In the post-liberation era following the Iraqi invasion, Western Geophysical is helping Kuwait plan ahead into the next century by conducting a seismic survey that covers the entire country.

The new infield quality control group has numerous functions, from supplying field processing systems to system setup, technical support, and staffing—and frequently operating 24 hours a day, seven days a week.
When we consider our future growth, let’s look at a snapshot of where we are today. Currently, we have exciting operations in 43 countries, and we project reaching a total of 50 by the year 2000. Our field crew count stands at 76, and while we anticipate the number to increase, the exponential increase will be in the amount of data that these crews can record. The number of channels available for recording seismic data has increased tenfold in the last five years, and we expect the amount of data recorded by our crews to continue to double every few years.

Western maintains 38 processing centers worldwide, processing more than 3 million km of data in 1996 alone. Our Omega® Seismic Processing System (SPS), developed and supported by the Seismic Processing Software Department (SPS), has been implemented in over 70 offices and field locations within Western, and in an additional 26 centers around the world. The total number of Omega SPS installations is expected to approach 200 by the year 2000.

Our greatest avenue for growth is spec data. By the end of 1996, we will have over 3.2 million km of 3-D data in our spec data library, an increase of 83 percent in the last two years. We must continue to invest in our core spec areas, North America, North Sea, and Australia. Advances in new and larger marine acquisition technology and a wider industry acceptance of ocean-bottom cable (OBC) as a primary acquisition mode have opened up new trends and created exciting new spec opportunities for Western.

Compared to Western’s early days, these developments are almost unfathomable. But one thing still holds true today as it did for those first crews—our people are at the heart of our company, and how we develop our people determines how we grow as a company. We are committed to providing training and resources to our 9,300 full-time employees, 5,000 part-time employees, and 21 part-time training coordinators in the field. Last year, we trained nearly 3,500 employees, averaging three days per trainer. POF training occupied 38 percent of the effort, followed by 29 percent in technical training, 15 percent for quality, and 5 percent for managers and supervisors. Training efforts are growing in all areas, in the first six months of 1996 alone, technical training increased by 38 percent and management supervision training increased by 42 percent of the total effort.

When I talk with employees in Houston and crews worldwide, I hear a lot of positive feedback for these training efforts, and the results are clearly visible. Crew quality records of 1, 2, 3, and 4 million man-hours without a lost-time incident (LTI) are running in more and more offshore field locations throughout the world. Our R&D staff is on the leading edge of technology developments, with numerous patents and research projects underway that will help define the future of oil and gas exploration and production.

And every week in Houston, hundreds of Western employees file into the Henry Salvatori auditorium to participate in training sessions that contribute to their growth as individuals, and consequently, our growth as a company. Currently, we are investigating ways to develop a video link to broadcast these sessions live to other locations.

It’s all part of our vision of growth which begins, and continues, with each one of us.

President Western Geophysical
President's Message

Western Geophysical

I have seen the portrait of Western Geophysical's founder, Henry Salvatori, in the lobby of our Audubon auditorium - a nod to the legacy of our company's namesake. The Salvatori auditorium is probably the most dedicated place in our company for training and continuous learning. This is where we celebrate Henry Salvatori's legacy, and it is a day that we recognize as a company.

Western Geophysical's legacy is not just about the technology that we develop and support. It is also about the people who work for us and the values that we hold dear. These values include integrity, innovation, and a willingness to change. These values have enabled us to grow and thrive as a company.

Today, Western Geophysical is a company with more than 3.2 million km of data in our archives. We have over 300 employees, and we expect this number to increase. The number of channels that we have handled has grown from less than 100 to more than 50,000 per year. We have developed and supported more than 70 office and field locations around the world. The total number of channel segments handled by Western Geophysical is our daily agenda - pursuit of new frontiers and willingness to change. These are the values that have enabled us to grow.

Western Geophysical is a company with a commitment to safety. We have implemented technology training for our operators, and we have crossed into management, programs, and processes for all employees. Western Geophysical uses a staff of 31 full-time and 3,500 part-time employees, and we trained nearly 3,500 employees, with the effort, followed by 29 percent of the total effort. Training alone, technical training increased to 10 percent of the total effort. We have seen a lot of positive feedback for safety records of 1, 2, 3, and 4 million km of data, and more often from field locations. Technology developments, with numbers, the future of oil and gas exploration.

As we look into the Henry Salvatori auditorium, we see individuals, and consequently, our company. We develop a video link to broadcast these values, with each one of us, to remind us of our legacy.

Western Geophysical
Will Honeybourne has joined Western Atlas Oilfield Services as senior vice president of marketing and business development, responsible for worldwide marketing activities. Honeybourne will be located in the Houston office of Western Atlas.

A graduate of London's Imperial College, Honeybourne has served the oil services industry for 25 years in various field and management positions, most recently as president and CEO of Computalog, Ltd.

**BRANNAN NAMED EXECUTIVE VICE PRESIDENT**

Orval Brannan has been named an executive vice president for Western Atlas Oilfield Services, assuming additional responsibilities for business development, and will relocate to Western's London office. He will remain president of E&P Services and retain his present responsibilities for PetroAlliance (Western's Russian joint venture).

First joining the Western Geophysical division in 1966, Brannan supervised and managed Western's digital systems, Houston field services, and Alaska operations. He became vice president of Alaska marine operations in 1980, a position he held until 1986, when he was named vice president of domestic operations. In 1990, Brannan was elected senior vice president in charge of Western Hemisphere operations, and became executive vice president of Western Geophysical in 1991. He became a vice president of Western Atlas International, Inc. in 1991, and was named president of Western Geophysical in 1992. Brannan was elected a senior vice president of Western Atlas Inc. in 1994, and was named president of the E&P Services division later in 1994.

**Skerl is Executive Vice President**

Danir S. Skerl has been appointed an executive vice president of Western Atlas Oilfield Services, assuming additional responsibilities for technical and business development by coordinating strategy and technology for future growth, while continuing to serve as president of Western Atlas Logging Services.

Skerl graduated from the University of Zagreb with an engineering degree in applied geophysics and geology of mineral resources. He began his career as a geophysicist with Geofizika in Zagreb, Croatia, and was promoted through a series of positions before joining Western Geophysical in 1969 in the Houston Data Processing Center. In 1970, Skerl became technical manager of seismic data processing in Milan, Italy, and in 1973, transferred to Western's Houston office as manager of the Land Data Processing Center. In 1975, he was promoted to vice president of Western Geophysical, and will continue to be based in Western's Houston head-quarters. He will retain his position as an assistant secretary for Western Atlas Oilfield Services.

A graduate of the University of Texas and Harvard Law School, Solis joined Western Atlas in 1988 as senior attorney representing the Core Laboratories division. In 1991, he assumed the position of senior attorney for Western Geophysical.

**Dibattista is VP - EAME Data Processing/New Ventures**

Angelo DiBattista has been promoted to vice president of Europe/Africa/Middle East (EAME) Data Processing/New Ventures for Western Geophysical, where he will be responsible for overseeing data processing operations and marketing all of Western's services in the EAME. He is based in Western's London location.

DiBattista began his career with Western in Italy in 1968 as a data processing analyst. After a brief overseas assignment in Norway, he was transferred to the London office in 1980 with the task of developing the onshore seismic processing business. In 1982, DiBattista was promoted to manager of EAME Land Data Processing, and a few years later, took on responsibility of the marine processing business. He was appointed general manager of data processing in 1993 and in 1994, was promoted to general manager of data processing operations for EAME and the C.I.S. region.

**DRAKE IS AREA MANAGER - W. TEXAS, MID-CONTINENT, S. TEXAS, AND S.E. U.S. REGIONS**

Richard Drake has been named area manager of Western in Texas, Mid-Continental, South Texas, and Southwestern regions for Western Geophysical, and will relocate to Western's Houston head-quarters.

**Degner is General Manager of Latin America Land Operations**

Richard Degner has been appointed general manager of Latin America Land Operations.
Skel graduated from the University of Zagreb with an engineering degree in applied geophysics and geology of mineral resources. He began his career as a geophysicist with Geofizika in Zagreb, Croatia, and was promoted through a series of positions before joining Western Geophysical in 1969 in the Houston Data Processing Center. In 1970, Skerl became technical manager of seismic data processing in Milan, Italy, and in 1973, transferred to Western's Houston office as manager of the Land Data Processing Center. In 1975, he was promoted to vice president of Europe/Africa/Middle East operations in Western's London office. In 1983, he became senior vice president of Western Geophysical and managing director of Western Research. Skerl was promoted to senior vice president of international operations in 1989, with continued responsibilities for Research & Engineering and software development. He was appointed assistant to the president in August, 1990, and assumed the position of executive vice president of Western Atlas International, Inc. that same year. Skerl was appointed to his present position as president of the Western Atlas Logging Services division in 1992, and in 1994, he was elected a senior vice president of Western Atlas Inc.

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José Solís has been appointed vice president of law for Western Geophysical, and will continue to be based in Western's Houston headquarters. He will retain his position as an assistant secretary for Western Atlas Oilfield Services.

A graduate of the University of Texas and Harvard Law School, Solís joined Western Atlas in 1988 as senior attorney representing the Core Laboratories division. In 1991, he assumed the position of senior attorney for Western Geophysical.

Richard Drake began his career with Western in 1975 on a field crew in Big Lake, Texas. He has held a variety of positions in U.S. Land Operations, including observer, assistant party manager, and in 1980, was promoted to party manager. After serving as supervisor of West Texas, Drake was promoted in 1994 to manager of West Texas/Mid-Continent.

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Richard Degner has been appointed general manager of Latin America Land Operations for Western Geophysical, and will continue to be based in Western's Houston headquarters.

José Solís has been appointed vice president of law for Western Geophysical, and will continue to be based in Western's Houston headquarters. He will retain his position as an assistant secretary for Western Atlas Oilfield Services.

A graduate of the University of Texas and Harvard Law School, Solís joined Western Atlas in 1988 as senior attorney representing the Core Laboratories division. In 1991, he assumed the position of senior attorney for Western Geophysical.

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Skel is executive vice president of Western Atlas Oilfield Services, assuming additional responsibilities for technical and business development by coordinating strategy and technology for future growth, while continuing to serve as president of Western Atlas Logging Services.

Kirk Girouard

Kirk Girouard has assumed the expanded responsibility of operations manager of Latin America Land crew activity for Western Geophysical, and continues to be based in Western's Houston headquarters. After graduating from Lamar University with a bachelor's degree in mathematics, Girouard joined Western Geophysical in 1973 as a data processing analyst, and in 1979 was named manager of the Bogota processing center. His diverse background with Western has included field supervisor in West Africa, resident operations manager in Venezuela and Bolivia, and manager of Gulf Coast shallow-water operations. In 1994, Girouard became area manager of Southern Latin America.

Manager of Latin America Land Operations

Richard Degner has been appointed general manager of Latin America Land Operations for Western Geophysical, and will continue to be based in Western's Houston headquarters.

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VANCE IS MANAGER, WEST TEXAS/MID-CONTINENT

John Yance has been promoted to manager of Alaska operations, and will relocate to Western’s Anchorage office.

After graduating from Texas A&M University in 1980, Davis began working for Western Geophysical on a field crew on the North Slope of Alaska. He has held a variety of management positions within the Alaska operations group, and most recently served as supervisor of Alaska operations.

SCHAFER IS ALASKA SUPERVISOR

Brett Schafer has been promoted to supervisor of Alaska operations, and will relocate to Western’s Anchorage office.

After his graduation from Boise State University in 1985 with a degree in geophysics, Schafer began his career with Western Geophysical on a field crew in the Rocky Mountains. He has held a variety of technical and management positions in both land and marine operations, and most recently was field supervisor of Western U.S. operations.

DRAKE PROMOTED TO SUPERVISOR - WESTERN U.S.

Kevin Drake has been promoted to supervisor of Western U.S. operations, and will relocate to Western’s new Denver office.

After receiving a bachelor’s degree in geology from the University of Wyoming in 1981, Drake began his career with Western Geophysical on a South Texas field crew. He has held various field management positions, and his most recent assignment was field supervisor of Western Texas operations.

HILL MOVES TO SPECULATIVE DATA SALES

Harvey Hill will join the Western Geophysical Marketing Department as Senior Account Representative, and will continue to be based in Western’s Dallas office.

A graduate of the University of Wyoming with a bachelor’s degree in geology and geophysics, Hill began his career with Western in 1977 as a data processor in the Denver office. After starting the Seismic Inversion and Special Projects group in 1979, he was promoted in 1981 to processing group trainer. Hill became a senior processing analyst in 1984, and processing supervisor in 1986.

PITTMANN PROMOTES TO PROCESSING CENTER MANAGER

Mike Pittman has been promoted to the position of Manager of Western Geophysical’s Dallas Processing Center, and continues to be based in Western’s Dallas location.

Pittman joined Western Geophysical from Halliburton Geophysical Services (FK) in 1994 as a processing supervisor. He rejoined Western in 1997, and has been processing supervisor in Houston since 1999. Pittman has held various supervisory positions within the processing group in the Dallas office.

PORTEOUS IS NAVIGATION FIELD SUPPORT SUPERVISOR

Stuart Porteous has been appointed supervisor of Navigation Field Support for Western Geophysical’s Western Hemisphere Marine Operations, and will continue to be based in Western’s Houston headquarters.

After his graduation in 1983 from Auckland Technical Institute with a telecommunications degree, Porteous joined Western’s Latin America center working as a navigator, navigation technician, and 3-D QC technician until 1985, when he transferred to the Europe/Africa/Middle East center for two years as a navigator/technician and 3-D QC technician.

Porteous rejoined Western in 1989 as a navigation field support engineer, and in 1991, helped form the Applied Technology Navigation department, serving as a navigation engineer. In 1995, he transferred to Western Hemisphere Marine Operations as a geophysical support group, where he worked as a geophysicist.

TURNER NAMED MID-CONTINENT SUPERVISOR

David Turner has been promoted to supervisor of Mid-Continent, and will relocate to Western’s Oklahoma City office.

Turner began his career with Western Geophysical in 1980 as a surveyor on a field crew in West Texas. He was promoted to party manager in 1991, and most recently held the position of field supervisor of West Texas operations in West Texas operations.

DAVIS NAMED MANAGER - ALASKA

John Davis has been promoted to manager of Alaska operations, and will continue to be located in Western’s Anchorage office.

After graduating from the University of Texas in 1979, Davis held a variety of management positions with the North Slope of Alaska. He has served as supervisor of Alaska operations, and will continue to do so.

Mega Survey acquisition complete

The acquisition phase of the MEGA Survey™ program was completed in April of this year. Initially planned to include 450 Outer Continental Shelf (OCS) blocks, the survey quickly grew to 705 blocks (over 16,000 sq km) because of industry interest, and is the largest contiguous 3-D speculative survey ever conducted in the Gulf of Mexico. Acquisition was projected to take six crew years; however, Western Geophysical’s ocean-bottom cable (OBC) crews working on the survey were able to complete the survey in three and one half years.

The MEGA Survey has become the anchor of Western’s ongoing speculative coverage in the continental shelf region of Gulf of Mexico. Using such leading edge OBC technology as Dual Sensor acquisition, which extends the bandwidth of recorded data, allows Western to acquire dense coverage, and long-offset data, as well as obtaining uniform coverage beneath production platforms and drilling rigs. Seismic processing software was developed and continuously upgraded to keep up with the demands of the survey. Additionally, the Houston marine processing center doubled their computing resources during the course of the survey. These innovations will continue to be invaluable to Western in the future.
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A graduate of the University of Wyoming with a bachelor's degree in geology and geophysics, Hill began his career with Western in 1977 as a data processor in the Denver office. After starting the Seismic Inversion and Special Projects group in 1979, he was promoted in 1981 to processing group leader. Hill became a senior processing analyst in 1984, and processing supervisor in 1986.

After developing the Dallas market for several years, he transferred to Dallas and opened the Remote Processing Center in 1989. He was promoted to area manager for Western's Oklahoma City, Midland, and Dallas remote processing centers in 1991. In 1993, Hill relinquished those duties and concentrated on the Dallas processing market, serving as the Dallas Center manager for the past seven years.

PITTMAN PROMOTED TO PROCESSING CENTER MANAGER

Mike Pittman has been promoted to the position of Manager of Western Geophysical's Dallas Processing Center, and continues to be based in Western's Dallas location.

Pittman joined Western Geophysical from Halliburton Geophysical Services (HGS) in 1994 as a processing supervisor. During his 14-year career with HGS and its predecessor, Geophysical Service Inc., Pittman held a variety of domestic and international positions, including party chief/processing supervisor in Oman. Pittman graduated from the University of Texas with a bachelor's degree in mathematics and physics.

MEGA SURVEY ACQUISITION COMPLETE

Harvey Hill

MEGA Survey acquisition complete

The acquisition phase of the Mega Survey™ program was completed in April of this year. Initially planned to include 430 Outer Continental Shelf (OCS) blocks, the survey quickly grew to 705 blocks (over 16,000 sq km) because of industry interest, and is the largest contiguous 3-D speculative survey ever conducted in the Gulf of Mexico. Using such leading-edge OBC technology as Dual Sensor acquisition, which extends the bandwidth of recorded data, has allowed Western to acquire dense coverage, and long-offset data, as well as obtaining uniform coverage beneath production platforms and drilling rigs. Seismic processing software was developed and continuously upgraded to keep up with the demands of the survey. Additionally, the Houston marine processing center utilized their computing resources during the course of the survey. These innovations will continue to be invaluable to Western in the future. By all accounts, the Mega Survey program has set a new standard for seismic data quality in the Gulf of Mexico.

At the beginning of the survey, only one Western OBC crew was acquiring data for the survey, but as it quickly gained support throughout the industry, Western allocated four crews...
Western’s worldwide customer satisfaction survey is complete, and analysis has begun. A letter has been sent that includes the highlights of what our customers say we are doing well and where we have opportunities for improvement. Since signing the survey was optional, the follow-up letter was mailed to everyone who received the original survey. Westerners will also learn how our customers view us through memos, articles, and meetings. Our survey was designed to measure our clients’ overall impression of Western, rather than opinions related to a specific project or even. This overall impression will help us understand Western’s leadership role in the geophysical industry. It will also allow us to focus efforts on the aspects of the business that our customers see as most important. With the knowledge from the survey, each of us can begin to improve the way that we do our work. Focusing on meeting the needs and perceptions of our customers will aid us in designing ongoing continuous improvement activities.

Thanks go to all employees who assisted in distribution and collection of the survey. We especially appreciate those clients who took the time to give us their perceptions.

Senior Geophysicist Gary Bashlor (left) and Geophysicist Wayne Richard reviewed the data.

Quality at Western

CUSTOMER SATISFACTION SURVEY COMPLETED

News Briefs

Western starts Ultra Survey

LARGEST DEEPWATER SURVEY

In August, data acquisition began for the largest deepwater 3-D seismic survey ever conducted by Western Geophysical in the Gulf of Mexico. The Ultra Survey™ program will cover approximately 1,000 Outer Continental Shelf (OCS) blocks in deepwater areas of the Gulf. Results of the initial phases should be delivered to clients by year’s end and the entire survey is expected to be completed in less than three years.

The Ultra Survey data will be “non-exclusive” speculative data, owned by Western Geophysical, and licensed to our oil company clients. Western’s library of speculative data, already the largest in the world, presently covers most of the other blocks that were bid on or awarded in the April licensing round...over 100 companies bid in excess of $700 million on almost 1,000 OCS blocks located primarily in deepwater regions. Approximately 200 of these blocks are located offshore Louisiana in the Green Canyon, Walker Ridge, Atwater Valley, and Mississippi Canyon areas, and are the focus of the Ultra Survey.

“The timing of this survey was very attractive to us for a number of reasons,” said Richard White, president of Western Geophysical. 

“Exploration efforts by oil companies in deepwater areas of the Gulf have become increasingly successful with...”
Western Crew Completes Chad Project

PARTY 771 BEGINS OPERATIONS IN NIGER

Reporter Paul Roberts

After completing an 18-month 2-D and 3-D data collection contract, Party 771 recently moved from Chad to Niger and will begin a 2-D data acquisition and processing project covering 1,300 km. The area of operations is in the Agadem Block in the far east portion of Niger on the frontier with Chad, and just to the north of Lake Chad. Party 771 was operating in the same area last year, but on the Chad side of the border.

The remoteness of the program, which stretches the length of the block and covers a distance of 330 km, poses many logistical problems. An advanced base of operations has been set up in the town of Niamey, the capital of Niger. Named is located in the far west portion of Niger and is some 1,500 km from the area of operations.

Due to client requirements of rapidly processing a selection of lines and assessing new programming, the crew processing system was upgraded to enable full in-file processing. A data compression link via satellite was installed to send processed data to the client in Houston for quick evaluation and further processing.

Knowing the location of the operation in Niger, Elf Operaciones S.A.

A new office was opened in Niamey, staffed by Open Manager Paul Roberts and Accountant Peter Raitha to support the crew and liaise with the client. In addition, Western’s Chad office, Resident Manager Rael Black and Administrator Hamid hadadine provide support. Regular flights to N’Djamena carry food, supplies, and provide personal recreation.

From left) Airfrance Manager Miss Diallo, with sister and Western Geophysical Administrator Bailaou Diallo

Western Geophysical President Richard White (right) awards Mike Shen (fourth from left) with a 1996 Western Atlas Inc. National Merit Scholarship. Mike received his four-year scholarship along with congratulations from (left to right) Business Senior Programmer Analyst Jean Shen, Senior Vice President - Worldwide Data Processing Joe Chatoor, Mike’s brother and Western summer intern Jason Shen, mother Susan Shen, father and Senior Programmer J. T. Shen, and Processing Software General Manager Gary Fair.

Western People
measurements. Longer offsets correspond to larger angles of incidence and stronger changes in reflection amplitude," added Chambers.

In view of the magnitude of the Ultra Survey program and the acquisition method that is being utilized, Western is once again making seismic history. The dedicated, ongoing teamwork of Western Hemisphere Marine, Houston Marine Processing, and marketing groups in Houston, Dallas, and New Orleans assures that the Ultra Survey program will be another successful venture for Western Geophysical.

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Reporter Paul Roberts

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An office was opened in Niamey, staffed by Operations Manager Paul Roberts and Accountant Peter Raithatha, to support the crew and to liaise with the client. In addition, Western’s Chad office Resident Manager Russell Black and Administrator Hamid Hadadine provide support. Regular flights from N’Djamena carry food, supplies, and provide personnel rotation.

An office was opened in Niamey, staffed by Operations Manager Paul Roberts and Accountant Peter Raithatha. The evening was a great success, thanks to the organizational skills of local employees, Administrator Balaou Diallo and Secretary/Receptionist Aminatou Boube. The event gave our guests the opportunity to view the new office and gain an understanding of Western’s Niger operations.

Reception in Niger

Western’s Niamey office held an official reception to celebrate the commencement of operations in Niger, with over 35 guests attending from a number of government ministries, clients, and major suppliers. On hand for the event were Western Geophysical Operations Manager Paul Roberts and Accountant Peter Raithatha. The evening was a great success, thanks to the organizational skills of local employees, Administrator Balaou Diallo and Secretary/Receptionist Aminatou Boube. The event gave our guests the opportunity to view the new office and gain an understanding of Western’s Niger operations.

Western Geophysical President Richard White (right) awarded Mike Shen (fourth from left) with a 1996 Western Atlas Inc. National Merit Scholarship. Mike received his four-year scholarship along with congratulations from (left to right) his uncle Senior Programmer Analyst Jason Shen, Senior Vice President - Worldwide Data Processing Joe Chatoor, Mike’s brother and Western summer intern James Shen, mother Susan Shen, father and Senior Programmer J. T. Shen, and Processing Software General Manager Gary Fai.

Western Geophysical Operations Manager Paul Roberts, AirFrance Manager Miss Diallo, Esa Niger Operations Supervisor Eric Harris, and Esa Niger Financial Manager Mark Spencer
VENEZUELA WORK INCREASING

Western Geophysical has been awarded additional seismic survey work in Venezuela which will increase the number of crews working in that country from one to four.

"Western was recently selected to survey several new, large projects in Venezuela," reported Latin America Land Operations General Manager Rich Degner. "These projects are quite varied and include large transition-zone, shallow marine, and land 3-D seismic surveying requiring a significant capital investment by Western. We are currently purchasing state-of-the-art recording systems, low-distortion geophones, conventional and ocean-bottom cables (OBC) recording cables, and new drilling technology. We are also building houseboats and other purpose-designed marine vessels. Additionally, we are transferring some of Western's finest people into Venezuela to support and manage the new activities. We feel strongly that, with this new equipment and additional personnel complementing the local knowledge and expertise already established during our 30-year presence in Venezuela, Western is the leading geological service provider in Venezuela."

Party 335 began recording a 190 sq km 3-D project in August near Tacupita. The Camo Manamitio River runs through the center of the project and the majority of the terrain consists of swamps. The program also passes through the town of Tacupita. A Sercel 366/WAPS 1000 system serves as the recording instrument, and the crew is supported by a fleet of vehicles, boats, and a helicopter. One boat serves as the airgun source in the river, and three airboats assure access to many of the difficult areas. The crew is under the supervision of party managers Mike Gurski and Manual Yarzabal, and is projected to complete the job in early November.

Party 343 begins surveying a high density 3-D project covering 176 sq km, located south of Paria in southern Anzoategui state, which involves the production of heavy oil from the Zuata field. Directed by Field Supervisor Mark Yale and party managers Mike Gurski and Nestor Capiello, drilling began in early September, with recording commencing near the end of October. A 2,000-channel I/O System Two records the data from a 1.5 lb dynamic source drills to 9 m. In early September, Party 345, under Supervisor Doug Altan and Party Manager Alfonso Echeverri, began a vibration/dynamite project in the Quiriquire oil field near Maturin. Vibration is used where roads permit; however, the mountainous terrain requires portable rigs and buggy drills, augmented by helicopters in the most difficult areas. The project is expected to finish in approximately four months, with recording operations commencing in December. Party 345 is also scheduled to begin surveying a 440 sq km program in the Guaripiche block in December. Design is being finalized for this job, which should take about five months, and is located in a remote area that includes both swamp and dry land.

Party 60, supervised by Larry Doudna and party managers John Bartcz and Steve Abston, began surveying an extensive project in Lake Maracaibo at the end of October. This major survey, totaling approximately 2,200 sq km, is expected to run about 12 months. For this project, Western will be field testing an innovative bubble-screen system to attenuate high-frequency reverberations that are frequently observed in many areas of Lake Maracaibo.

In November, Party 336, supervised by Jim Sedzik and party managers Terry Sadler and Jim Scott, will begin surveying a classic transition-zone project of about 440 sq km in the Golfo De Paria. A state-of-the-art houseboat is now under construction to serve as camp and will sleep up to 96 people. The houseboat will be anchored offshore near the project to reduce travel time. The crew will work in water depths of from one to 40 feet with six-foot tides. Telemetry equipment will record data, with dynamite and airguns providing the source. Ten shallow-water vessels will be used in support of this project, which is expected to last about five months.

The award of these new projects is largely the result of the high-quality, hard work of our field crews and an in-depth understanding of local culture, government regulations, well-managed dealings with Venezuela's labor unions, and the excellent relations maintained with our clients by Gebrig Schultz, Western's resident manager in Caracas," Rich Degner said.

On October 26, Richard White, Western Geophysical President, was honored with Hydrographic Society’s award for "Best First Paper" presented in September. Zinn and co-author P.J. V. Regato were honored with the award for their article entitled “Reliability Analysis in Marine Seismic Networks,” published in the April, 1995 edition of The Hydrographic Journal.

Zinn graduated from the University of California at Berkeley, where he studied surveying, engineering, and economics. After a stint in the Peace Corps in India, Zinn began his seismic job working for an oilfield services company in the Far East.

Western Atlas Oilfield Services management recently announced a major renovation and expansion project in the Western Atlas Center office building lobby and visitor parking area. The initial stages of the project are well underway.

Renovation includes an expanded lobby and gallery style entrance relocated to the east side of the building, plus a new covered parking area for customers and visitors. The project is targeted for completion by early 1997.

WESTERN ATLAS CENTRE

WESTERN PROFIE

WESTERN PROFIE
Noel Zinn Honored with Hydrographic Society Award

ZINN WINS "BEST FIRST PAPER" HONORS FOR MARINE ARTICLE

Western Geophysical Senior Navigation Scientist Noel Zinn was the recipient of The Hydrographic Society's award for "Best First Paper" presented in September. Zinn and co-author P.J.V. Regatte were honored with the award for their article entitled "Reliability Analysis in Marine Seismic Networks," published in the April, 1995 edition of The Hydrographic Journal.

Zinn graduated from the University of California at Berkeley, where he studied surveying, engineering, and econometrics. After a stint in the Peace Corps in India, Zinn began his seismic scientist in the Applied Technology department, Zinn is currently responsible for geodetic support, and the research and development of positioning techniques for Ocean-Bottom Cable. Zinn is a co-inventor of the patented, deepwater TotalNet positioning algorithm. He has published 10 papers on positioning topics, and has served as trustee of the U.S. Branch of The Hydrographic Society and as chairman of the Houston chapter. Zinn has been a post-graduate student at the University of Houston, studying geodesy, surveying adjustments, mathematics, and computer science.

Expanded Lobby and Visitor Parking

Western Atlas Center Office Building to Receive Face-Lift

Expanded Lobby and Visitor Parking

Western Atlas Center Office Building to Receive Face-Lift

Noel Zinn

 careen in Asia in 1970. Prior to joining Western in 1990, he was geodetic support manager for navigation contractor NCS International. As senior navigation
Western Atlas Employees Support Community Projects

**UNITED WAY AND HOUSTON FOOD BANK BENEFIT**

Recent events sponsored by Western Atlas Oilfield Services gave Houston employees the opportunity to participate in community projects. Through the efforts of Western Atlas employees taking part in the company’s recycling program, $5,000 was donated to the Houston Food Bank, enabling this organization to provide $100,000 in food and related services to those people in need in the Houston area.

The next event was an executive dunking booth held at Western Geophysical’s annual company picnic. Employee donations of over $250 were also presented to the Houston Food Bank, amounting to over $5,000 in food and services available to the community.

The Day of Caring, sponsored by the United Way of the Texas Gulf Coast, was a well-attended event, with over 100 Western Atlas employees taking part in community renovation projects. Exposed to typical summer weather, one group of employees scraped and painted four houses in Houston’s third ward area, while another group participated in painting and gardening at the Spring Branch area YWCA’s day care facility.

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**PARTY 390 CELEBRATES 10 YEARS IN NIGERIA**

Members of Nigeria Land Operations Party 390 are pictured celebrating their 10-year anniversary. Most of those pictured at the Port Harcourt dinner held in May are past or present members of the crew. Three long-term newcomers are (front row) Instrument Supervisor Joe Atkins (far left), Assistant Party Manager Charles Nwankwo (third from left), and Chief Surveyor Merle Elenga (far right). The plaque displayed lists the 20 3-D prospects that the crew has recorded over the past decade.

![United Way Day of Caring volunteers scrape and paint a home in Houston's third ward.](image)

**THE ‘HIGH-PROFILE’ AWARD GOES TO**

Congratulations to Crew 145 of the Western Spirit being selected winner of the “High Profile” award demonstrating outstanding efforts and achievements in the area of Health, Safety, and Environment (HSE). This issue of the Profile is dedicated to marine operations one crew and the next issue will recognize a crew from land operations.

We would like to recognize and thank all who sent in nominations for their time and effort. Nomination forms were received from crews 107, 144, 145, and 167. These nominations will be kept for consideration during the next marine operations review. At that time, the forms will be returned to the crews so that they may be updated to reflect further improvements and accomplishments prior to resubmission.
United Way Day of Caring volunteers scrape and paint a home in Houston's third ward.

Pictured from left are Western Atlas Director of Industry Relations Harry Hobbs, Vice President - Industrial Relations Jack Michael, Environmental Specialist Larisa Streeter, Houston Food Bank representatives Judy Freeman and Jackie Pontello, and Industrial Relations Manager Bob Mason.
PARTY 145 SAFETY TRAINING EFFORTS ARE RECOGNIZED

The Western Spirit, the last of Western Geophysical's super vessels to be constructed as the Ulstein shipyard in Norway, may be the newest member of Western's fleet, but she is complemented with a crew that has many years of experience. Since sailing out of Norway in October, 1993, the vessel has worked primarily in the Gulf of Mexico and offshore the Yucatan Peninsula off Mexico. Party 145 recently started work on Western's Ultra Survey project, with a four-boat surveying 8,000 square kilometers of the Gulf of Mexico, and is equipped with state-of-the-art recording and safety equipment.

Crewmember Safety Orientation

Recognizing the hazards of working offshore, the crew has been diligent and innovative in administering its HSE program. By involving all crewmembers, the program moves smoothly and incorporates new employees immediately into established onboard procedures. New crewmembers are given an orientation of the vessel and emergency procedures, which includes the issuance and appropriate instruction on all personal protective equipment (PPE), a description of the hazards of the vessel, and an explanation of the work they will perform. After the orientation, they are assigned an experienced coworker or "buddy" to work alongside them. In addition to guiding new employees in their new roles, this "buddy" system provides a second pair of eyes to ensure that the new employee is fully aware of all hazards at sea.

The crew's program has been developed by the crew and planned within the framework provided by our HSE office in Houston. Information is available to the crew in the form of signs posted throughout the vessel, as well as an extensive procedures manual. Written by the crew, this manual covers correct reporting procedures, ship's organization structure, deployment and retrieval procedures, the use of PPE, workout activities, and other aspects of life in a vessel onboard the Western Spirit. The crew also prepares Job Safety Analysis (JSA) modules, which are kept in respective work areas and are available for reference. A complete set of training videos is available and they are reviewed regularly in safety meetings. The entire crew meets at least once a month for a general safety meeting, and Safety Committee members also meet at least monthly to identify, evaluate, discuss, and rectify problems within the HSE management system.

HSE Training

Training is an important part of the Western Spirit's safety program, and crewmembers attend shore-side schools covering numerous aspects of working offshore. The crew is prepared for any emergency, and all crewmembers are trained in marine firefighting, First Aid and cardiopulmonary resuscitation (CPR), sea survival and helicopter escape, accident investigation, and safety management. Several HSE courses are given on the vessel, such as the Safety Training Observation Program (STOP) and crane operator courses. There are regularly scheduled drills to enforce this training on the ship, such as Man Overboard Boat and the cable workboat. Twice each month a fire drill is run with the aid of a smoke generator to simulate an emergency situation. The crewmembers' response and actions are discussed after each drill in an attempt to clarify any doubts and improve on response time. Other drills, such as abandonment ship and man overboard, involve manning lifeboats and checking survival equipment.

HSE Advisors and Audits

Onboard the Western Spirit, HSE is a fulltime job for every crewmember. Our safety program requires a focal point, as we do as two HSE advisors onboard at all times. The crew designates personnel to serve as HSE advisors, selecting one person from the ship's crew and one from the seismic crew. The captain and coordinator also play a big part in the program, as they are the role models and administrators of the program, working closely with the HSE advisors.

Another important part of the HSE program is audits. HSE audits are conducted onboard the Western Spirit, allowing the crew a chance to measure the success of the program and identify any problems. Audits are conducted once each month using crewmembers from different departments to cross-audit each other, making the audit as effective as possible.

Environmental Concern

The marine environment is of great importance to the crew. Trash is separated into burnable and non-burnable material. Burnable trash is disposed in the ship's incinerator, along with the ship's engines waste oil. The leftover ash and compacted nonburnable trash are stored onboard to be taken ashore for proper disposal. Due to the hazards of asbestos and batteries, these are separated and also taken ashore for proper disposal. Used-uoil cable oil is captured in a "dirty oil" tank, cleaned, and reused.

Although the Western Spirit is regulated by many governing bodies, the crew strives to go beyond these requirements to protect their coworkers and the oceans that they live on. They are rewarded for their efforts with safety awards and commendations, but the greatest award of all is the satisfaction of doing a good job and arriving home safely.
HSE Advisors and Audits

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Accumulated Time Without a Lost Time Incident

*Note: The HSE Milestones listed in this issue of the Profile and in future issues, we will present these "HSE Milestones" as a marker to recognize those crews achieving significant HSE milestones, e.g., accumulated manhours or years without a Lost Time Incident (LTI), and client letters of commendation and awards for outstanding HSE performance.

Client Letters of Commendation and Awards

Party 325: Colombia - 2 million manhours
Party 346: Ecuador - 2 million manhours
Party 347: Peru - 2 million manhours
Party 350: Bolivia - 1.5 million manhours
Party 390: Nigeria - 4 million manhours
Party 396: Nigeria - 2 million manhours
Party 402: El Paraíso, OK - 6 years
Party 403: Alice, TX - 3 years
Party 404: Beeville, TX - 2 years
Party 415: Egypt - 2 million manhours
Party 424: Englewood, CO - 6 months
Party 478: Camden, NJ - 2 years
Party 480: Argentina - 1 million manhours
Party 769: Brazil - 2.4 million manhours
Party 770: Algeria - 2.5 million manhours
Party 771: Niger - 2 million manhours
Party 778, 789, & 790: Oman combined - 8 million manhours

Client Letters of Commendation and Awards

Party 325 received a letter of HSE commendation from Repsol.
Party 390 received the 1999 Second Quarter Contractor's HSE Performance Assessment Award from Shell Petroleum Development Company of Nigeria, Ltd.

*Note: The HSE Milestones listed are for the reporting period January through September 1996.
HEALTH / SAFETY / ENVIRONMENT

MANAGEMENT DEMONSTRATES COMMITMENT TO SAFETY

Health/Safety/Environment (HSE) Training & Compliance Manager Vicki Huebler (front row, third from right) conducted two sessions in Executive Safety Management in Argentina in August. Participating were (front row, from left) Charles Hope (JAGUAR INTERNATIONAL), Roberto Asato (YPF), Secretary Silvia Quinn, Vicki Huebler, Daniel Campolongo (SIPETROL), and Jorge Quiroga (PLUSPETROL). (middle row, from left) Daniel Fontana (YPF), interpreters Agustín Costa and Guillermo Casas, Gustavo Weiss (TECPETROL), Sotiris Kapotas (TOTAL AUSTRAL), Pablo Fergusson (BRIDAS). Argentina Resident Manager Duncan Riley, and Q & P Advisor Hugo García; and (back row, from left) Senior Geophysical Analyst Steve Ellis, Roberto Dau (YPF), Party Manager Bill Fyda, Stefano Santoni (JAGUAR INTERNATIONAL), Party Manager Maria Carrizo, Eduardo Trinchera (YPF), Andrea Foglio (YPF), and Marco Neves (Hoffmann Equipment & Sound).

WESTERN GEOPHYSICAL NIGERIA CREW WINS CONTRACTOR SAFETY AWARD

Through its commitment to Western Geophysical's HSE program, Party 398 was presented with the first-place award in client contractor safety. From May through July, 1996, the crew experienced no recordable cases and no Lost-Time Incidents (LTIs). Congratulations go to the crew for its outstanding efforts and dedication to safety.
Western Geophysical's Nationwide Seismic Survey

KUWAIT
PLANNING FOR THE 21ST CENTURY

Reporter V. W. Vagt
Before the Iranian revolution people knew that the world suddenly became "Bolshevik" and the Middle East became "Bitter". The liberation era that is helping Kuwait toward the 21st century is one of the most important survey that can be achieved for our future.
Before the Iraqi invasion, not many people knew a lot about Kuwait. The summer of 1990 changed all that. The world suddenly focused on this part of the globe. Kuwait, as a country, and the Middle East, as a whole, became "Big News." In the post-liberation era, Western Geophysical is helping Kuwait plan ahead into the 21st century by conducting a seismic survey that covers the entire country.
Contemporary Kuwait has an area of 17,820 sq km, about the same size as the state of Hawaii, and is bordered by Saudi Arabia on the south and Iraq on the north and west. Pearl diving is a sport rather than a way of life, and prizes are awarded for the biggest bauble at an annual competition. Kuwait no longer is a transit point for goods that would travel on the Euphrates River or its modern cousin, the freeway.

Oil was discovered in 1938, but World War II curtailed development of the region. It was in 1946, fifty years ago, that Kuwait exported its first oil. Today, Kuwait boasts reserves that are estimated at 10 percent of global reserves, ranked third after Saudi Arabia and Iraq.

Kuwait’s economy is dominated by oil and the associated industries. An up-to-date infrastructure exists, including a network of super highways connecting all parts of the city and country. Downtown shopping malls jostle for space with the Kuwait Stock Exchange, banks, hotels, office buildings, and colorful souks (shops) of every description. The contrast between the super extravagant versus the street vendor is stark.

The population of 1.8 million is a kaleidoscopic mix of nations from the four corners of the world. The national dress of Kuwait mixes with fashions from Europe and the East. Men wearing the dishdasha, guutra, and aghall (robe and headdress), and women dressed in the classic Arab ‘abaya (cloak) are part of the scene. Elegant evening dress code is a must at social functions. The young people seem spirited and ready to show off for their peers. Wednesday evening is the night to play, culminating in “blue noise” (loud exhaust) from motor bikes along Gulf Street, and daring maneuvers of sports cars on the freeways.

Desert Storm

The invasion of Kuwait created hardships and tragedies. When it happened, the world held its breath. Would the Iraqis get away with it? The bets were even. Many times, small countries had been subjugated and no one had lifted a finger. Stories of horror emanated from Kuwait — stories of the destruction of a country and its wealth. In the political sphere, alliances were forged, splitting the Middle East into two camps, and disrupting commercial activities throughout the entire region.

Then came Desert Shield, and the decision to stop any further transgressions. Suddenly, everyone knew about Kuwait, where it was located, and what was happening. Inescapable, vivid images appeared on every television set, night and day. The entire world was concerned with Kuwait, the suffering of its people, and the destruction of its wealth.

Next came Desert Storm, beginning with the news flash: “Bomb on Baghdad!” Depending on one’s location at the time, an element of personal danger began to manifest itself. Dependents were at risk; evacuations were put into effect. Once more, the world stopped breathing, watching with trepidation the attack of the allied forces, and expecting the worst. It would be several days before a slight feeling of relief started to creep in —
Kuwait is one of the Middle Eastern countries that came to renewed prominence after World War II, mainly because of their immense wealth in hydrocarbons. Historic references date back as far as 300 B.C. when Alexander the Great's Admiral Nearchos sailed up the Arabian Gulf to the Euphrates River. Excavations on Failaka Island in Kuwait Bay produced evidence of a Greek trading colony that existed from the third to the first century B.C. Artifacts dating back to an even earlier age were found, showing human presence long before the arrival of the Greeks.

Contemporary with the Greek presence at Failaka was the presence of the Arab trading community of Gerga, opposite Bahrain on the mainland. Products such as frankincense and myrrh of Yemen, spices of the region, fabrics, and precious stones were transported through Gerga to Syria, or up the Euphrates to Iraq and beyond. Trade in the Gulf was thus an established fact of life, and the harbor of Kuwait and Bahrain were of vital importance.

During the 15th century, Persia and the Ottoman Empire influenced the politics of the region, and were dependent on the Arab Tribes for trade and transportation. A description of Kuwait dating back to the 18th century mentions the seaport, pearls, fishing, and a fleet of 800 boats. The ruler of the day was Sabah bin Jaber, an ancestor of the modern-day rulers of Kuwait. He is said to have encouraged pearling and the exploitation of Kuwait's position as a staging post and transit point between East India and Aleppo.

The State Mosque is reflected in Kuwait's Stock Exchange building.
a premonition of things to come. When it did happen, no one expected the rout that culminated in the 100 hours it took to free Kuwait. As the liberation gathered speed and succeeded, people of the world, and most of all, people of the Middle East, let out a giant sigh of relief. Then came the realization of the extent of destruction and its consequences, expressed in the burning of the nation’s resources, literally going up in smoke.

The world watched in awe as brave men from many nations put out the burning wells of Kuwait. The pessimists predicted doom-and-gloom for years to come. The optimists, including many oil industry insiders for whom nothing is too difficult and there is no problem that cannot be overcome, predicted that Kuwaiti economic life would return to normal in the short term. True to form, the recovery accelerated and it was not long before the Kuwait Oil Company revised a project that had been on the drawing board before the invasion — a seismic survey covering all of Kuwait.

NATIONWIDE SEISMIC SURVEY

During prequalification for the survey, a number of Western Geophysical personnel made the trip to Kuwait. Among the early birds were Jerry Crowell, Gerry Gilbert, and Ron Coomer. As the project moved toward the actual tender stage, Europe/Africa/Middle East (EAME) Land General Manager Lorne Morris, EAME Land Area Geophysicist Mike Fleming, Land Data Processing Manager Mirjana Putnikovic, and Resident Manager V.W. (Joe) Vagt joined the bid effort. Finally, Western Geophysical won the contract to perform both the seismic data acquisition and processing for the entire country.

When the intent to sign the contract was known, the assembly of the two crews began. Joe Vagt, Administrator Stephen Grosell, and Field Supervisor Bob Mitchell arranged to ship equipment out of Yemen, Ethiopia, and Mongolia. Equipment Supervisor Steve Hammond was at the receiving end in Jebel Ali, United Arab Emirates. Steve and his invaluable team of assistants modified and overhauled the various components, until the trailer and vehicle park of two seismic crews emerged. Visits to Jebel Ali to monitor progress were made by Jerry Crowell, Joe Vagt, Resident Manager Bruce Chulow, and Middle East Land Manager George Yapuncich. Senior Instrument Supervisor Mike Zilam took charge of the instrumentation, electronic components, installation of recording systems, and refurbishment of geophone strings.

Supervisor W.V. (Bill) Browne, Administrator Adrian Cranstoun, and Accountant Brett Lamensky joined Joe Vagt in Kuwait during the latter part of 1995. At first a temporary, and then a permanent office was established, providing room for the processing center as well as the management and supervisors. Field Supervisor Steve Farlow came onboard to take charge of the Jebel Ali effort to ship the first crew to Kuwait. Contractual issues were finalized in Kuwait, requiring visits by Senior Vice President Denby Auble and Lorne Morris. Meanwhile, support for the two seismic crews had to be established. Subcontracting of manpower, catering, and
uphole drilling was bid and awarded, and radio licenses and governmental approvals were obtained. During December, Party 777 was shipped from Jebel Ali and imported into Kuwait. A 13-deck car ferry was contracted for the job, allowing the rolling stock to be driven on and off with relative ease. A holding yard in Mangaf was rented to accommodate the vehicles and trailers prior to the first camp move into the concession. Chief Observer Tyler Peters, Chief Mechanic Richard White, and Technician Kenneth Briggs arrived in order to unload the equipment and move it to the yard. At the time, Senior Surveyor David Turton began the work to establish benchmarks and locate lines within the prospect. An explosives expert, Thor (Kojak) Johannsson, was brought in to accompany the surveyors on the journeys in order to develop a level of confidence in dealing with possible “nasties” left over from the Iraqi invasion.

"ANOTHER OPERATION DESERT STORM?"

In January, 1996, Party 777 began operations in Kuwait. During the staging period, the crew received visits from Western Geophysical President Richard White, EAME Senior Vice President Bill Schrom, and George

Western Geophysical staff in the Mangaf yard include (standing from left) Technician Kenneth Briggs, Vibrator Mechanic Raju Rahim, Chief Observer Tyler Peters, Chief Seismic Technician Richard White, and Supervisor W. Y. (Bill) Brown.

Kuwait oil rig
Yapuncich. One of their comments resulting from the quantity of trailers and vehicles assigned to the crew was, “Are we starting another Operation Desert Storm?”

Near the end of January and on schedule, Party 777 began to acquire data. Long hours and persistence were the key elements of the successful start of this project. Credit is due to all involved: Bill Browne, Stephen Farlow, Survey Supervisor Kevin Crozier, Party Manager Michael Ewart, Geophysicist John Quigley, Instrument Supervisor Nicholas Hickmott, Technician Kenneth Briggs, Chief Observer Tyler Peters, Observer Leo Mangum, Chief Vibrator Technician Scott MacDonald, Health/Safety/Environment Advisor Ronald Bally, Chief Mechanic Richard White, Surveyor Shane McDonald, Observer David Wilson, Mechanic Royston Crook, Surveyor Deane Skelton, Senior Surveyor David Turton, and Observer Mark Hammerton.

The subcontracted uphole drill unit arrived. Once cleared through customs, it was put on location to drill the first of a series of holes to a depth of 2,000 feet. Expertise for this type of drilling and logging is rare, and the complexity of the task increases exponentially with depth. Equipment Manager Darrell Clapsaddle was persuaded to come out of retirement. Darrell and Area Geophysicist Mike Fleming soon decided on the basic operational parameters.

THE SECOND CREW

Meanwhile, Party 778 was being readied in Jebel Ali. Final touches and last-minute changes were handled by Assistant Party Manager David Jones and Equipment Supervisor Steve Hammond. Another 13-deck car ferry was contracted to transport the equipment. Despite some anxiety along the way as the Eid holiday would close governmental facilities at a crucial time, the operation went smoothly. Surveyors counted the prospect and began their work before the arrival of the main body of the crew. Since parameters were already set, surveyors Shane McDonald, Michael Ritchie, and Peter Skelton had no difficulties setting up and going to work. The crew was staged and taken on location in record time, two months ahead of schedule.

The first part of the concession was located between a producing field and the coastline, in an area where there was a fair amount of action during the liberation of Kuwait. Close cooperation between the client’s safety department and the crew resulted in a successful completion of this very delicate phase of the operations.

Once more, long hours of work and persistence paid hefty dividends. Credit is due to all involved: Bill Browne, Stephen Farlow, Party Manager Paul West, John Quigley, Kevin Crozier, David Jones, Nicholas Hickmott, GPS Specialist David Harper, Vibrator Mechanic Jeffrey Smith, Chief Mechanic Charles Anding, Physician Dr. Wagih Basta, Chief Observer Gordon McLarnon, observers Paul Lavender and Daniel Maher, and Junior Observer Mohamed Said.
Both crews have acquired a reputation for their professionalism and innovation. The hours are long and the heat is intense. A local radio station uses the apt phrase “burning sand,” as the ambient temperatures routinely reach 50°C (122°F). Yet temperature and survey records are broken again and again. The processing center in Kuwait City is producing seismic sections in record time.

Supervisor Noreen McEwen and her staff of processors, Shabir Malik and Kandiah Thanabalasingham, work closely with client representatives to turn out a first-class product. Special projects are accomplished with speed and professionalism. One recent comment referred to a pilot 3-D study acquired by Party 777 and processed in Western’s Kuwait City Center as “The first 3-D survey completed in Kuwait.” Looking ahead, there is one upcoming project — acquisition of transition-zone data involving a combination of methods and equipment. The timing is set for 1996-97. It will be another test of equipment and stamina. We will only need to worry about the equipment. Stamina and persistence are our middle names.
The continual blurring between field acquisition and data processing has given rise to a new group charged with the mission of providing infield quality control (IFQC). The support and application for this IFQC function is multidepartmental, from the supply of field processing systems to system setup, technical support, and staffing.
at "24 & 7"

...
SETUP AND TECHNICAL SUPPORT

Party 505 Assistant Supervisor Don Keck is responsible for all HFQC hardware systems. Keck initiates hardware purchases, software installations, transportation and setup. He works closely with land operations personnel to determine system needs and works with land processing departments for staffing.

Setup and technical support for HFQC field systems is supplied by Party 4115's Applied Technology Land (ATL) group. ATL Manager Larry Walker has support staff members who are always ready for worldwide deployment and are invaluable in solving system and software problems.

Staffing of HFQC personnel is typically provided from the processing center where the field data will be processed. For North America, processing centers in Houston, Denver, Midland, Corpus Christi, and Oklahoma City have taken part in personnel development and deployment thus far. For Houston and Party 918 Land Data Processing, HFQC Coordinator Dusty Landen is responsible for training, scheduling, and ongoing support of HFQC "volunteers." Titled "volunteers," these employees are not formally dedicated to specific crews or to HFQC, and, depending on their level of interest, experience, and present work load, any interested and qualified employee has the opportunity to go onsite to work with HFQC.

HFQC personnel monitor seismic data recording for potential problems, quality control survey coordination for accuracy, and deliver the postprocessed seismic data to analysts in the processing center for
final processing. IFQC volunteers work closely with seismic observers and survey staff in quality control and daily preparation of seismic files for shipment. Working outside for several weeks with the process that their output be "humane," perfect is not everyone's forte, but for those who have confidence in their abilities and can commit to extended periods away from home, the rewards are increased self-reliance, expanded geophysical knowledge, and greater awareness in how Western Geophysical operates as a whole.

"NORTH TO ALASKA"

Since its inception in mid-1995, IFQC accomplished its most prominent task this past season at Alaska's Dead Horse Base Camp (DHBC). It is extremely challenging and demanding work for all who venture up to the frozen north. Extreme weather elements such as wind chills near -100°F, temperatures that can freeze skin in seconds, blinding snow storms, hypothermia, or the threat of polar bears can make life interesting if not calculated. Anyone who has stood under the stuffed polar bear specimen at Anchorage airport clearly understands the fact that no one has survived a polar bear attack.

For the IFQC staff, a 160-hour day to process 400 or more shot records is far from the comforts of home, especially when this may be their first exposure to real-time data acquisition going at "24 & 21". The acquisition season is dependent upon the amounts of snow cover and thickness of ice. The crew make the most of these few months by accelerating acquisition through their quality of work
Many thanks to all the crew support for the IFQC effort from Party 2111 Party Manager Tom Armworth on the Upstructure Gravity Drainage (UGD) survey, Party 794 Party Manager John Snyder on the Cobelle survey, and especially DHHG Party Manager Donovan Lammey for his diligent onsite support to our needs. Also, IFQC appreciates the unflagging help of ATL’s Senior Geophysical Analyst Ray Cook and Geophysicist Bill Halavonos. Ultimately, thanks to Party 918 Land Data Processing for the encouragement and support of its staff to venture up north away from home base. Party 918 geophysical technicians Melanie Blind and Lon Diericks, Senior Analyst Katie Coughlin, Analyst Jeff Walker, and Dusty Landry spent long winter weeks on the north slope this past season.

This teamwork of acquisition and processing via IFQC allows Western Geophysical to remain at the ready, ensuring quality acquisition realtime, processing every trace of recorded data, and delivering final seismic data delivery time.
### BROCHURES

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<td>Conscientious Seismic Exploration</td>
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<td>4D Seismically Enhanced Reservoir Monitoring*</td>
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Western Pacific 38 Winter 1996

Kloer, Marine Trai

![Gulf of Mexico](image)

** Gulf of Mexico **

Reported Hall Sanderson

Three Western Geophysical

Western Hemisphere Marine Streamer Fleet Maneuvers


The skills of nearly 70 people are efficiently coordinated to run a 24-hour-a-day operation on each vessel. While onboard, crewmembers are divided into two 12-hour shifts working six weeks on each boat, and then receiving a six-week break. While on break, crewmembers can often be found in the Houston office attending training classes to further enhance their job skills and the crew's productivity.

Operating out of Houston, crew supervision is provided by Party 116 party managers Rodney Atwood and J.D. Rack, Party 117 party managers Roger Perkins and Tom Nelson, Party 145 party managers Richard Joso and Tom Scoulas, Marine Supervisor Peter Van Buren, Marine Transport Supervisor Jeff Riles, Marine Trai

![Western Atlantic](image)

** Western Atlantic **

Party 116, the crew Western Atlantic, spent 1996 acquiring data Mississippi Canyon Valley Area in the Gulf of Mexico. Since the W conversion to the new 24A recording cable crew has begun work on the Ultra Survey™ for Western's new deepwater project. While on the W.

Onboard the W.

The seismic crew is managed by coordinator Foster, Scott Wells, Kent Plant, and Mitch son. Operating the W.

The recording system at
The seismic crew
During times of cable
back deck handling the cables
by captains Harland
Wilkerson, Rick
Walker, and Andy Singleton,
vessel in the best possible
Dodge and Richard Leleaux.
lems so efficiently that down­
and troubleshooting any prob­
acquires data 24 hours a day,
around the clock to keep the
the marine crew also works
condition, expertly supervised
Shawn McNair, keep sleeve
deployment, retrieval, or
crew can be found on the

Another important group
that the data acquired meets
Western's quality standards.
Navigator Riley Heron,
assisted by shift leaders Tom
Selby and Richard O'Brien,
and navigators: Sara Cleveland,
Robert Davis, Bree Watzack,
Fergus Heeps, Frank Gonzales
and Tim Perticone. QC geo­
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Navigator Riley Heron,
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Selby and Richard O'Brien,
Part of the Western Hercules crew is managed by coordinators Bill Williams, Tony Jensvold, and Ted Van Sickie, with the help of engineers and oilers Wayne Neilson, Jim Coleman, Leo Quintan, Michael Robertson, Jose Salazar, and Frank Sullivan, who are responsible for keeping the boat operational. The vessel falls to the hands of the marine under the supervision of Captains Rod Ward, Thomas Heald, and John Morrow.

Chief engineers Bill Blackwood and Donny Seymour, with the help of engineers and oilers Wayne Neilson, Jim Coleman, Leo Quintan, Michael Robertson, Jose Salazar, and Frank Sullivan, are responsible for keeping the boat operational. Able-bodied seamen Aubrey Basset, Ed Lopez, J.R. Roberts, Brian Miller, Brian Taylor, James Dowling, Rip Marshall, and Oddi Grigs perform so many different jobs on the vessel that it is difficult to specifically describe their responsibilities. Also part of the marine crew, cooks Nate Love, Ted Van Sickle, Kevin Anderson, and Agustin Bolanos have the challenging task of keeping the entire crew well-fed and happy. This reporter sends thanks for their hospitality and patience with my endless string of questions while I was onboard.

The Western Hercules seismic crew is managed by coordinators Bill Williams, Tony Jensvold, J.Q. Chandler, and Vin Simonitom. The marine crew is under the expert supervision of captains Rod Ward and John Morrow.

Helping to keep the vessel in top shape are mates Randy Blackwood, Kevin Daniels, Gary LeLeaux, and Richard Gordon. Seamen Willyrino Montero, Jesus Bambalan, Daniel Hidalgo, Anthony Echon, Ricardo Torres, and Rudolfio Silvestre can be found on the boat performing diverse duties.

Chief engineers Jim Keaton and Doug Erwin, with the help of Assistant Engineer Boyce Dorough, Second Engineer Angelito Figuracion, engineers and oilers Glen Daniels, Jack Green, Jeff Heath, Gaylord Calibuso, and Tom Fischbach, are responsible for keeping the boat operational. Due to their cooking skills, cooks Dominator Villatito, and Antenor Santons, along with galletry hand Ronaldo Lamec, are very popular crewmembers.

During production, most of the seismic crew can be found in the recording room. Expertly operating the recording equipment are observers Steve Bruce, Ernie Remer, Dan Spencer, and Mark Sullivan, with the assistance of junior observers Darin Dooley, Fernando Gallardo, Donovan Klingman, Kevin Williamson, Domingo Mateo, and Seamless Helper Jim Cuthbert.

Keeping the vessel on "the line" are navigators Kris White, Lee Jones, Stephen Gowen, and David Brader. Navigators receive assistance from navigator trainees Kim Jones, Roger Lemire, Kerri Masters, and James Wheatley, QC geophysicists Steve Clark and Dave Munderfeldt, assisted by geophysical trainees Jim Skinner and Bryan Harvey, ensure data quality.

Also located in the recording room of the Western Hercules are navigation processors Mark Matthews, John Herkenhoff, Sandy McNeill, Dave Tomlins, Scott Westerlund, and Kevin Pitts. Keeping all of the seismic equipment operational is the responsibility of technicians Esau Leija, Les Augustin, and Lane Simpfenderfer, and technician trainee Nathan Nishiki.

Navigators are navigation professionals who are responsible for keeping the vessel on "the line". They are also responsible for coordinating vessel operations and ensuring safety. The crew recently completed proprietary work in the Gulf of Mexico and is now acquiring data that is part of Western's Ultra Survey™ program.

On board the Western Spirit, the seismic crew is well-managed by coordinators Mike Biersong, Rob Edington, Curtis Sims, and Robert Steinhaus. Maintaining the vessel falls to the hands of the marine under the supervision of Captains Steve Herron, Hethig, Paul Mark, and Robert Woodruff.

Crew members who are working on the Western's Ultra Survey™ program include Michael Robertson, Hal Rice, and Ron Gregory, with the assistance of geophysical trainees Jim Cuthbert and R. Mark Matthews. The crew recently completed proprietary work in the Gulf of Mexico and is now acquiring data that is part of Western's Ultra Survey™ program.

The crew of the Party 145, also known as the Western Spirit, is made up of junior observers Darin Dooley, Fernando Gallardo, Donovan Klingman, Kevin Williamson, Domingo Mateo, and Seamless Helper Jim Cuthbert. Navigators receive assistance from navigator trainees Kim Jones, Roger Lemire, Kerri Masters, and James Wheatley, QC geophysicists Steve Clark and Dave Munderfeldt, assisted by geophysical trainees Jim Skinner and Bryan Harvey, to ensure data quality.

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The men and women of Chief engineers Clayton Michael and John Elkins, are responsible for keeping the boat the crews of the Western Spirit. The responsibility for "steering the line" belongs to Chief Navigator Kris Jensen, Senior Navigator Jose Garcia, and the navigation team of Carin Seem, Brent White, Martin Billand, Holly Carwell, Steve Heard, Richard Phelan, and Thomas Wolaver. Richaard Behal, Michael Cademartori, and Rezene Cuddon are the QC geophysicists onboard the vessel.

The responsibility for acquiring data is part of Western’s Ultra Survey™ program. Onboard the Western Spirit, the seismic crew is well-managed by coordinators Mike Biedong, Rob Edington, Curtis Sims, and Robert Steinhaus. Maintaining the vessel falls to capable hands of the marine crew, under the supervision of captains Steve Hermeecke, Robert Hefilig, Paul Mark, and Robert Woodruff.

Senior observer Thomas Gonzales and Brian Falchetti, along with observers Jeff Ebbs, Timothy Dausterhaus, Steve Reade, George Bojanos, and Ron Gregory operate the MSX-24A recording system. The responsibility for "steering the line" belongs to Chief Navigator Kris Jensen, Senior Navigator Jose Garcia, and the navigation team of Carin Seem, Brent White, Martin Billand, Holly Carwell, Steve Heard, Richard Phelan, and Thomas Wolaver. Richard Behal, Michael Cademartori, and Rezene Cuddon are the QC geophysicists onboard the vessel.

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The cable crew traverses another hill of the NPRA prospect with the recorder sitting in the background.

PARTY PICKINGS

Atlas, Western Hercules, and Western Spirit demonstrate hard work, dedication, and teamwork, and together make these three exemplary vessels in Western Geophysical’s fleet.

778 - Western Profile

The 1995-96 season for Party 711 began in mid-December when Party Manager Tom Ainsworth and a group of intrepid mechanics, including Roger Monson and Paul Bauer, arrived at Franklin Bluffs to prepare the camp for the approaching season. After clearing the camp of snow drifts that had formed during the preceding months and starting the generators that would provide the crew with electrical-powered heat and light, Party 711 was declared open for business.

The crew that arrived to begin the first program of the season, a 2-D prospect in the Sag River Delta, was a mixed group of seismic veterans and newbies anxious to begin their arctic experience. This mixture soon coalesced into a working unit that produced seismic data on a daily basis for the next four months. Upon completion of the 2-D project, Party 711 moved operation to the west of Prudhoe Bay, where they would begin a large 3-D prospect that would occupy the crew for the next two months. Conducting a 3-D seismic survey in a producing oil field posed many challenges. Obstacles encountered by survey, recording, and vibrator crews included a heavily traveled road system, a network of gas and oil-bearing pipelines connecting the well pads to various gathering facilities, and other buildings housing oil support businesses and personnel. Devising ways of going over, under, around, or through the various obstacles was taken in stride, with production maintaining a steady pace.

After finishing the 3-D program at the end of March, the crew moved 120 miles west across the Beaufort Sea ice to tackle its last project of the season, a 2-D survey in the National Petroleum Reserve of Alaska (NPRA). The NPRA project offered a change of scenery for Party 711. The infrastructure of the Prudhoe Bay oil field was now replaced by the precipitous cliffs of the Colville River, with its steep and abrupt banks, many channel and tributary streams, snow-filled ravines, and thickets of willow bushes. Undaunted by these new challenges, the crew’s seismic acquisition continued, with the program reaching completion in the last days of April. A four-day move brought Party 711 back to its off-season storage site at Franklin Bluffs, bringing an end to the 1995-96 season.

Alaska is said to be a land of extremes and nowhere in the state are those extremes more evident than in the Alaskan Arctic. During the 1995-96 season, Party 711 experienced extremes in terrain from the algal plain of the Sag River delta to the rugged cliffs of the Colville River, weather conditions ranging from the balmy 30° F days of spring to some winter days where temperatures with wind chill factored in reached 100° below zero; and variations in sunlight from no direct sun in December to the midnight sunsets of early May. Throughout the length of the season and the extremes to which the crew was subjected, there remained one constant — Party 711’s steadfast pursuit of Western Geophysical’s goals of safety, quality, and productivity.
PARTY PICKINGS

Reporter Paul West

If variety is the spice of life, Party 778 found themselves in the midst of one of the spicier stories of what lies ahead for the day with a speedy repair. The recording crew, under the watchful eye of Senior Observer Gordon "Juice" McCallum, has gone from strength to strength, tackling anything from open desert to having the live spread finished by Nick Hickmott, Vice President Denby Auble, General Manager Party Manager Paul Ainsworth, and Client Rep Mike D’Costa is continually busy looking over, under, and around the various sites, and shanty towns.

July is said to be a land of extremes and nowhere in the state are those extremes more evident than in the Alaskan Arctic. During the 1995-96 season, Party 711 experienced extremes to terrain from the alluvial plain of the Sag River delta to the rugged cliffs of the Colville River, weather conditions ranging from balmy 30°F days of spring to some winter days where temperatures with wind chill factored in reached 100° below zero; and variations in sunlight from no direct sun in December to the midnight sunsets of early May.

Throughout the length of the season and the extremes to which the crew was subjected, there remained one constant — Party 711’s steadfast pursuit of Western Geophysical’s goals of safety, quality, and productivity.

The recording crew, under the watchful eye of Senior Observer Gordon "Juice" McCallum, has gone from strength to strength, efficiently tackling anything from open desert to having the live spread laid consecutively over expanse of desert seismic survey. Each and every day brings new challenges in the shape of busy expressways, irrigation projects, high-security army installations, industrial estates, power stations, and even amusement parks.

Party Manager Paul West and Assistant Party Manager Dave Jones spend their days sorting out last-minute access problems, and planning for the "spicier" bits of line ahead. More often than not, they are away from the office where the crew’s administrator (and pigeon collector) Joseph Maher manages the inevitable piles of paperwork.

On occasion, Paul and Dave can be found directing combine harvesters through fields of ripe corn in an effort to clear the way for the front crew. The manager of one large, irrigated farm called "Speedy" Party 778 found themselves in a panic one day to say that the electronics controlling the irrigation system had broken down and that his crops would be dead by the end of the day. Speedy work by Nick Hickmott, Party 778’s instrument technician, saved the day with a speedy repair. That is one farm where we will always be welcome to shoot seismic.

The survey team comprised of Deane Skelton, Shane "Macca" MacDonald, John Barnes, Dave Harper, and Butch Booth, lead the way with ever more improbable stories of what lies ahead for the recording crew. A bare database at the beginning of the job has become stocked with a myriad of roads, minefield boundaries, factories, and even the Kuwaiti camel club, all painstakingly mapped and annotated. The surveyors have consistently laid a good foundation for the work that follows, and much of the success of Party 778 can be attributed to them.

PARTY PICKINGS

778 Kuwait

Party 778 receives Record Production award.

Staging yard in Mangaf, outside Kuwait City

The recording crew, under the watchful eye of Senior Observer Gordon "Juice" McCallum, has gone from strength to strength, efficiently tackling anything from open desert to having the live spread laid consecutively over expanse of desert seismic survey. Each and every day brings new challenges in the shape of busy expressways, irrigation projects, high-security army installations, industrial estates, power stations, and even amusement parks.

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mechanics Jeff Smith, Victor Arellano, and Suwan carefully manage their time for supervision and maintenance. Vibe pushing is a full-time job here with offset flags found missing almost as soon as they are planted in the shanty towns, and potential hazards all around. Detours can be fairly exciting, too, such as taking six vibe and a support Kenworth truck along rush-hour motorways that would make a New York cab driver nervous.

Back in camp, Zoren Kranjec, the crew’s seismologist (and part-time rock star), works late into the night, preparing data for the processing center in Kuwait City, in order to facilitate the next-day production of brute tacks for the client. Chief Mechanic Charlie Anding, with Senior Mechanic Jerry Bartlem and Mechanic Leslie Tabone, keeps the crew running smoothly. Each day has its challenges, such as six flat buggy tires in one day, burnt-out clutches, or even more catastrophic — removing "dimples" in the ice cubes caused by the crew’s new ice machine. If it were possible to work more than 24 hours a day, this crew would do it.

Keeping a watchful eye on all happenings with his truck full of signs, cone, flashing lights, and fluorescent flags, is Maurice Brakeman. As Health/Safety/Environment advisor, he dashes from the front crew to the back crew, via the vibrators, reaching each department through the steeple chase of hazards on every line. Maurice and Dr. Wagih Basta are to be commended that the crew has experienced no serious incidents.

Party 778 is one crew that is not dreaming of bright city lights. Like many city dwellers, the crewmembers dream of excursions out into the countryside, outside the city limits.

Vibrator Supervisor Lawrence Dowdy (center) receives his 35-year service award by N. America Land C: Manager Jim White (right) and West Texas Area Rick Drake. 

Senior Geophysical Analyst John McClammy (left) is congratulated by Houston Land and Special Projects Manager Pat Pack on 25 years of service.

Vice President - Hemisphere Mc Operations Dan (left) receives his year service pin from Geophysical Project Richard White.
Vice President of Data Processing Joe Chatoor (right) congratulates Manager of Data Processing/Quality Assurance Fred Merten on 25 years of service.

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Vice President - Western Hemisphere Marine/OBC Operations Danny Stegall (left) receives his 25-year service pin from Western Geophysical President Richard White.

Instrument Supervisor Joe Atkins (left) is presented with his 15-year service pin by Nigeria Manager of Operations Ray Thornton.

Far East/Australia/China Vice President Chuck Toles (left) presents Operations Manager Maurice Steel with his 15-year service award.

Observer Leo Mangum on 20 years of service, as Middle East - Land Area Manager George Yapunich looks on.

Observer Paul Lavender controls recording operations.

Assistant Mohammed, Shweb, and Aftab lay out line of GPS equipment.

Non-Profit Transactions

Non-Profit Transactions
NAMES IN THE NEWS

Bedford Data Processing Senior Supervisor David Todhunter (left) congratulates Senior Geophysical Analyst Phil Lloyd on his 20-year service anniversary.

Houston Land and Special Projects Manager Pat Peck (left) and ERIS Manager Patrick Ng (right) congratulate Senior Geophysical Harold Reavis on 25 years of service.

Computer Operator Manager Don Clark (left) presents Head Computer Operator Pat Call with his 15-year service award.

Vice President - Western Hemisphere Land Will Forrest (left) and South Texas Operations Manager Charlie Yanez (right) present Field Supervisor Marty Nurre with his 20-year anniversary award.

Vice President Administration/Contracts Bob Lowe presents Information Services Supervisor Diane Parker with her 15-year service award.

Vice President Administration/Contracts Bob Lowe and HSE Manager Jeff Howell present HSE Training/Compliance Manager Vicki Huebler with her 15-year service pin.

Applied Technology/Engineering Director Paul Mc (left) and Manager of Applied Technology/Engineering George Wood (right) congratulate Project Engineer Franklin on 20 years of service.

Vice President Administration/Contracts Bob Lowe presents Information Services Supervisor Diane Parker with her 15-year service award.

Instrument Supervisor David Summers (left) receives his 15-year service pin from Chad Resident Manager.
Senior Manager Joe Vagt (left) presents Supervisor Nicholas Hicknett with his 20-year award.

New Iberia Cable Shop Manager Dwaine celebrates his 25-year service anniversary with his... Western Hemisphere Marine Manager Larry Stegall.

Senior Analyst Vera Lansky receives her 15-year service pin from Houston Land and Special Projects Manager Pat Peck.

Instrument Supervisor David Summers (left) receives his 15-year service pin from Chad Resident Manager Russ Block.

Senior Accounts Assistant Cecilia Lin receives her 15-year service pin from Singapore Finance Manager Noel Raymond.

Manager of Office Services Teesta Stevias (second from left) congratulates (from left) Senior Clerk Glory Thomas on 15 years, Lead Office Services Clerk Ronda Anderson on 10 years, and Clerk Chantell Raphael on five years of service.

Manager of Computer Operations Gale Gortemiller (left) and Shift Supervisor Juan Flores (right) present Computer Operator Jerry Blanton with his 15-year service award.
Group Leader and Senior Database Analyst Dhiraj Kavia (left) receives his 15-year service award from E&P Services EAME Senior Manager Malcolm Francis.

Former Spec Data Sales Supervisor Shirley Stinson (back) presents 5-year service pins to Geophysical Technician Savannah Joseph (right) and Printing Technician Pauline Booth.

Junior Analyst Mark Snyder (left) receives congratulations on 15 years of service from Houston Land and Special Projects Manager Pat Peck.

Security Supervisor Luis Garcia (center) receives his 15-year service award from Vice President Administration/Contracts Bob Lewis (left) and Telecommunications and Security Manager Mike Peck.

Shipping Clerk/Typist June Lyons receives her 15-year service pin from London Area Manager of Finance & Administration Jerry Dresser.

Former Spec Data Sales Supervisor Shirley Stinson (back) presents 5-year service pins to Geophysical Technician Savannah Joseph (right) and Printing Technician Pauline Booth.

West Texas Area Manager Rick Drake (right) congratulates Field Supervisor David Turner on 15 years of service.

Spec Data Sales General Manager Joe Walker (right) and Western Hemisphere Spec Data Sales Manager Jerry Peterson (left) present Senior Marketing Representative Dan Scott with his 15-year service pin.

Nigeria Manager of Operations Ray Thornton (front) presents Assistant Party Manager Charles Nwankwo with his 10-year service award.
Area Manager Rick Drake (right) congratulates Supervisor David Turner on 15 years of service.

Sales General Manager Joe Walker (right) and Hemisphere Spec Data Sales Manager Jerry Jeff present Senior Marketing Representative June Lyons with his 15-year service pin.

Seismic Processing System Development Manager Andy Kushner (far left) and Section Leader Debra Dinkelhammer (right) congratulate Programmer Karen Goodrich and Senior Programmer Les Engelbrecht on five years, and Programmer Rory MacDonald on 15 years of service.

Argentina Processing Manager Gustavo Carstens (left) and Processing Supervisor John Mathewson present Senior Analyst Elizabeth Rosso with her 10-year service award.

Nigeria Manager of Operations Ray Thornton (right) presents Assistant Party Manager Charles Nwankwo with his 10-year service award.

Secretary Darcy Gray is presented her 10-year service pin by West Texas Area Manager Rick Drake.
Chief Supervisor Merle Elenga (left) receives his 10-year service award from Nigeria Manager of Operations Ray Thornton.

Communications Coordinator Pramod Kulkarni (center) celebrates 15 years of service with Technical Communications Manager Rod Hotz and Corporate Communications Manager Rhonda Boone.

E&P Reservoir Studies Supervisor Roger Murray (right) receives his 15-year service pin from General Manager John Sherwood.

E&P Services EAME Senior Manager Malcolm Francis congratulates Secretary June Simpson on 15 years of service.

**NAMES IN THE NEWS**

Chief Observer Bruce Guzala (left) accepts congratulations on 15 years of service from Nigeria Field Supervisor Laurie Williams.

In-coming Supervisor Kirk Johnson (center) congratulates Geophysical Analyst Mila Musico and Data Processing Supervisor David Alexander on 15 years of service.

**THEY SERVE**

Service Anniversaries — March, April, May, June, July, August

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

42 Years

- Woelfel, Wilbert O.

41 Years

- Smith, Chester D.

40 Years

- Chao, Jin-Sung

39 Years

- Cooner, Ronnie R.

38 Years

- Cooner, Ronnie R.

37 Years

- Baker, Christopher G.

36 Years

- Bercoll, Brian A.

35 Years

- Chepwin, Robert A.

34 Years

- Kubik, James J.

33 Years

- Bennett, Gary M.

32 Years

- Bivin, David D.

31 Years

- Bischoff, David W.

30 Years

- Bickham, Ronnie N.

29 Years

- Baker, Christopher G.

28 Years

- Bickham, Ronnie N.

27 Years

- Baker, Christopher G.

26 Years

- Baker, Christopher G.

25 Years

- Baker, Christopher G.

24 Years

- Baker, Christopher G.

23 Years

- Baker, Christopher G.

22 Years

- Baker, Christopher G.

21 Years

- Baker, Christopher G.

20 Years

- Baker, Christopher G.
THEY SERVE

Service Anniversaries — March, April, May, June, July, August

If you have any questions regarding your service date, please call payroll at (713) 973-5803 to update your records.

42 Years
Woelfel, Wilbert O.

41 Years
Smith, Chester D.

39 Years
Pichiani, Ugo

38 Years
Conter, Ronnie R.
Dowdy, Lawrence
Menon, Paul Arthur

34 Years
Kohl, James J.

32 Years
Bennett, Gary M.
Chambers, R. E.
Jones, Robert J.
McComb, Richard M.
Reyna, Armando

31 Years
Bowen, David D.
Goodman, David W.
Kapoor, Surrinder
Morris, Lorne G.
Roberts, Richard L.

30 Years
Braunm, Oral F.
Doney, Richard W.
*Karman, Makave Lepet, Austin A.
Milne, Geoffrey F.
Patt, Mary C.
*Peters, Howard H.
Quinn, Colin

29 Years
*Cooper, Leonard F.
*Deborah, David P.
Hines, Delores G.
Kadut, Anthony J.
Massey, Derek L.
Moeller, Lauren J.
Smith, Tony
Swanson, Barbara N.
Wright, Martin

38 Years
Bickham, Ronnie N.
Chunard, Winson J.
Dillman, Angelo Evans
John T.
*Ferrari, Bob
*Heller, Paul John
May, Thomas A.
Neil, Doug
*Pichiani, Roberto L.
Stringer, J. Haynie

37 Years
*Baker, Christopher G.
*Berglund, Wesley A.
*Brandt, George A.
*Chapman, Douglas L.
*Cheyney, Robert A.
*Dalgliesh, Gerald C.
*Darwish Ali, Roshan
*Dingwall, Kenneth A.
*Elden, Mark C.
*Garrett, Richard D.
*Godsch, Robert Gregg Hall
*Hendry, rvett, David R.
*Pence, Kevin
*Prickett, Robert
Russell, John R.
Spuckman, James

36 Years
*Ayres, Mike B.
*Berr, Frederich J.
*Cheung, James H.
*Chua, Kim Siang
*Gan, Huat S.
*Gillespie, Maxwell
*Hornsby, Peter
*Johnson, Ori A.
*Mccarthy, John
*Meyer, Lorena F.
*Silva, Salvador F.
*Ward, William R.
*Wei, Chia C.

35 Years
*Bibby, Peter J.
*Brown, David
*Jaworski, Rudy
*Kaul, Kenneth K.
*McLain, Dewey A.
*Reavis, Harold D.
*Rodriguez, Hector T.
*Schade, Roger David
*Scott, Grenville T.
*Stegall, James D.
*Taylor, Harper K.

*Winfield, Jr., Carl H.
*Years
Bunnett, James W.
Boler, Joe
Boon, Steven
Bou, Joan
*Fletcher, Keith D.
*Flaherty, Derek
*Gonvald, Kurt L.
*Hamilton, Graham
*Hickson, Paul N.
*Hills, James, Gavin
*Humbert, Hugh L.
*Humphreys, Sally
*Jenschke, Robert V.
*Kirwin, Barbara F.
*Lenta, Norman Eugene
*Martinez, Robert Bernard
*McAllan, John R.
*Nuttall, Peter
*Smithers, Jim
*Stone, Dillard F.
*Stockham, David L.
*Tomkinson, John Swan
*Wilson, Larry L.
*Young, Novell L.

22 Years
Akeem, Lowell T.
Behrens, William H.
*Bell, Elizabeth E.
*Bowers, William S.
*Browne, Rhonda G.
*Brewe, Martin S.
*Bryant, Bob W. M.
* Clarke, Miles G.
* Curtis, Richard F.
*Echols, Matthew
*Finlay, Lyndon C.
*Hagen, Teresa V.
*Harter, Linda A.
*Johnson, Bruce A.
*Kashbee, Andrew M.
*Lara, Eduardo
*Lawhorne, Norman W.

*Lowes, Robert E.
*Morton, Rosemarie A.
*McComod, Steven S.
*Nevins, Virginia M.
*Paquette, Claude R.
*Phillips, Bertha M.
*Pone, Ron R.
*Prine, Keith E.
*Sambors, Ernest R.
*Sparre, Mark R.
*Stafford, Lory G.
*Starvis, Terri
*Temp, Terry E.
*Threaves, William J.
*Villagallo, Nestor A.
*Warr, Christine A.
*Wise, Michael J.
*Yamaki, Richard C.
*Young, Joseph R.

21 Years
*Bariger, Jeffrey David
*Bauer, Brent Russell
*Brown, Paul
*Carr, Kenneth L.
*DaVallner, Sand S.
*Engel, Nanci C.
*Flynn, Maurice
*Ganis, Adam M.
*Halbe, David C.
*Jackson, Frances R.
*Kavia, Dhiraj
*Lan, H. Robert
*Lewis, David J.
*Marley, Bernard
*Newberry, Linda E.
*O'Keefe, Raul H.
*Read, Derek
*Rollins, Ron
*Taylor, Brenda J.
*Wan, Violet

20 Years
*Baer, Clayton J.
*Billips, David Randolph
*Browne, William V.
*Bryant, Virgil M.
*Franklin, Jr., John B.
*Geoff, Mike Charles
*Green, Russell A.
*Gosnell, Paul
*Goudy, Stephen
*Greenwood, Paul Marshall
*Hickmott, Nicholas E.
*Holme, Roger G.
*Johansen, Beryl L.
*Lloyd, Phil
*McFarland, Jr., Richard A.
*Messi, Shadhi
*Moess, Cypress
*Muns, Charles
*Nevins, Martin Henry
*Wade, Gordon
Pages: J.
P.
C.
A.
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A.

J. Allen
W. Scott
J. John
S. Werner
W. Stephen
J. Jerilyn L.
N. Nathan
T. A.
W. Ken T.
A. Yuki

M. Allen
W. Scott
J. John
S. Werner
W. Stephen
J. Jerilyn L.
N. Nathan
T. A.
W. Ken T.
A. Yuki

1996

Years