T.
*Coca, Jose A.
*Collinson, Anthony J.
*Collinson, Anthony B.
*Conti, Antonio F.
*Cook, Ian Edward
*Costello, James
*Dick, Christopher R.
*Dietz, Robert B.
*Dray, Alan John
*Duncan, Glenn E., Jr.
*Durrant, Peter James
*Elliot, Roy D.
*Elliott, Paul
*Ekenale, Rufus J.
*Ellert, Roy D.
*Endersby, Graham A.
*Fischer, Robert E.
*Galarza, Frank M.
*Garrick, Barbara
*Garza, Jose A.
*Garza, Ruben M.
*Gibson, James D.
*Goethals, Robert
*Gould, Patrick A.
*Grauel, Neil W.
*Graves, Mark
*Gryparis, Carmensita G.
*Hammars, Pamela J.
*Hanson, Harold
*Harder, Victor J.
*Harquist, Gary P.
*Hazelrigg, Barbara
*Helikkinen, Ulf O.
*Heinrichs, Wilhelm G.
Tufekcic, Darko
*Turtura, Craig
*Veillette, Donald
Venghaus, Helen E.
Vogel, Mark L.
Watts, Christopher A.
Whitey, David A.
*Williams, Gary A.
Williams, Lawrence S.
Zimmer, Edward D., Jr.

5 YEARS
Abarr, Gregory J.
*Agarwal, Vinod Kumar
Andreu, Marios
Auble, William D.
Austin, Darlene E.
Barker, Glen P.
*Barnes, John
Bartholomew, William
*Bates, Michael D.
Beal, Carol Joyce
Beile, David M.
Benedetto, James J.
*Bialas, Elizabeth F.
*Bockelman, Richard A.
Bowie, Callye A.
Bowman, Jackie
Breitnauer, Mark J.
Brethauer, Howard A.
*Brink, Robert H.
Brooks, Timothy J.
Browne, Noel E.
Bubar, Forrest F., Jr.
Bundrick, Robert H.
Burgess, Scott H.
*Buswell, Gregory Dean
*Button, Stephen
Bye, Richard
Carter, Larry R.
*Cobb, Ronald E.
*Cobern, David R.
*Constable, Michael E.
*Cooke, Martin
Covington, Betty J.
Croce, Thomas
D'Hondt, Don
Dastous, Roland L.
Davis, John Roger
Dean, Frederick Charles
Debono, Joseph J.
*De Jager, Pieter
Demong, Michael R.
Dill, Rebecca A.
*Donner, Margaret P.
Dowd, Stephen P.

Doyle, Kerry T.
Ettenger, William J.
Ewell, Douglas W.
Faber, Steven
Fleming, Colyn
Francis, John E.
Fyda, John William
Garcia, Louis
Garza, Trinidad
Gibson, David William
*Goodwin, Randy M.
*Grabiec, John M.
Haggag, Ismail B.
Hartley, Stephen L. C.
Heflin, Donald R.
Hein, Howard C.
Hughes, David J.
Irvin, Sarah A.
James, William Dennis
Joseph, Earline L.
Joubert, Yvette
*Kerekes, William R.
Khan, Mohidur R.
Kiedro, Robert H.
*Kleen, Vickie J.
*Kocaba, Ibrahim
Kovar, Maria E.
Law, Joseph Che Chung
Leith, Simon A.
Leydecker, George M.
Littlewood, Peter H. E.
Long, Robert E.
Longridge, Jeffrey A.
Lujan, Duanne E.
*Malone, Charles
Martin, Margaret Lind
McCoy, Roger Allen
McKenzie, Michael E.
McVinish, Michael L.
McWilliams, Jimmy Dale
McWilliams, Matary M.
Miller, Jonathan Gordon
*Mohr, Thomas J.
Morgan, Eric L.
Moulton, Michael T.
Nguyen, Tung T.
Munoz, Silvia
*Nguyen, Charles D. K.
*Niland, Kenith Wyndham
*O'Beirn, Michael
Opucski, Claudio
Parks, William G., II
Paul, Jeffrey L.
*Peng, Linda C.
Perez, Jesse

Peters, Rodney E.
Phan, Anh
Prozeller, David R.
Raburn, Greg C.
*Ricker, Donald K.
*Riggs, Kenneth S.
Riley, Patrick Lee
Roberts, John M.
Roberts, Michael A.
Robertson, Alan L.
Rogers, John Martin
*Sayers, Michael S.
*Schneider, Curt
Schoolfield, William R.
Sciberras, David
Scott, James H.
Simons, Michael D.
Smith, Griffith C.
Sparkman, Jackie W., Jr.
Stegger, Andrei R.
Stoffel, William
*Stowers, Michael Joseph
Stuve, David D.
Sweeney, Thomas G.
Swerdlow, Richard S.
Thompson, Glyn
Ting, Ching-Cheng
Cho
*Tsuei, You-Hsin
Tyler, Raymond
*Vanocor, Vladimir
*Vaughn, John
Villarreal, Joe Henry
Vogler, Raymond E.
Wagner, Kenny H.
Weiss, Wayne W.

*West, Lyndal
*Whalen, Gerard J.
Wilbur, Thomas L.
*Williamson, Dolores A.
*Wilson, Henry T.
Wonica, George M.
Yapuncich, George T.
Yarborough, Terry L.
Zepeda, Anna Marie

*Interrupted Service

If you have any questions regarding your service date, please call Payroll at (713) 974-3194 to update your records.