Kuwait is currently home for Party 759. Numerous pipelines and powerlines dominate Kuwait’s countryside and present logistical challenges to the crew.

Summer operations for marine crews 85 and 190 consist of ice, snow, and difficult conditions. DIGISEIS operations are carried out in an atypical manner in this arctic environment.

Spreading the “word” about the capabilities of Western Atlas is the Corporate Communications department. Specializing in oilfield service communications, this group develops all promotional materials for the seven Western Atlas divisions.

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Front Cover: A Beaufort Sea sunset occurs at midnight during the Arctic Star’s summer sojourn.
Elsewhere in this issue you will find a picture of some of Western's "Grey Beards" as we celebrated in unison the 40th anniversary with Western of Bill Brooks and the 35th anniversaries of Vic Boyd, Jim Denniston, and Ben Langston. Throw in Howard Dingman's 40 years with Western and my 39, and we totalled 224 years of service with Western around the table at that little party.

Several conclusions are evident in a brief study of this gathering. First—Western must be a great place to work; otherwise such loyalty and longevity could not have occurred. Second—the contributions made by this particular group of people (excluding me) have had a major impact on the growth and success of Western. Third—in order to have logged these many years of service there has to be an accompanying correlative—some of us are growing older.

This third observation deserves some comment. As we approach those "sunset years" (with varying degrees of reluctance) it is indeed comforting for us to review the Western roster for potential candidates to replace those who are within half a decade of retirement. It is a fact that, because of the computer-assisted scientific explosion within our industry, the next generation of leadership will arrive at their eventual positions with far greater technical competence than their predecessors. In addition, we are very fortunate that these younger people also possess the work ethic, professionalism, and loyalty to Western that are such key ingredients to a successful organization.

Providing for an orderly succession is an obligation to Western and its employees which no one in management takes lightly. Rest assured that we do have the on-coming troops to insure that Western will not only retain, but could even enhance its reputation as the finest company in the geophysical business. In the meantime, you are just going to have to reconcile yourselves to putting up with us for a few years longer.

Neal P. Cramer
Bob Hardage joins Western Atlas as general manager of Downhole Seismic Services

In March, Dr. Bob A. Hardage was appointed general manager of Downhole Seismic Services. Bob is recognized worldwide for his expertise in borehole geophysics. He has worked for 15 years in geophysical research, concentrating on seismic data processing, synthetic seismograms, and seismic modeling software, developing some of the industry’s earliest technology in sonic waveform logging and vertical seismic profiling. He helped to create the Seismic Stratigraphy Section at Phillips Petroleum. He also worked in Exploration Operations at Phillips and advanced to the position of exploration manager of Asia and Latin America. Bob par-

ticipated in exploration activities in the North Sea, China, Pakistan, India, Indonesia, Argentina, Bolivia, Paraguay, and Peru.


In his new position, Bob will be responsible for overall operations, data processing, and research and development in Downhole Seismic Services.

Western Geophysical forms applied mathematics research group

Western Geophysical has formed an applied mathematics research group within its Computer Sciences department to centralize and focus ongoing R&D in numerically intensive geophysical data processing.

Headed by Dr. Craig Beasley as project manager, the group will expand on present activities in 3-D migration and 3-D DMO with general responsibilities in the mathematical areas of geophysical data processing and computer science. Apart from fundamental research, the group will participate in applying emerging computing technologies to Western’s seismic software.

Ken Larner assumes position at Colorado School of Mines

Dr. Ken Larner will be resigning his position as Western Geophysical’s vice president, geophysical research, to become the Charles Henry Green Professor of Exploration Geophysics at the Colorado School of Mines. The Green chair is one of the most prestigious academic positions at the school, located in Golden, Colorado.

Dr. Ken Larner

Ken joined Western Geophysical’s research and development department in 1970, after receiving a Ph.D in geophysics from the Massachusetts Institute of Technology. In 1974 he became manager, research and development; and in 1979 he was promoted to his current position as vice president. Ken is president-elect of the Society of Exploration Geophysicists (SEG) for 1987-88 and will serve as SEG president for 1988-89.

Ken will continue as vice president
with Western Research through August, 1988 when he will assume his responsibilities at Colorado School of Mines.

Dr. Wendell Wiggins, assistant manager of geophysical research, will then assume full managerial responsibility for R&D in Western Research.

Wendell has worked for Western Research for three-and-a-half years as a senior research geophysicist. In addition to his work in geophysics, he has held the position of Associate Professor of Biophysics at The Johns Hopkins University where he conducted a research program in electron microscope imaging. He received a Ph.D in physics from that university in 1968.

**New officers are appointed at Litton Industries**

Litton Chairman Fred W. O’Green retired from the company on March 31, 1988, but he will continue as a member of the Board of Directors and its Executive Committee.

The Board elected Orion L. Hoch chairman; Roland O. Peterson president, chief operating officer, and a director; and Joseph T. Casey to the position of vice chairman and chief financial officer.

Hoch was president and chief executive officer, and will retain the latter responsibility. Peterson was a Litton senior vice president. Casey was an executive vice president and chief financial officer. Both Hoch and Casey are members of the Board’s Executive Committee.

**Western Geophysical participates in Nigerian Association of Petroleum Explorationists Fifth Annual Conference**

In late November, Western Geophysical attended the Nigerian Association of Petroleum Explorationists (NAPE) Fifth Annual Conference in Lagos, Nigeria. The three-day event, attended by over 600 people, was hosted by the major oil and oilfield service companies in Nigeria.

Western Geophysical’s display included computer demonstrations of 3-D quality control techniques, videos and brochures describing Western’s 2-D and 3-D data acquisition and processing capabilities, and various instruments used in 3-D data acquisition. Crew 390 party managers Duncan Riley and Paul Reeves, Assistant Party Manager Kenkeramia Okezie, 3-D Computer Madu Esinuolo, and Surveyor Solomon Osomoniha manned the booth and greeted such dignitaries as Alhaji Rilwanu Lukman, Nigerian Minister of Petroleum Resources and current OPEC president.

Ali Ardali, from the London office, gave a paper entitled ‘Trace Inversion Using an Interactive Workstation” during the technical portion of the program.

Core Laboratories, another Western Atlas company, was also represented at the event. Jon Roberts, from the London office, and Chris Dougan, from the Nigeria office, operated Core Lab’s booth.

*Hosting the booth at the recent NAPE conference in Nigeria was Western Geophysical’s Crew 390.*
Carl Savit named 1988 outstanding inventor

Carl H. Savit, former senior vice president of Western Geophysical, was named in February by the Houston Intellectual Property Law Association as the recipient of its 1988 Outstanding Inventor Award. Carl was honored for his inventions relating to improved methods for obtaining and processing seismic data, and their significant impact on the offshore oil and gas exploration industry.

A named inventor of over 40 U.S. patents, Carl pioneered the development of the digital seismic marine streamer. His inventions have also included improved hydrophones for obtaining data, together with improved telemetry, data compression, and data manipulation techniques for receiving and processing marine seismic exploration data.

Carl is a graduate of the California Institute of Technology. During his career he has been professionally active, serving in many capacities such as White House staff assistant for earth, sea and air sciences to the President’s science advisor in 1970-71. He is also responsible for over 60 articles and is the author of a textbook, Introduction to Geophysical Prospecting, which will be published later this year.

Western Atlas initiates identification program

A 102-acre facility comprised of some 21 buildings in Houston, Texas, publicly became the Western Atlas Center when a sign displaying the new name was erected in early January. The Center was built in the mid-1950’s by Dresser Industries and is located at 10201 Westheimer Road.

The new signage represents the “new look” being seen throughout Western Atlas International on everything from business cards to trucks.

Implementation of the corporate identity program is being coordinated by the Corporate Communications department. The goal of this program is to ensure that through correct use of our logo we communicate a consistent corporate identity throughout the industry.

Familiarity and confidence are increased when a client repeatedly sees our logo in personal communications, on field units, in trade journals, and elsewhere. Additionally, consistent usage of our logo/graphic identity assures its legal enforceability.

In addition to making certain that every location of every division has access to the correct letterhead, en-
Western Atlas holds advanced technology seminar

Four Western Atlas companies jointly conducted an applications/work session in November, 1987, at the Petroleum Club in San Antonio, Texas. Over 40 oil company representatives attended the seminar which was intended to provide an overview of the latest advances in petroleum exploration and production services.

Mark Harris, marketing manager of Atlas Wireline Services’ South Texas district, provided the audience with an overview of the formation of Western Atlas International and of the various exploration and production services provided by each of the Western Atlas companies.

Core Laboratories was represented by Hugh Peek, manager of Core Lab’s South Texas district, who discussed techniques for sidewall core analysis. Other Core Laboratories speakers were John Masterson on Thermal Extraction Chromatography (TEC), Milton Craft on Derivation of Critical Water Saturation, and Mike Dixon on Petrographic Image Analysis (PIA).

Harris outlined new wireline techniques, including dielectric logging, thin-bed analysis using Lateralog II, and Stratalogik™ analysis. Each member of the audience was presented with a Stratalogik display, integrating core and log analyses.

Peter Aronstam of Downhole Seismic Services presented several practical examples of Vertical Seismic Profiles (VSPs) being used for structural and stratigraphic evaluation and reserve estimation. Marc deBuyl of Western Research described the application of 3-D seismic surveys for field development and reservoir management with the example of a 3-D study in Alberta, Canada.

The audience was appreciative of the opportunity to learn of new technical developments. “This is the first time any company has presented such a seminar in South Texas,” said one veteran oil company geologist.

Western Atlas International plans to hold similar advanced technology seminars in other cities throughout the world.

Core Laboratories headquarters moves to Houston from Dallas

Core Laboratories will be relocating its division headquarters from the Dallas area to the Western Atlas corporate headquarters facilities in Houston between now and August of this year.

Over 100 personnel in Core Lab’s administrative, core analysis development, software development, research, and consulting engineering staffs are expected to move to the new Western Atlas Center at 10201 Westheimer Rd. The move is part of Western Atlas International’s consolidation of all division headquarters in the Houston area.

Core Laboratories’ Dallas District operations will remain in the laboratory complex they currently occupy. These operations include core analysis, special core analysis, reservoir fluid analysis, enhanced oil recovery services, and reservoir geology.
MINERALOG: New technology from Core Laboratories

by Don Meer

Core Laboratories has recently introduced a revolutionary new system for rapid mineral identification of common sedimentary materials. This system, trade named MINERALOG™, is based on Fourier Transform Infrared (FTIR) spectroscopy and represents a breakthrough in direct measurement methods. It is rapid, cost effective, quantitative, and provides mineral weight percent of 10 sandstone and carbonate minerals (Table 1).

The quantitative mineralogy of the sedimentary section from a single well or group of wells is basic to most exploration and production activities. This information can aid in performing log analysis, evaluating reservoir quality, screening samples (to identify intervals with problem minerals such as swelling clays), designing a drilling program that will minimize formation damage, or interpreting depositional environments.

In the past, quantitative mineral identification in the laboratory involved methods like X-ray diffraction (XRD), thin-section model analysis, and chemical analysis. These are superior techniques when performing a detailed sedimentologic/petrographic study, but they have drawbacks in terms of cost and turnaround time. MINERALOG can provide crucial mineral data in a well-completion time frame and at a cost that is significantly less than the more traditional methods.

There are four main areas where MINERALOG has practical applications: 1) log analysis; 2) reservoir characterization; 3) sample screening; 4) drilling and production engineering. As experience is gained with this technology, other uses will, no doubt, become apparent.

Log Analysis

Wireline logs are the most widely used tool for subsurface evaluation. Integration of directly measured mineralogy data with log data will significantly improve formation evaluation. For example, work by Waxman and Smits and Clavier, et al., on shaly sand conductivity makes it clear that regardless of which model one chooses to apply, knowledge of the amount and type of clay minerals is important for proper evaluation of electric logs in shaly formations. The rapid turnaround time of MINERALOG makes it possible to have mineralogy data available when log analysis is being performed. This will be useful in complex reservoirs where porosity and permeability vary with subtle changes in lithology.

Improved Reservoir Characterization

Formation damage has become an industry "buzzword" as geologists and engineers focus on improving the efficiency of drilling and production operations. This trend will continue as secondary and tertiary recovery projects assume greater importance. Early identification of zones with formation potential enables the engineer to minimize many of the problems associated with mobile fines and fluid sensitivity. Because formation damage may begin with the chemical and/or physical incompatibility of fluids introduced into the formation and "problem minerals" such as swelling clays, ferroan carbonates, etc., MINERALOG provides a tool for early recognition of potentially sensitive intervals.

Sample Screening

In the past, workers designing a specialized laboratory testing program relied heavily on routine measurements.

Table 1.

<table>
<thead>
<tr>
<th>Silicates</th>
<th>Carbonates</th>
<th>Other</th>
<th>Clay Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz</td>
<td>Calcite</td>
<td>Pyrite</td>
<td>Kaolinite</td>
</tr>
<tr>
<td>Plagioclase</td>
<td>Dolomite</td>
<td>Anhydrite</td>
<td>Illite</td>
</tr>
<tr>
<td>Microline</td>
<td>Siderite</td>
<td>Barite</td>
<td>Chlorite</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Clay</td>
<td>Smectite</td>
</tr>
</tbody>
</table>
of porosity, permeability, and grain density to choose samples for further testing (relative permeability, capillary pressure, critical velocity, etc.). By combining MINERALOG data, simple porosity/permeability crossplots and grain density data, preliminary interpretations can be made of the specific characteristics of certain zones. The short analytical time required by MINERALOG makes it ideal for identifying large-scale mineralogy trends. Specific zones can then be targeted for more detailed study using special core analysis, XRD, SEM and thin-section petrology.

**Drilling and Production Engineering**

Improving drilling economics by minimizing drilling problems is a possible application of MINERALOG. Drilling problems such as sloughing holes or washouts can be anticipated if mineralogy data is available as drilling proceeds. Forewarning of an underlying shale interval containing swelling clays allows adjustment of the mud system to avoid sloughing, stuck pipe, and filtrate loss.

In the future, well-site MINERALOG units will provide data during the time it takes to trip out or circulate. This could be useful when selecting drilling or completion fluids on an offshore platform where a number of directional wells are drilled. A decline in production rates often signals formation plugging from mobile fines, waxes, asphalts, and inorganic scales. The causes can sometimes be identified from analysis of deposits on downhole hardware and surface equipment. In situations where rapid identification of scale material is required, at the well site or in a refinery, MINERALOG can provide timely answers.

The MINERALOG format, shown in Fig. 1, consists of two tracks of data. The left-hand track contains quantitative data and the right-hand track indicates the presence or absence of clay minerals. The depth scale is flexible and can be changed to allow depth shifting with wireline logs. All of the plotting is performed on a Versatec® color plotter using Atlas Wireline Services’ Well Data Systems’ (WDS) software. This system is powerful, flexible, and allows input of MINERALOG data into Atlas log analysis programs.

MINERALOG is a unique mineral identification service. Its combination of speed, accuracy, and cost effectiveness makes it a large step forward in direct measurement methods. At the present time, MINERALOG is most effective when used in conjunction with other analytical tools such as X-ray diffraction, scanning electron microscopy, or X-ray florescence. It has the potential to open up many new applications for conventional core, sidewall core, and drill cuttings.

![MINERALOG format diagram](image)

**Figure 1.** The left track includes weight percentages of common sedimentary minerals and a value for total clay. The right track is a clay index, indicating presence or absence of four clay minerals. Output can be plotted to any depth scale allowing direct comparison with downhole logs.
Party 759 in Kuwait

Reporters, Ed Tattersall and Chris Baker
Photographers, Stuart Jackson and John Taylor

Kuwait, a small desert country located at the north end of the Arabian Gulf, is currently home for Party 759. Flat and windswept, Kuwait’s countryside is decorated with a profusion of pipelines and power lines. As one 759 crew-member commented, “The power lines seem to grow out of the ground; they’re everywhere!”

The main city of Kuwait lies on the coast and is circled by a series of “ring roads” which stretch into the desert. Kuwait City is remarkable in that it’s a collection of elaborate hotels, shopping arcades, and expensive cars. The highway system and freeways are very extensive in spite of being for the immediate area only.

The Kuwaitis are obviously very affluent but reserved and polite. For Western’s “town” staff, the country is quite pleasant with a sizeable “expat” population. Because the country is so small, the field crew is always conveniently close to the city for supplies, and work is “business as usual” in spite of the nearness to the war-torn areas in Iraq.

Crew 759’s lines not only cross freeways but also encounter nomadic Arab camps and oilfield installations. On one line the vibrator operators had to negotiate 72 pipelines in a single kilo-

meter. The country is small enough for some seismic lines to completely cross it—from the Arabian Gulf coast to the borders of Iraq and Saudi Arabia. During the current contract, which covers most of the country, Party 759 expects to move camp only once or twice.

The bulk of 759’s equipment was shipped from Saudi Arabia by way of Sharjah in the United Arab Emirates in March, 1987. Shipping was supervised by Resident Manager Mel Weidner and Supervisor Mick Gillespie. New LRS-321 vibrators were sent from Houston, and the recorder was trucked in from Turkey under the supervision of the late Party Manager Ernie Jopp. Until late December, the entire field operation was coordinated by Ernie. On December 29, Ernie and Heinz Hahn were involved in a vehicle accident resulting in Ernie’s death. (See In Memoriam, pg. 32) Ernie is greatly missed by all crew members. Until the arrival of a new party manager, the crew is being guided by Assistant Field Supervisor Chris Baker, who joined the operation from Abu Dhabi.

Party 759 employs a distributed recording system with onsite test equipment as well as an in-field PRESEIS® processing system, operated by Analyst Steve Smith and Instrument Supervisor Glenn Gilliam. Mike Zellum, the initial

The Kuwait Towers are an interesting feature of downtown Kuwait City.
instrument supervisor, left for Somalia and was replaced by Instrument Technician Peter MacDonald who came to the crew as an observer from China. After start up, Senior Observer John Stephens was transferred to Somalia, leaving Observer Jeff Gilbert to assume his duties with the help of observers Ed Tattersall, Pat Ciantar, and Marios Andreous. They were later joined by Observer Ed May and Senior Electronic Technician Keith Hussong, also transferred from Western’s Houston office.

New LRS-321 vibrators are looked after by vibrator technicians Pat Ryan, Danny Hannay, and Victor Arellano. They have been joined by Vibrator Technician Brad Schoenberg and Vibrator Mechanic Lorne Cropp, both of whom recently graduated from a course in vibrator technology. In the workshop, mechanics Andy McCreadie and Heinz Hahn keep equipment serviced.

Surveyors Mike McKinnon and Derek Elsdon transferred to other crews after start up. Surveyor John Taylor, was later joined by Andy Mottershaw who had spent some time surveying in the Emirates and Saudi Arabia.

Drillers Les Mellet, Denis Taylor, and Roger Dreikluft got the up-hole program underway. Geologist Stuart McDonald, who ran the logging instruments and coordinated the early part of the program, left to be replaced by Nigel Bennett. Mounting a weight drop mechanism on the front of a Y-900 vibrator gave the crew a unique dual-energy source capability. Because of dust storms and high daytime temperatures, this phase of the operation
was carried out at night, causing a lot of alarm and confusion among local police and security forces.

In camp, up-hole records were picked and plotted by geophysicists Russell Black and Stuart Jackson.

Since August, the town operation has been run by Supervisor Mick Gillespie and Administrator Adrian Cranstoun. Pat Hili, who expedited for the crew in the early phase of the contract, has been transferred to Western’s warehouse in Sharjah.

At present, 759 is continuing its work in Kuwait. This assignment is expected to last several more months. Recently the crew was joined by Party Manager Garry Read, transferred from Australia. Observer Ed Tattersall moved to Abu Dhabi for the lead observer slot on 769. The crew has had some trying times this past year but can be proud of the individual efforts and quality work.

Observers Jeff Gilbert (left) and Marios Andreous rewire 759 trailers after a heavy downpour.

From left to right, Russell Black, Stuart McDonald, and Mike Zellam appear to be either nearly finished, or have a long way to go in checking 759’s geophones for the crew start up.

Up-hole crewmembers (from left to right) Computer Nigel Bennett, Observer Pat Ciantar, Geophysicist Russell Black, and Driller Roger Dreikluft review the next day’s program.
The Arctic Star and the Northern Lighter DIGISEIS in the Arctic

Reporter, Steve Carter
Photographers, Tom Hickman and Scott Weigle

Western field crews throughout the world face harsh working conditions. The marine crews operating in the Beaufort Sea offshore from the North Slope of Alaska are certainly no exception. The Beaufort Sea’s constantly changing ice conditions dictate the amount of seismic program any crew may shoot. Seismic acquisition is seasonal because the Arctic Ocean begins to thaw in late June, and July is the warmest month of the year, having an average daily high temperature of 50°F. The operating season, which may last 17 to 70 days between early August and early October, requires that vessels be prepared to take advantage of any open-water conditions.

During the last days of June in 1987, the first marine personnel began to arrive at Deadhorse Base Camp in Prudhoe Bay. Prudhoe Bay is at the head of the Trans-Alaska Pipeline, where oil from the largest single oil field in the United States begins its transfer to the lower 48 states. The engineers, mates, and captains had to bring the vessels from their inactive “deep freeze” state to full operation in gradual phases, being careful not to harm the electronics left onboard when the vessels were frozen in at the West Dock. This task, which often entailed digging vessels out of a snow bank, was aptly supervised by Marine Port Engineer Ken K. Kauk. Ken was also responsible for bringing the Western Polaris back into operation. Much of his time was demanded to rig up the Arctic Star for a combined DIGISEIS, streamer, and yoyo speculative program offshore the eastern Beaufort Sea.

Scott Weigle, party manager, Tom Hickman, field equipment supervisor, and Steve Carter, field supervisor, assisted in bringing this dormant crew to full operation. While the vessels

Labor Day for Alaskan crews is no picnic! Snow must be shoveled off the decks of navigation boats before the start of the day.
were still frozen solid in the ice of Prudhoe Bay, Field Service Supervisors Larry Howard and Glen Barker assisted in checking and rebuilding the compressor and gun systems. Field Service Engineer John Calhoun began installation of the DIGISEIS system, which had traveled from Seattle, Washington, to Anchorage by ship and was then air freighted to Prudhoe Bay. Making his second summer sojourn to the Arctic Star was Senior Field Service Engineer Vernon “Willy” Williamson to assist in installing the DIGISEIS system and tuning the buoys for cold-water operations. Three navigation/line boats had radar added to their complement of equipment to aid the line crews in conditions of advection (sea fog) which is prevalent during the warmer months in the Arctic Ocean.

In late July, ice conditions became favorable in the eastern Beaufort Sea, and the Western Polaris was off to an early start with speculative streamer acquisition that would tie with streamer, yoyo, and DIGISEIS programming completed by the Arctic Star. The Star sailed shortly after the Polaris to begin streamer and yoyo acquisition along the shoreline of the eastern Beaufort Sea. The speculative survey was designed such that transition zone DIGISEIS work would tie to a concurrently acquired streamer survey offshore. The work was conducted near the Eskimo village of Kaktovik so the dependence of the villagers on fishing and on hunting bowhead whales had to be considered during operations.

Into the second week of August the Northern Lighter, bound from Seattle after considerable delays due to heavy ice conditions off Point Barrow, sailed into Prudhoe Bay. The Lighter, a supply vessel, was loaded with buoys, weights, phones, groceries, fuel, gasoline, and five 20-foot trailers to house and support personnel for the Arctic Star transition-zone operation. The arrival of the Northern Lighter, with three line boats in tow, raised the crew count to 40 men, including several residents of the nearby village of Kaktovik. Nearly half of the line boat crew was housed onboard the Lighter. The Arctic Star acted as the shooting/record timing the line boats, X-ray, Yankee, and Zulu, carrying four men each to facilitate buoy deployment, retrieval, troubleshooting, and policing of the line. Unlike DIGISEIS operations in temperate zones where open Zodios can be employed, only nav/line boats are utilized in the Arctic since the sea water and air temperatures average only 32°F.

Each day began at 6 a.m. with the line boats departing the Star after receiving equipment and pre-plot instructions for the line. Water depths at each buoy position had been surveyed the previous night by a line boat which took advantage of the long daylight hours of summer in the high Arctic. The DIGISEIS lines were laid out to effect full-fold DIGISEIS subsurface coverage with previously acquired full-fold streamer coverage. In order to extend coverage into the bays and lagoons, the lines continued shoreward to a point inside the barrier islands. Approximately 120 buoys were
deployed at one time with an active spread of 96. With line lengths of up to eight miles, the buoys often had to be rolled into the shallow bays. The line crews became acutely aware of the exact position of many sandbars while working in the bays. After troubleshooting the line, the shooting/recording crew onboard the Star would start offshore past the buoys and proceed toward the seaward side of the barrier islands, beyond which water depths and permit restrictions would not allow shooting.

Line crews were extremely flexible in taking their meals onboard the Lighter and working around shooting periods. After completion, the buoys were retrieved, placed on charge, and the crews were off to sleep after a 15-hour day. The night crew would then take charge. Technicians repaired buoys; an outboard mechanic repaired well-worn engines; and a navigator checked line positions from the day’s shooting and made fathometer runs and pre-plots for the next day’s shooting. The survey continued for 30 days with crews operating in this sensitive area without any problems.

Adverse weather, permit restrictions, and consideration of the Eskimos’ hunting activities moved the Star from the area in mid-September onto other prospects in the Beaufort Sea. An extremely successful season had been completed thanks to the crew’s diligent performance in all situations. Thanks should also go to the field service groups for their support and to other operating DIGISEIS crews for their advice and help.

Riley Heron, Navigator
Bryan Mothershead, Boat Driver/J.O.
Don D’Hondt, Chief Gunner
James Harris, Observer
Cory Burch, Navigator
Murray Hammond, Outboard Mechanic
Scott Woody, Boat Driver/J.O.
Payne Brower, Lineman
Jim Hudok, Lineman/J.O.
Aaron D’Hondt, Compressor Mechanic
David Rush, Lineman
Paul Bauers, Lineman
Glen Anthony, Gunner
Ken Anthony, Gunner
Joel Heineman, Lineman
Keith Hudson, Lineman
Tim Smith, Lineman
John Calhoun, Field Equipment Engineer
George Scherbri, DIGISEIS Technician
Tom Hickman, Field Equipment Supervisor
Randy Boyer, Technician
Willy Williamson, Sr. Field Service Engineer
Mike McKensie, Field Service Engineer

**PARTY 85, Northern Lighter**
Scott Weigle, Party Manager
Mac Porter, Captain
John Pelland, Mate
Victor Felder, Seaman
Mark Booher, Seaman
Lee Booher, Engineer
Chuck Westvang, Cook
Thorbjorn Thoresen, Seaman

**PARTY 190, Arctic Star**
Scott Weigle, Party Manager
Peter Jorgensen, Captain
Rob Helbig, 1st Mate
Richard Pryor, 2nd Engineer
Larry Allen, Chief Engineer
Barry Whitcher, Seaman 1/C
Spoon Huette, Cook
Bill Jeffries, Coordinator
Eric Taylor, Asst. Coordinator/Technician
John Snyder, Observer/Boat Driver
Integrated department supports all the Western Atlas companies

COMPLETING THE CORPORATE EDUCATION PICTURE

ike pieces of a puzzle that fit closely together to form a whole, the talents of each person in the Corporate Communications department have been molded into a very unique support group.

During the development of Western Atlas International, the communications and art departments of Litton Resources Group and Dresser Atlas merged to form this corporate communications group. And the benefits of this expanded in-house agency extend to all areas of Western Atlas, says Director Jaen Lawrence, who came from Core Laboratories’ Marketing/Advertising department. “I’m very proud of the professionals in our group who develop all the promotional materials such as ads, brochures, videotapes, and slide presentations, and who handle our press relations and trade show programs.”

The four writers and editors in the group are responsible for supporting technical operations in planning and creating text books, brochures, technical papers, various other written pieces, and Western PROFILE. Rod Hotz, manager of technical communications, supervises communications coordinators Kathy Pratt and Pramod Kulkarni. Originally from Atlas, Rod and Kathy spend most of their time developing and editing Atlas Wireline and Core Lab materials. Pramod is primarily responsible for Western Geophysical, Aero Service, Downhole Seismic Services, LRS, and J.S. Nolen literature. Recently, they’ve been sharing or swapping writing responsibilities in order to familiarize themselves with every Western Atlas company. Kathy is also coordinating the Western Atlas graphic identification program, ensuring that all new signage, promotional materials, and company equipment properly display the new company logo. (See story, pg. 4).

Another editor, Allyson Knoebel, is in charge of PROFILE, Western Geophysical’s company magazine. Other than printing, all production of the PROFILE—including writing, editing, design, typesetting, photography, and distribution—is handled in-house. In addition to PROFILE, Allyson is responsible for photography, press releases, editing, and proofreading for the Corporate Communications group.

Graphics and art assignments fall under the direction of Rhonda Boone, manager, marketing services. Rhonda began as an artist with Western Geophysical over 13 years ago and gradually developed a full-fledged marketing services department capable of handling trade shows, advertising, and promotional pieces for companies in the Litton Resources Group. Because of the merger, her department has nearly doubled, providing expanded streamlined capabilities for Western Atlas. “When you’re an in-house
agency, you become very familiar with the business you’re trying to promote,” Rhonda says. “That’s one of our major advantages. We’re specialists in oilfield service communications.”

Art projects, including everything from trade show posters and product brochures to slide presentations and Christmas party tickets, are scheduled and delegated by Graphics Supervisor Soraya A. Brombacher. Assignments are often based on the individual talents of each member of the art department, according to Soraya.

For example, Graphic Designer Michael Jungnickel expanded on his flair for graphic imagery and designed the logo for Western Atlas International. Gina Bean accepted the responsibility of designing PROFILE, applying creativity and efficiency to produce a superior piece in half the time it once took an outside agency to do.

Aside from these “special” projects, Soraya, Michael, and Gina produce all posters, technical papers, brochures, advertisements, and a wide variety of other graphic projects that arise.

Once a project is initiated and follows its course through the writers and designers, it travels to typesetting. Linda Dunk and Mark Wilson, using sophisticated digital phototypesetting equipment, produce camera-ready type for all jobs handled in the Communications department. Mark and Linda are also in the process of standardizing operating procedures for the group by upgrading to future PC-based laser typesetting equipment. Terminals available at the editors’ fingertips will eliminate some of the steps of the editing process, plus save time in revision and proofing procedures.

Another area of the Corporate Communications department is the audio-visual studio. Greg Trest, television coordinator, single-handedly runs what was once a four-man operation. He writes scripts, shoots footage, dubs in sound tracks, and edits shots for training, safety, and documentary films used by Western Atlas. Greg recently traveled to Africa by client request to shoot footage of a Western Geophysical crew.

On the “still” side of audio-visual is Miles Wortham, audio-visual graphic designer. Rather than produce films, Miles creates 35mm slides and overheads for presentations. He can create word slides as well as charts and graphs, 75% of which are computer generated.

Designer Michael Jungnickel created the new Western Atlas International logo.

Manager Rhonda Boone (right) greets a Western Atlas booth visitor at the recent AAPG convention in Houston.

Typesetter Linda Dunk sets up the format for a six-page program outlining a recent Atlas Wireline Services seminar.
He does his own processing too, spending much of his working day “in the dark” in the confines of the lab.

Trade shows, a large part of Corporate Communications’ schedule, are primarily coordinated by Rhonda with the help of Soraya and Promotions Coordinator Chris Goggan. Booth materials such as furniture, lights, and signs as well as posters and brochures created by the group are packaged, shipped, and set up by Chris. “Trade shows are a powerful public relations tool for Western Atlas companies,” explains Chris. “It’s the best opportunity for our representatives to update the industry on company capabilities. And I’m there to help reinforce the positive image of Western Atlas.”

Working behind the scenes are the department secretaries Jennifer Leenheer and Leslie Wells. Supporting the designers, Jennifer handles correspondence, billing, maintains the brochure library, and assists Pramod with media placement. Leslie supports the editors and the television department and assists Kathy with the corporate identification program.

According to Jaen, “Our function is to make communications mediums work for Western Atlas operations worldwide, whether the objective is helping a division reach a client with a promotional message or helping Western Atlas companies inform one another about new developments or services which can help Western Atlas achieve its service integration objectives.”
Party 178 has been operating in West Africa—originally in Nigeria, and most recently in Gabon. Party Manager Mike Strain supported the crew through a very successful 3-D DIGISEIS survey in southeast Nigeria during late 1986 and the first half of 1987.

When this survey was completed the crew moved southward to the beautiful coastal country of Gabon. In Gabon, each crewmember was called upon for his expertise in order to shoot streamer, shallow-water DIGISEIS, and land DIGISEIS data, all on the same lines.

The marine end of the survey was led by coordinators Rod Barker and Gerry Turk, with some early assistance by Terry Sadler. The land operations were overseen by Nathan Bertram, who has since returned to Colombia to Party 347. Observers Jerry House, Toby Dawson, Mike McPeek, Dean Wilde, and Bernardo Vial divided their time between the recording room and the jungle. The navigators, under Chief Navigator Frank Eisenhower, spent most of their time deploying DIGISEIS buoys or tending to the WISDOM® system onboard the Wave.

Technicians Kevin Jones and John Selle had their hands full keeping both streamer and DIGISEIS gear in top operating condition, while gunners Glen Martin, Mark Dathe, Matt Deittrich, and Ian Richardson kept the guns shooting. The gunners were also responsible for dynamite shots in shallow water and on land.

The Western Wave was run by Captains Tom Malone and Ricky Jenks with assistance from Chief Officer Franz Eckert. Johs Hesselberg, Henrik

Mark Dathe, Billy McNew, and Glen Martin observe a 2-kilo charge.

Crew 178 carries DIGISEIS equipment to be placed on a line cut through mangrove roots.

Observer Jerry House tries to find water access to a land-tie line.
Flytkjaer and Torbin Anderson handled the engineering responsibilities on board with the help of Luis Villanueva and Jose Valones. The ever-busy deck crew was made up of Mario De La Paz, Cris Ricafort, and Vigilio Reyes. All outboard motors are maintained by Wolfram Mansel. Of utmost importance to big appetites is the chief cook, and the crew was never disappointed by the “choptime” wonders of Roger Solijon and his assistant Eladio Sunga.

The crew produced excellent results during the Gabon surveys. Everyone learned to speak a little French and many had at least one “close encounter” with elephants in the jungle. Second Party Manager Churchill Barton had his closest encounter with an extremely upset gorilla who just didn’t share the crew’s enthusiasm for geophysical exploration.

Following the completion of five seismic surveys in Gabon, the Western Wave returned to Nigeria for a visit to the shipyard. Party Manager Mike Strain has since been transferred to the main office in Houston, and the rest of the crew is standing by awaiting the next West African assignment.

Coordinator Rod Barker (right) oversees a quick cable repair job on the back deck of the Western Wave.

Due to the lack of water access, a helicopter takes equipment to a base station.

The Western Wave lays at anchor in the Estuaire du Gabon near Libreville while the crew shoots shallow-water DIGISEIS with a dynamite energy source. A nav boat prevents the Wave from swinging “on line” due to tides.

Toby Dawson (left) and Ian Richardson display one of their evening catches.
“The helicopter is finally headed your way” seems to be the regular morning cry on Party 338. Another day of South American jungle operations begins with this exchange between two of the camps.

Situated on the bank of the Ucayali River, the base camp of San Jose is the hub of Party 338 field operations. From here Party Chief Norman Pedersen and Field Clerk Brian Williams draw up the flight plans, ready the pilots, and load the helicopters. Two Bell 212’s and one Bell 206 call San Jose home. They are the only transport to one of the line crews working in the jungle.

A satellite camp on the Tahuania River is home for Party Manager Greg Neville and his field clerk, Dale London. Each night the line crews call in their reports to Tahuania and receive instructions for the next day. This base camp is normally the first stop for helicopters leaving San Jose en route to the line crews.

The first helicopter into Tahuania is usually on its way to Casablanca, residence of Line Strategist and Chief Observer Rick Green. Assisting Rick on the line are observers Charlie Nagel and Nick Lucero. A newcomer to Western is Junior Observer Ivan Mainland. He’s also part-time technician and instrument supervisor.

Keeping 338 on a straight line is the responsibility of the capable survey crew. Surveyors John Dickson and Bill Perkins keep a close eye on the daily production and quality of the line-cutting crews. The survey team is rounded out by Dave Armstrong, whose previous experience in the Peruvian jungle is a great asset. These three alternate between field and office work. Helping them out in the office is Rudy Casas, master draftsman. Rudy keeps the crew well supplied with up-to-date maps.

Four base camps have been constructed to date. In addition to San Jose and Tahuania, camps have been built at Sheshea River and Tamaya River. The Sheshea camp closed recently as the recorder finished production in the area. The Tamaya camp is the latest accomplishment of Jean Stanley. Assisting Jean is Assistant Camp Supervisor Oscar Carrillo and Brian Williams. This camp, which is far north of the prospect, will be the final base camp after Rick Green and his crew finish in the south. Maintaining the camps and equipment is the job of Mechanic Manuel Anderson.

The supply route begins in Pucallpa, a typical river town 100 km north of the prospect. Party Manager Doug Reichenbach, presently attending a two-week safety course in England, travels this route extensively.
Party 334 is currently conducting a heliportable operation deep in the heart of the Amazon jungle. Recorder production began in July, 1987, after a smooth start up. Base camp, made up of five 100-ton barges (quarterboat, warehouse, mechanic barge, powder storage, and office barge), is located about ten minutes by speedboat from the village of Coari, approximately 400 km west of Manaus on the Solimoes River. This river joins with the Rio Negro to form the Amazon River just east of Manaus.

Party Chief Robin Haryett, Party Manager Alan Denham, and Assistant Party Manager Hector Enriquez head up field operations. The 300-man crew works in a jungle environment of rivers, streams, swamps, and rolling terrain beneath a 150- to 200-foot, triple-canopy tree cover. Supplies and personnel are brought from Manaus by boat and carried to the various fly-camps by boats and helicopters, including two operational choppers and a stand-by craft.

Logistics are complicated by great water level variations due to annual snow melt from the Andes Mountains. The level dropped almost 40 feet from June to October and then began to creep back up. (See before/after photo.) This means that in wet areas, a line cut a month before may be found suspended ten feet above ground by the recording crew! Other challenges are high temperatures and humidity.

Chief Observer Warren Hess and observers Querubin Vasquez and David Frisnegger run the recording operation. Their previous experience...
Mechanics Julio Reyna and Bill Seely keep all outboards, pumps, chainsaws and other equipment running. Trainee Randy Byerly is a new arrival to the crew and is pitching in where necessary and "learning the ropes."

Supervisor Chris Fox, Technician Joe Atkins, and Accountant Gregg Gelmis provide the crew with logistical, technical, and financial support from their base in the one-time boomtown of Manaus. This steamy frontier city is known for its opulent opera house, one of the few lasting remnants of a turn-of-the-century rubber boom. Now the city is a duty-free port and the springboard for all travel into the Amazon jungle.

With plenty of program ahead, Party 334 looks forward to a few more years of safe, productive work.
In April, 1985, the Western Reliance was transferred from the Gulf of Mexico to the North Sea to join Western Geophysical’s Europe, Africa, and Middle East fleet. After continuous successful operations, the crew finally took a break when the ship stopped for repairs and equipment changes.

The Reliance was drydocked in South Shields near Newcastle, England in January and February, 1987, to be modified for state-of-the-art seismic technology now required throughout the industry. Jim Henderson, London marine engineer, took total responsibility for the task of all seismic modification with the able help of Jeff Rupert, field service supervisor for Marine Energy Source Systems. The modification was completed in record time.

The gun capacity was increased from two to four strings and relocated to the upper deck. A dual-cable capability with the LRS-16A and the new trilateration system was installed. Much credit goes to Axel Thomsen who supervised and designed much of this gear.

During modification, the crew, led by Senior Coordinator Howard “Slim” Peters, was undergoing the rigors of safety and survival training in Aberdeen, Scotland. Among those who attended the training sessions were Brian O’Neill, Kamran Khan, and Tom Southam. All passed with flying colors. During the course of the year, their extensive training was instrumental in the ship’s passing all safety audits required by our clients.

From April through September the Reliance conducted 3-D surveys in the North Sea. The gun department, consisting of Derek Heyes, John Wharton, Roger Shaw, Andy Statham, Jose Lopez Dos Santos, Domingo Halog, Nanni De La Cruz, and Percival Nazareno, kept things running with maximum efficiency. Navigation was led by Phil Harvey with the able help of Tom Southam, Andy Atkinson, Adrian “Noddy” Jones, and David Bailey.

Thanks go to our techs and recording room staff under the leadership of instrument techs Iain Hopkins, Donald Rose, and Phil Cardno. Senior observers are David Lapping, Martyn Burton, Mick Purtill; and observers are Dean Booth, Brendan Bayliss, and Quentin Kitson.

Over the past year, the ship’s crew has changed, but the high standard by which this vessel is run has never slacked. Special thanks to the rest of our crew. We must mention Ole Jensen, Fin Peterson (who incidentally will represent Denmark in the upcoming Olympiad in Seoul), Tommy Sorensen, Ronan Henderson, Agge Juul, Jens Sorensen, and Rene Hansen. We’re looking forward to shooting many more seismic kilometers with this great team.

The Western Reliance, operating out of the London office, has searched the waters of the North Sea since 1985.
Party 107—
Western Cove

Reporter, Guy Bradford
Photographers, Ian Wingfield and Guy Bradford

In September, the Western Cove underwent repair work to her twin streamer cable reels in Invergordon, Scotland. This work was conducted by a local firm and supervised by the Cove's Chief Engineer Sammy McGarry, assisted by engineers Eigil Hanssen and Finn Neilsen. Since the repair entailed a two- to three-day stop-over, an "over-the-side" abandon ship and sea survival exercise was scheduled to familiarize crew members and some London personnel with safety procedures. The seismic crew was represented by Coordinator Robert Eastcroft, senior observers Mathew O'Connor and Ian Robertson, Navigator Lewis B. Waldran, Technician Guy Bradford, and gun mechanics Ernie Sabado and Romeo Rodrigo. The exercise was supervised and assisted by Captain Sven Moller and mates Jurgen Fabian and Mike Popescu. London headquarters was represented by Party Manager Richard Llewellyn and QC representatives Colin Wilson and Paul Wiffin.

The purpose of the exercise was to launch the Cove's powered lifeboat and test the crew's ability to launch and enter a Viking-type life raft, several of which are kept on board. Most of the crew had launched a lifeboat but few had any experience with the liferafts and these are not generally deployed except in a genuine emergency. A video recording of the day's events was shot, the camera being ably wielded by Gun Mechanic Ian Wingfield, who had previously completed a North Sea survival course.

The powered lifeboat was launched as was the Zodiac, which is normally
used in a "man overboard" situation. The life raft was then deployed, and the participants in the exercise donned regulation transit survival suits and lifejackets and boarded the lifeboat. While survival suits and lifejackets prove cumbersome, they should ensure prolonged survival in the harsh conditions commonly encountered in the North Sea.

The boats moved to open water in an adjacent cove with Mate Mike Popescu at the helm of the Zodiac and Chief Mate Jurgen Fabian at the helm of the lifeboat. In order to simulate a "worst case" situation, the Viking liferaft was overturned and a group of four crewmembers entered the water and proceeded to the raft, righted it, and entered. They transferred back to the lifeboat, and the second group of four crewmen completed the same procedure. Back on the Cove to dry out and enjoy hot coffee, crewmembers viewed the recording and discussed the day's events.

The overall response of those taking part in the exercise was optimistic. The exercise was conducted to increase awareness of the problems associated with emergency situations and to develop appreciation of the need for proper training. With very few snags, the crew coped well with the unfamiliar routine and felt it would benefit, as would most other crews, from more exercises of this type.

Chief Engineer Sammy McGarry (left) and Senior Coordinator Robert Eastcroft pose in front of the Cove's twin reels.

Senior Observer Mathew O'Connor enjoys breakfast aboard the Western Cove.

Geophysicist Paul Wiffin (left) and Navigator Graham Fogg take a break in the galley of the Western Cove.

Crewmembers deploy a motorized lifeboat during a safety drill on the Western Cove, working near Cromarty Firth, Scotland.
Western Geophysical’s Crew 724 has been working in Catron County, New Mexico. This year the base of operations was Reserve, New Mexico, where ranchers still flank and brand their cattle the old-fashioned way. In contrast, Western uses every modern geophysical method to locate oil and gas.

The terrain in west central New Mexico is a rugged blend of plains, mesas, and forested mountains. Most of the program was conducted near the Cña National Forest. It was a test of limits to do conventional drilling and vibroseis in an area where road travel is often complicated by wash outs and fallen trees. Most of the seismic lines followed winding mountain roads, creek bottoms, and dry washes.

A six-man survey crew was organized and sent to begin a 300-mile program. The crew was led by Head Surveyor Mike Terpening, and assisted by surveyors Roy Torreo and Brett Dehatter. The surveyors laid out line as straight as possible for the cable and geophone array. Trucks could not always follow that route; so a second line was required for offset vibe points, air shots, and shot holes. Frequently the second line was out of view of the first line. The surveyors quickly agreed that the beautiful mountains made for difficult surveying.

The drilling crew, including Roy Ireton and Dean Pearson, encountered a variety of drilling conditions. Without fail, where the drilling was poor, such as on the plains of San Augustine, the “going was good” for the crew. Roy never got nervous when the crew closed in on him. His experience told him that just over the hill, he could gain his lead by air drilling shot holes almost as fast as he could park his rig.

Observers Jerry Lawson and Scott Schilling, aided by Junior Observer Jim Archer, arrived May 1 to oversee a team of 16 juggies. Their system performed almost without a hitch, when weather permitted. The monsoons of
late July and some afternoon thundershower showers are facts of life in New Mexico’s mountains.

The narrow forest roads made the prospect a driving test for vibrator operators Gary Williams, Trent Anderson, Vaughn Sutton, Jerry Adams, Brett Lansdorff, and Rick Glen. They managed to wind and squeeze their large trucks between the ponderosa and pinion pine, thanks to Vibrator Mechanic Dave Butcher. Route scouting had Dave spending almost as much time trimming back tree limbs as working on and under the vibes.

This is the second year that Party Manager Bill Stoffel has had Crew 724 in Catron County. He felt that the work this year went exceptionally well. Stoffel adds, “Full cooperation of the crew made high production levels and quality possible.”

724 vibrator operators plan traffic control.

Part of 724’s front crew includes (from left to right) Mark Janisch, John Flannery, Ede Burgess, Raymond Najar, Greg Simons, James Mallett, Tamara Tonoff, and Rogerio Garcia.
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Working on the production control assembly line for Western Research is Dan Dieu Tien.

Lead Playback Technician Sherri Pileggi, celebrating 15 years with the company this year, donates blood at one of Western’s recent blood drives.

Party 178 Observer Toby Dawson prepares to roll DIGISEIS buoys closer in to land on a line in the Ogooue River, West Africa.

As materials control manager, Craig Keefner assists field personnel with support, parts, and service in addition to maintaining stock inventory.
Gun Mechanic Don Jenkins guides waterguns up the gun tray aboard the Western Challenger, currently working in the North Sea.

Operator Tammy Wu, with Western Geophysical for over seven years, continues to work at Western's main building after the majority of the Data Entry department moved to the Western Atlas Center in April.

Dahlia Haugen works in field support for the Western Hemisphere, handling visa processing, database files, and cross-charging for the navigation group of that area.

Based in California are Cable Pusher Steve Lohn (left) and Vibrator Mechanic Dave Butcher with Party 724.
Party managers Paul Reeves (left) and Duncan Riley, with Crew 390 in Nigeria, work on a 3-D QC display at a recent convention in Lagos.

Party Manager Gunnar Gustafson (left) and Surveyor John Eckert prepare for a safety inspection of Crew 334 in South America. (Photo by Wayne Prince.)

Ten-year employee Dorothy Bolin assembles electronic production boards in the Engineering department at Western Research.

Party 334 Observer David Frisnegger works on the Sercel 368 tape deck. Crew 334 currently works in the Amazon jungle.
Manager Pat Peck congratulates Lead Shipping-Receiving Clerk Donna White on 15 years of service with Western Geophysical.

Office Manager Patricia Greeson celebrated her 15-year anniversary with Vice President Ben Langston (left) and Manager of Operations Jim Denniston.

In Memoriam

On December 30, Ernie Jopp, party manager of Crew 759, died of injuries received the previous day in a vehicle accident in Kuwait. He had been with Western since 1974. His death was a great loss to Western Geophysical, Eastern Hemisphere Land division, and certainly to those of us who knew him personally as a very capable employee and as a friend. The following poem was written by Driller Les Mellett on behalf of Crew 759 as their memorial for Ernie. —Grover Graham

For Ernie

The short spark of life, how briefly it glows,
'Tis like a candle in the breeze,
It burns so bright, before it goes,
Leaving only shadows of memories.

The cold hand of Fate, with uncaring touch,
Did reach and stroke your face,
Where once you walked and lived so much,
There’s now a cold and empty space.

By Fate it was decreed, by Chance bestowed,
By whim they called your name,
You trod so briefly on life’s stony road,
When the candle lost its flame.

So many things are left unsaid,
When a life has reached an end,
And there’s no recalling time that has fled,
For saying farewell to a friend.
At a recent celebration dinner at the Rivoli Restaurant in Houston, Chairman of the Board Howard Dingman (top, left) and Western Geophysical President Neal Cramer (bottom, right) share anniversary congratulations with (back row, left to right) Vice President Ben Langston, Manager Jim Denniston, and Vice President Vic Boyd all with 35 years with Western, and Vice President Bill Brooks (bottom left) with 40 years.

Martin Wiltshire (right), customer service manager, receives his 20-year service pin from Damir Skerl, senior vice president, in July.

Quality Control Supervisor Lupe Rodriguez celebrated 15 years with Western in September.

Director of Electrical Engineering Ted Cruise (left) congratulates Manager Dave Cunningham on 15 years of service with Western in January.
Manager Mike Norris (right) celebrated 15 years of service with Senior Vice President Damir Skerl in July.

Starting clockwise from the left, Senior Secretary Janet Loveday, Vice President Ben Langston, Manager Richard White, and Supervisor Jay Silverman share anniversary congratulations with Manager Joe Walker (seated) on 25 years of service with Western in November.

Larry Gauger, senior programmer for Western Research in Denver, receives his 15-year service pin from Western Geophysical Manager Dan Wisecup (right).
They Serve

Service Anniversaries—
November, December,
January, February

42 YEARS
Jordan, James B.

41 YEARS
Haug, Kurt

36 YEARS
Gehring, Carl R.
Riley, Wilbur

35 YEARS
Langston, Benjamin L.
Perdue, Harold T.

34 YEARS
Brookes, George

32 YEARS
Braun, Leslie E.
Scroggins, Billy O.

30 YEARS
Bakke, Ronald D.

29 YEARS
Hendricks, John L.
Scott, James R.

28 YEARS
Hudson, Mark N.

26 YEARS
Anderson, Robert K.
Arnold, Thomas J.
Fine, Cleo B.
Fuller, Alfred J.

25 YEARS
Cain, Donald F.
Schwartzfischer, Alfred F.
Walker, Joseph F.

24 YEARS
Curtis, Jr., William C.
Delgado, Juan F.
*Edwards, Charles Allen
*Graham, Grover R.

23 YEARS
Schmidt, William Clayton

22 YEARS
Folliermann, Jr., Otto
Laker, John D.
*Skaaning, Jack E.

21 YEARS
Bass, Ronald P.
*Bolduc, Maurice
Brown, Pamela W.
*Donnstauber, Dennis
Hancock, Guy John
Mason, Nigel S.
Metcalfe, Leventon
Peck, Francis Roy
*Reber, Gerald
Roblee, J. Len
*Selke, Otto
Siems, Lee E.
Wu, Changsheng

20 YEARS
Byrne, John P.
*Jones, Henry Curtis
King, Bernard Michael
*Sadar, Terry J.
Staniland, Russell O.

19 YEARS
Barker, Josh W.
Clark, Donald R.
*Lucas, Rodney
Mateker, Jr., Emil J.
Plas, Janice Ann
Skel, Damir S.

18 YEARS
Benedik, Warren
Camacho, Mario
Gilbert, Burlis R.
Russell, James Barton
Vagt, Volker

17 YEARS
Bice, John Wilson
*Byrne, Michael P.
Crowell, Jarett Lee
Durnall, James Milton
*McCreery, John Arthur
Scott, Parker Wright

16 YEARS
Amezquita, Amparo
Bernal, Jr., Faustino
Castillo, Jr., Andres
*Hill, Patrick George C.
*McBlain, Doug
Paddock, Danny L.
*Petersen, Lloyd
Smith, Gordon Gibbon
*Soloneno, Doug
Tevendale, Walter G.
Thielvoldt, Dean Wayne
*Trotter, Thomas Hugh
*Woods, Martin J.

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

14 YEARS
*Branch, Roger N.
Carney, Frederick G.
*Clark, Al W.
*Elliott, Darrel
*Favor, Mary Beth
Garza, Fernando
Glover, Jon B.
*Hickman, William M.
Ho, Emily C.
Jolly, Barbara A.
Mahrer, Tim J.
*Mitchell, Robert L.
Peck, Patrick Allen
Pileggi, Sherry Renner, Ernest
Schnieder, Beverly R.
Schoeppe, Robert A.
*Smith, Frederick
Smith, Sheila Ann
*Snowman, Leo F.

13 YEARS
Ardal, Ali A.
Armato, Anthony J.
Bogusz, Christopher
Brevelle, Frances V.
Bright, Gerald R.
Burton, Martyn
Chia, Susan
Clulow, Bruce Stuart
*Daniel, Karol Layton
Davis, Steven Howell
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Frentz, Richard Joseph
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Holt, Rod F.
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Lee, Pee
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*Lund, Roderick D.
Machacek, Deborah Lynn
*Mangum, Jr., Leo Wayburn
McNew, Billy D.
*Neff, Christopher Blaise
Ooi, Gilbert
Ost, Lyle H.
*Payne, Craig D.
Rainwater, Richard C.
Rohman, Sayo
Schembri, Gaetano
Stroth, Danny J.
Stevens, Linda K.
Tarnosky, Michael J.
*Thierjung, John C.
*Wagner, Lawrence E.
Wilkerson, James Phillip
Williams, Steven R.

12 YEARS
*Bereznak, Paul
*Caballero, Juvenal C.
Davis, Sue M.
Forshaw, J. Roy
Henkel, Geri E.
*Klorer, Jeffrey Paul
*Leach, Edwin
McClymans, Bruce H.
Ness, Jr., Raymond R.
*Rabczuk, Enrique
Shtopman, Karina
Williams, Vernon

11 YEARS
Alghandi, Saeed A.
Allgood, H. Dean
*Arnold, John David
*Bula, Ramiro Juan
Campbell, Robert
Carter, Steve L.
*Chown, David J.
*Clark, Jack
*Cook, Paul
Crefel, Douglas G.
Dodge III, Harland P.
Gilfooly, Jr., John F.
*Grace, Steven
Jones, Paul David
Lauck, David Stewart
Malak, Mamoudou S.
Mann, Rameet
Meister, Lee William
*Miller, Steve K.
Milne, Ian Campbell
Mosley, Gregory S.
Mouton, Loretta G.
Posada, John David
Pratt, Kathleen J.
Sander, Terence N.
Sanders, Charles W.
Sheldon, John David
Sloan II, Samuel Thomas
Todhunter, David N.
*Tortora, Fernando
Watts, Peggy T.
*Zirchik, Zane Paul

10 YEARS
*Bailey, David P.
Bertolino, Frank C.
*Bjorgan, Robert A.
*Black, Jared R.
Borg, Joseph Paul
Chapin, John C.
Charlton, Kenneth L.
*Courchene, Phillip M.
El Wazier, Abu Bakr Saye
Espinosa, Juan Hernan
Fisher, Steven E.
Fowler, John E.
*Freeman, Nicholas A. M.
Mallory, Jr., George H.
*Ibaezo, Augusta Atene
*Jackson, Beverly E.
*Johnson, Conrad Allen
*Juez, Antonio A.
Laue, Jeffrey P.
Lawson, Jerry Lee
Leonard, John F.
Lohn, Steve Mark
*Marks, Stephen
Maxey, James A.
Michener, Mary Jo
*Motthershead, Bryan J.
Moure, William B.
Munro, David Michael

* indicates a service anniversaire
9 YEARS
*Anderson, Manuel D.
*Arelliana, Victor T.
*Bannister, Phil
*Breedy, Charles Joseph
*Brown, David M.
*Caldwell, Arley D.
*Caldeleone, Brian
*Cano, Philip A.
*Chow, Dicky K. S.
*Clippinger, Clifford W.
*Collins, Richard O’Neil
*Dillard, Barry E.
*Eggleston, Peggy R.
*Esteves, Rui Da Cunha
*Evelyn, Francine M.
*Fleming, Michael
*Foster, Paul H.
*Francel, Ernest
*Gable, Richard Dale
*Garza, Abel Bergara
*Garza, Enrique
*Giambrato, Michael
*Haralson, Thomas R.
*Hargreaves, Neil D.
*Houston, Mark Harig
*Hubry, Douglas
*Jafarzadeh, Hooshang
*Kadlec, Murray
*Kovacs, George Thomas
*Le, Hien Thai
*Lee, Boyce Edward
*Loveday, Janet A.
*Lowe, James F.
*Maguire, Mike J.
*Moor, Retta L.
*Page, Gordon
*Patrick, Kevin
*Phillips, Sharon E.
*Philpott, Mike J.
*Pola, Terence Peter
*Puri, Ashwani
*Ropp, Kim
*Rezeende, Valdierc P.
*Rosaales, Norma I.
*Ruiz-Olalde, Juan-Jose
*Schilling, Paul S.
*Shaw, Patricia J.
*Smith, Sheila D.
*Stavinoha, Bernice A.
*Thorne, Stuart Patrick
*Trock, Michael
*Turnwald, Tom Steven
*Usmani, Rukaiya A.
*Vowell, Michael James
*Watson, Keith David
*Wells, Scott
*Wen, En-Tsu
*Wier, Jack
*Wotham, Miles C.

8 YEARS
*Atkins, Thomas L.
*Avila, Javier C.
*Baldwin, Robert H.
*Bauke, David L.
*Bird, Jr., Ronald Bruce
*Bledsoe, Donald W.
*Brown, Jr., Kelvin J.
*Butsri, Sangoun
*Buttle, David K.
*Campbell, Robert J.
*Cant, Steven W.
*Carville, Charles V.
*Chia, Patricia
*Coca, Jose A.
*Collinson, Anthony B.
*Cook, Ian Edward
*Dick, Christopher R.
*Dietz, Robert B.
*Dresner, Jerry Dean
*Duncan, Jr., Glenn E.
*Durrer, Peter James
*Elliott, Paul
*Fischer, Robert E.
*Fisher, Charles A.
*Francis, Earle James
*Francis, Malcolm P.
*Galarza, Frank M.
*Garcia, Mercedes C.
*Garrick, Barbara
*Garza, Jose A.
*Garza, Ruben M.
*Goethals, Robert
*Granite, Mona Conner
*Grauel, Ned W.
*Gryparis, Carmenista G.
*Hammers, Pamela J.
*Hanson, Harold
*Hartquist, Gary P.
*Heck, Ulrich
*Heinrichs, Wilhelm G.
*Henize, Kurt
*Hicks, Pamela Sue
*Hill, Garry Raymond
*Hughes, Owen Martin
*Ingram, Rickey Lee
*Jacobsen, Jeanette
*Johnson, John S.
*Johnson, Sherena Shillow
*Kearney, Robert G.
*Kennington, Philip J.
*Kerns, Clarence L.
*Khadjia, Yusup
*Kingston, Mark W.
*Kistin, Quintin C.
*Klitzing, Jon R.
*Kloog, Rolf
*Laumeier, Donavan G.
*Lewis, Dennis M.
*Little, John C.
*Little, Orman D.
*Lynn, Walter Stanley
*Malki, Mohammed S.
*Mathews, Stephen L.
*McArthur, Patricia
*Middents, Diane Knight
*Munoz, George O.
*Mottershaw, Andrew J.
*Mullen, John Stephen
*Nelson, Edward J.
*Ortiz, Rogelio
*Parberry, Virginia C.
*Parker, Robert E.
*Perk, Roger A.
*Pickering, Steven D.
*Posada, Paul M.
*Rando, Jr., Noel M.
*Ridley, Anthony James
*Roguski, J. Stephen
*Schultz, Paul R.
*Scott, Lester R.
*Siegfried, John
*Skulpoonkittip, P.
*Smith, Jack R.
*Smither, Mark J.
*Stieffette, Walter
*Thomas, Maria L.
*Treynis, Viesturs J.
*Tufekcic, Darko
*Vagnoh, Helen E.
*Vardi, Parmitj S.
*Vogel, Mark L.
*Wahed, Abdul
*Watts, Christopher A.
*Whitely, David A.
*Wilkinson, Freya
*Williams, Elizabeth R.
*Williams, Gary
*Williams, Lawrence S.
*Yong, Huan
*Zimmer, Jr., Edward D.

7 YEARS
*Abarr, Gregory J.
*Agarwal, Vinod Kumar
*Andreau, Marios
*Atkinson, Stephen J.
*Auble, William D.
*Barker, Glen P.
*Barker, John R.
*Barnes, John
*Beal, Carol Joyce
*Beile, David M.
*Benedetto, James J.
*Bird, Dale E.
*Bowie, Calley A.
*Brethauer, Howard A.
*Brooks, Timothy J.
*Bundrick, Robert H.
*Bussell, Wayman K.
*Buswell, Gregory Dean
*Butler, Richard
*Carter, Cyril G.
*Cheng, Tsau Chou
*Claridge, Vera W.
*Clark, Christopher A.
*Cobb, Ronald E.
*Cobern, David R.
*Constable, Michael E.
*Cooke, Martin
*Covington, Betty J.
*D’Hondt, Don
*Doustas, Roland L.
*Dawe, John Roger
*Dawe, Martin P.
*De Jager, Pieter
*Dean, Frederick Charles
*Derick, Rebecca A.
*Donner, Margaret P.
*Dowd, Stephen P.
*Doyle, Terry T.
*Ensom, Irene R.
*Ewell, Douglas W.
*Fielding, William C.
*Fillmore, John D.
*Froud, Philip R.
*Fyda, John William
*Garcia, Luis
*Garza, Trinidad A.
*Gibson, David William
*Gon, Clifford J.
*Gowers, Derek
*Grigori, Robert
*Guerre, Ricardo J.
*Haggag, Ismail B.
*Harder, Kim
*Hares, Michael J.
*Hartley, Stephen L. C.
*Helfin, Donald R.
*Hostetler, James
*Hughes, David J.
*Hunt, Deborah A.
*Irvine, Sarah A.
*Jolly, Barclay
*Joseph, Earlene L.
*Joubert, Yvette
*Khan, Mohidur R.
*Khan, Sardar B. D.
*Klein, Vickie J.
*Kocan, John
*Lane, John M.
*Lau, Pamela
*Law, Joseph Che Chung
*Leith, Simon A.
*Littlewood, Peter H. E.
*Lujan, Duane E.
*Lyons, June E.
*Manchee, George
*McCoy, Roger Allen
*Mckenzie, Michael E.
*McVinish, Michael L.
*McWilliams, Jimmy Dale
*Millman, Robert
*Mohr, Thomas J.
*Morgan, Eric L.
*Munoz, Silvia
*Newsome, Glenda L.
*Ng, Florence
*Nguyen, Charles D.
*Nguyen, Tung T.
*Niland, Keith W.
*Opuscoli, Claudio
*Owens, Sidney J.
*Parks II, William G.
*Patel, Daksha S.
*Penfold, William W.
Bryan, David W.  
Bryd, Linda L.  
Byrd, Linda L.  
Callaway, William N.  
Cardenas, Dora E.  
Clees, Charles A.  
Coleman, John.  
*Cazakowski, Charles R.  
Donnelly, Paul Howard  
Doudna, Lawrence D.  
*Dowlings, Dennis B.  
Drechnkahn, Frank J.  
*Domsky, Michael W.  
Dunn, Audrey D.  
*Edvald, Ronald S.  
*Emery, Dale G.  
Esbensen, Victor  
Favor, Gloria A.  
*Feuk, John C.  
*Fitzpatrick, Doin C.  
Gasson, Tracy M.  
*Gear, Barry  
Ghaly, Wagh Matta  
Greiner, Leroy O.  
Gurr, James  
Hamilton, Earl F.  
Hansen, Erik V.  
Hendrickson, Kathryn L.  
*Heron, Ryley M.  
*Hester, Richard R.  
Hodo, Robert Lee  
Huette, Ken A.  
James, Calyn  
Joshi, Kaur  
Jefferson, James K.  
Johnson, Lee  
*Kahn, Sardar Ehtesham  
Keck, Donald W.  
King, James  
*Knight, Lee  
Koonce, John H.  
Ledet, Russell J.  
*Lengstorf, Brett A.  
Mack, Jonathan M.  
Martin, Edwin E.  
*Martinez, Frances  
McDonald, Karen B.  
*McMenamin, Hugh J.  
Meeking, Matthew C.  
Merchant, Richard L.  
*Metzler, Dean  
*Mills, Samuel F.  
Mills, Scott A.  
Moore, David E.  
*Morrow, William C.  
*Mulhall, Malachy  
Murphy, Tom  
Ng, Chye  
Paliwoda, David L.  
Parker, Stuart  
Parker, William W.  
*Philpott, Jeffrey L.  
Pink, Paul B.  
Poe, Marian I.  
Prestemon, John D.  
Quinlan, Andrew  
Robinson, Richard  
Roslan, Akif  
*Shaw, Gregory C.  
Sheridan, James E.  
*Skibbe, William P.  
*Steigholme, David  
*Smith, Randall W.  
*Snyder, John C.  
*Stathopoulos, David J.  
*Szuces, Richard  
*Tableman, Mark J.  
Tayor, Charles David  
Thomas, Richard William  
Thomas, Roy Anthony  
Thomson, Jeffrey K.  
Thornton, Raymond H.  
Tshishiku, Sue L.  
Umfleet, Mark S.  
*Van Dyck, Janece E.  
*Vegh, Zsuzsa O.  
*Vial, Bernardo F.  
Virobik, Daniel Lee  
Weigle, Scott  
*Wilde, Dean Wharton  
*Williams, Danny  
*Williams, Sylvester  
*Wu, Shyan F.  
Zerby, John Charles  
Zysk, Romuald

*Peng, Linda C.  
Perez, Jesse  
Peterson, Ken  
Pinto, Maria V.  
Pollington, Denis H.  
Prozeller, David R.  
Raburn, Greg C.  
Randel, Eva  
Rimmer, William  
Roberts, Michael A.  
Sangster, Joseph E.  
*Schneider, Curt  
Scott, James H.  
Sinclair, Thomas G.  
Smith, Griffith C.  
Soongah, Ghanu  
Sparkman, Jr., Jackie W.  
*Stepper, Andrei R.  
Stoffel, William  
*Stowers, Michael Joseph  
Suwe, David D.  
Swerdlow, Richard S.  
Tan, Georgina  
Tekete, Ghirmay  
*Tao, You-Hsin  
*Vanovac, Vladimir  
*Vaughan, John  
Villarreal, Joe H.  
Vogler, Raymond E.  
*Wagner, Kenny H.  
*Wall, John  
Warner, D. June  
Waterman, Robert M.  
Wiltair, Thomas L.  
*Williams, Gary  
Wilson, Colin A.  
Wonica, George M.  
*Wolfe, Anthony E.  
Yapanci, George T.  
Yarborough, Terry L.  
Zepeda, Anna Marie

6 YEARS  
Aldridge, Carol  
Allison, Stanley L.  
*Atkinson, John R.  
Barker, Karrie A.  
*Bateman, Michael D.  
Bavousett, Mary A.  
Beal, Barry A.  
Bent, Marvin  
*Berquist, Richard  
Blankenship, David W.  
Boyer, Randy  
*Brown, Patricia A.  
Murphy, Tom  
Ng, Chye  
Paliwoda, David L.  
Parker, Stuart  
Parker, William W.  
*Philpott, Jeffrey L.  
Pink, Paul B.  
Poe, Marian I.  
Prestemon, John D.  
Quinlan, Andrew  
Robinson, Richard  
Roslan, Akif  
*Shaw, Gregory C.  
Sheridan, James E.  
*Skibbe, William P.  
*Steigholme, David  
*Smith, Randall W.  
*Snyder, John C.  
*Stathopoulos, David J.  
*Szuces, Richard  
*Tableman, Mark J.  
Tayor, Charles David  
Thomas, Richard William  
Thomas, Roy Anthony  
Thomson, Jeffrey K.  
Thornton, Raymond H.  
Tshishiku, Sue L.  
Umfleet, Mark S.  
*Van Dyck, Janece E.  
*Vegh, Zsuzsa O.  
*Vial, Bernardo F.  
Virobik, Daniel Lee  
Weigle, Scott  
*Wilde, Dean Wharton  
*Williams, Danny  
*Williams, Sylvester  
*Wu, Shyan F.  
Zerby, John Charles  
Zysk, Romuald

**Mattern, James L.  
McArthur, James  
McGinnis, William  
*Metcalf, Carl Obrien  
Meyer, Thomas J.  
*Morel, Kathryn L.  
Morse, James L.  
Pigon, Kimberly H.  
*Prozeller, John E.  
*Range, Charles  
Seabrook, Garth  
*Shaver, Shaun R.  
Taylor, James  
*Theriot, Trina  
Todd, Eric D.  
*Turk, Gerald R.  
Utech, Randall W.  
*Whitaker, Jr., James S.  

*Interrupted Service

If you have any questions regarding your service date, please call Payroll at (713) 972-5803 to update your records.