

Annual Report

1964

SCHLUMBERGER



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Directors

H. G. DOLL
Chairman of the Board

ROBERT G. COWAN
Chairman, National Newark & Essex Bank
Newark, New Jersey

W. J. GILLINGHAM
Vice President
President, Schlumberger Well Surveying Corp.
Houston, Texas

J. C. HUTCHESON, III
Partner, Baker, Botts, Shepherd & Coates
Houston, Texas

PAUL A. LEPERCQ*
President, Istel, Lepercq & Co., Inc.
New York, New York

CLINTON S. LUTKINS
Senior Partner, R. W. Pressprich & Co.
New York, New York

AMEDEE MARATIER
President, Forages et Exploitations Pétrolières
Paris, France

JOHN DE MENIL*
Chairman of the Executive Committee

CHARLES C. PARLIN
Partner, Shearman & Sterling
New York, New York

JEAN RIBOUD*
Executive Vice President
President, Schlumberger Overseas and
Societe de Prospection Electrique
Schlumberger
Paris, France

MAURICE SCHLUMBERGER
Director Emeritus

PIERRE SCHLUMBERGER*
President and Chief Executive

RENE SEYDOUX
Chairman, Schlumberger Overseas and
Societe de Prospection Electrique
Schlumberger
Paris, France

AME VENNEMA*
Executive Vice President

E. M. VOORHEES
Director and Member Executive and
Finance Committees, United States Steel
Corporation
New York, New York

*Member Executive Committee

Officers

H. G. DOLL
Chairman of the Board

PIERRE SCHLUMBERGER
President and Chief Executive

JOHN DE MENIL
Chairman of the Executive Committee

JEAN RIBOUD
Executive Vice President

AME VENNEMA
Executive Vice President

W. J. GILLINGHAM
Vice President

EVERETT F. STRATTON
Vice President

EDWIN N. WEST
Secretary and General Counsel

J. E. RHODES
Controller

WILLIAM NILES
Treasurer

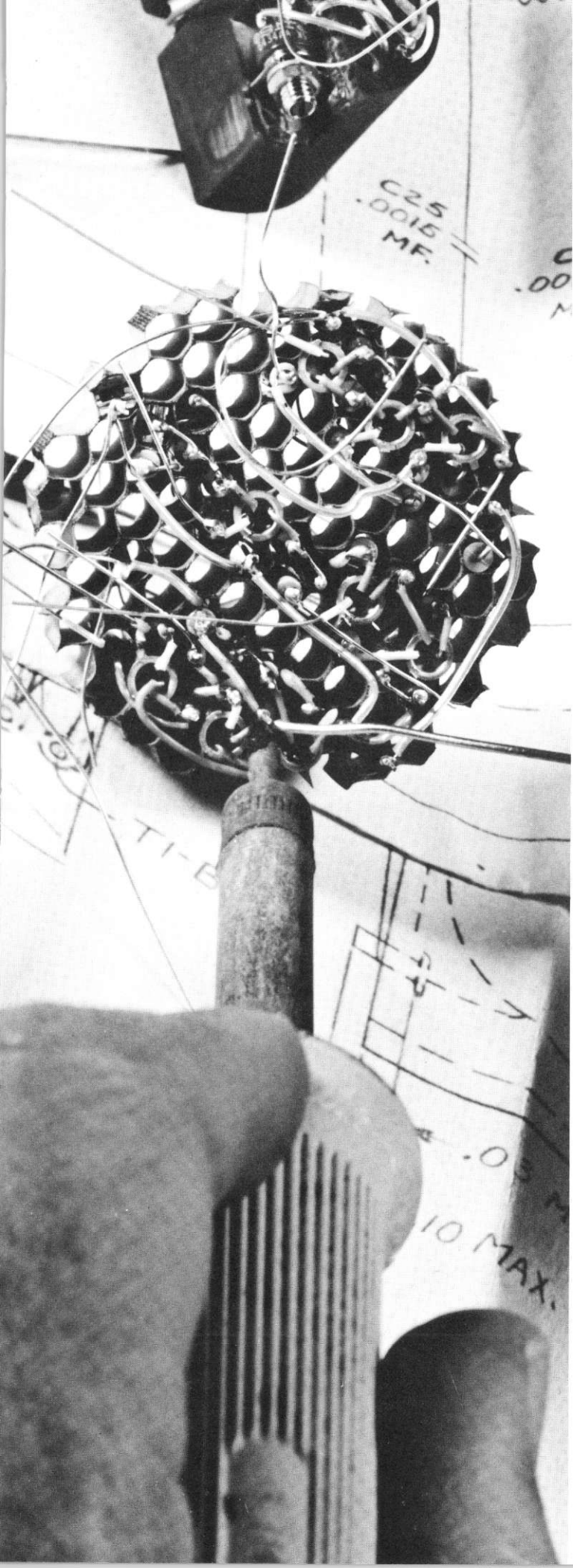
H. L. PLATTER
Assistant Secretary

Stock Transfer Offices

First National City Bank,
New York
Bank of the Southwest, Houston, Texas

Registrars

Morgan Guaranty Trust
Company, New York
First City National Bank, Houston, Texas



Results In Brief

	1964	1963
Operating revenues	\$302,367,000	\$302,967,000
Operating income	43,111,000	40,822,000
Taxes on income	20,283,000	19,763,000
Net income	24,606,000	21,831,000
Net income per share.....	\$4.78	\$4.09

Left:

New packaging techniques, such as this shock-resistant module, insure the reliability of Schlumberger logging equipment.

To the Shareholders

Operating revenues of \$302,367,000 for 1964 were approximately the same as the operating revenues of \$302,967,000 for 1963. Revenue from oil field services increased some \$6 million but this was offset by lower sales in the electronics and instrumentation field due primarily to a decline in sales to United States government agencies.

Net income increased to \$24,606,000 for 1964 from \$21,831,000 for the preceding year. This increase is due in part to the fact that the decreased revenues from sales of electronic instruments, principally to the government, were offset by increased sales resulting from new and improved techniques developed by the company for the oil field service operations. In addition, earnings benefited from the reduction in the United States corporate tax rate and operating economies, mostly in the electronic part of the business.

An increase of some 40 percent in oil company offshore operations has been forecast for 1965, primarily for the Gulf of Mexico but also in Europe, Africa, and the Mid-East. Since the problems involved in offshore operations are complex, there is a high demand for a full complement of Schlumberger services. Earnings

for the coming year will improve if the forecasts are reasonably accurate.

Our position in the electronic industry has been consolidated by the following actions:

- The name of our subsidiary, Daystrom, Inc., was changed to Weston Instruments, Inc. and the property in Murray Hill, New Jersey, formerly corporate headquarters of Daystrom, was sold. The management of Weston is now located at the Weston plant in Newark, New Jersey.
- The business and assets of Boonshaft and Fuchs of Hatboro, Pennsylvania, and Rotek Instruments of Watertown, Massachusetts, were acquired to strengthen and extend the Weston product line.
- Three French instrument companies were acquired by the Societe d'Instrumentation Schlumberger group operating in the Common Market.

A tract of land in Orange County, California, is being sold over a period of several years at a total gain of \$2.8 million. The entry for other income on the Statement of Income includes \$400,000 of the gain in 1964 and will include \$800,000 per year through 1967. Due to a prior offsetting capital loss, there should

be no federal income tax on the gain.

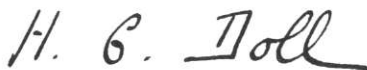
A Schlumberger Limited Office and Staff have been established in Paris, France, to strengthen further management control and coordination of the oil field service and electronic business in Europe and the Eastern Hemisphere generally.

The resignation of John B. Montgomery as President of Weston Instruments, Inc. and Vice President and Director of Schlumberger Limited has been accepted. Walter Slocum was elected to succeed Mr. Montgomery as President of Weston. Carl G. Neureuther, Vice President-Control and Finance of Schlumberger Limited, resigned in early 1965 after a period of 12 years of valuable service with the company.

The potential of the electronics and instrumentation business is widely recog-

nized. The potential growth of the oil business is less widely understood. World demand for oil was about 28,000,000 barrels per day in 1964. If demand increases at the rate established in the preceding 10 years — and these do not appear to be extraordinary years — it will double in the next 10 years. To meet this demand calls for at least corresponding increases in drilling, particularly if proven reserves are to be kept in proportion to demand. In the past, Schlumberger revenues have grown more rapidly than drilling activity due to the introduction of new and better services. As oil gets harder to find, Schlumberger services have in the past been and should in the future be of growing importance to the oil industry. We believe in the strong growth of the oil field service as well as the electronics part of our business.

Houston, Texas
March 5, 1965



H. G. DOLL
Chairman of the Board



P. SCHLUMBERGER
President



Thirty-eight years ago, Schlumberger made the first electrical measurements in an oil well. This was a major advance in the art of searching for oil. Since that time Schlumberger and the oil industry have grown throughout the world side by side. Schlumberger has invented and developed many kinds of instruments — electrical, nuclear, sonic, and mechanical — and telemetric systems to provide services used by the oil industry.

From its scientific role in the oil industry, Schlumberger Limited has expanded into other activities in related fields which demand a high order of knowledge in the physical sciences. Schlumberger now works in the design and manufacture of measuring instruments, systems, and products for commercial and industrial fields and for the missile and aerospace programs.

Schlumberger employs 17,500 persons; among these are 2,000 graduate engineers and scientists. Schlumberger is now one of the world's larger private employers of scientifically trained personnel.



Above:
Assembling equipment to service a high-pressure well.

Schlumberger And The Oil Industry

The oil business is a group of related but different autonomous industries: refining, transportation, marketing, exploration, and production. The first three are understood by most consumers. The exploration and production industries account for over 50 percent of the oil industry's annual capital spending but are not as well understood by the average consumer. It is in this area that Schlumberger's various petroleum-related services and products are employed.

According to prevailing theory, oil and gas developed from the organic residue of plant and animal life. Under favorable geochemical and geological conditions, hydrocarbons were formed from the residue and concentrated in porous rocks such as sandstone or limestone. These concentrations are the oil fields of today and tomorrow. The purpose of the exploration branch of the oil industry is to locate these oil and gas deposits. Geophysical and geological research develop indications of favorable subsurface structures where oil or gas might be found but nothing short of drilling a well will tell for sure if oil is there. Even then, it takes more than drilling a hole through formations containing hydrocarbons. The oil company geologist cannot see the formations penetrated by the drill and in most cases there is no evidence at the surface that a potentially productive formation has been penetrated. Indirect methods must be used to locate the zones containing hydrocarbons and — because the cost of preparing a well for production is large — the customer must find out in advance whether oil can be produced in commercial quantities.

It is here — in the location, evaluation, and completion of wells in oil-bearing formations penetrated by the drill

— that Schlumberger petroleum-related services fit into the picture.

Logging the Well

Schlumberger invented the first method for making indirect measurements in a well — the electric log. The measurement was taken by lowering an instrument into the well and passing an electrical current through the rock formation at a given depth. The resistance to the passage of electrical current then gave an indication of the nature of the formation. For example, if the formation contains salt water, the conductivity is high and electrical current passes easily. Oil, on the contrary, has a low conductivity.

The modern Schlumberger measuring instruments, generally called down-hole tools, are lowered into the well at the end of armored electrical cable which can be up to 25,000 feet long. Signals from the down-hole tools are transmitted to the surface through the cable to a Schlumberger laboratory unit where they are recorded optically on a strip of photographic film or digitally on a magnetic tape for computer analysis. The film is developed in a portable darkroom on the spot. The measurements taken appear in the form of a continuous graph or "log." The log is a record, scaled to depth, of formation characteristics such as electrical conductivity, spontaneous potential, nuclear properties, sound travel time, temperature, and others.

From these logs the Schlumberger engineer and the customer deduce rock and formation fluid properties. Several different logs usually are needed to provide enough information for a complete analysis.

Right:

Wherever the drill goes, Schlumberger goes . . . in this case through the streets of Tripoli to a well in the Libyan desert.

The down-hole instruments used in modern well logging are complex. A sonic or an induction logging cartridge, for example, contains several hundred electric and electronic components. In addition, the components must be packaged to fit into a pressure housing having an inside diameter of only two and three-quarters inches since the tools must be small enough to move freely in the well bore. The tools must perform reliably in down-hole temperatures of 400° F., or more, and withstand pressures as high as 20,000 pounds per square inch. Furthermore, they must be rugged enough to withstand the rough handling and severe usage that is common in normal operations.

To provide Schlumberger services — they are available anywhere in the free world — Schlumberger maintains 300 op-

erating centers located in 50 countries. Crews, led by graduate engineers, are ready on short notice 24 hours a day whenever called upon by oil companies. For wells drilled on land, a crew will drive one of the 500 truck-mounted laboratories to the well location. If the well is drilled offshore, one of 200 special skid-mounted laboratory units, already installed on the offshore platform, will be used. All of these mobile laboratories are equipped with surface control and recording instruments and equipment.

Research and engineering departments located in Houston, Texas; Ridgefield, Connecticut; and Paris, France; have developed Schlumberger services and their associated instrumentation and are continually searching for new and more effective methods. These centers employ about 200 engineers and scientists. The



well-logging equipment is manufactured in modern, company-owned plants located in Houston and Paris.

Testing the Well

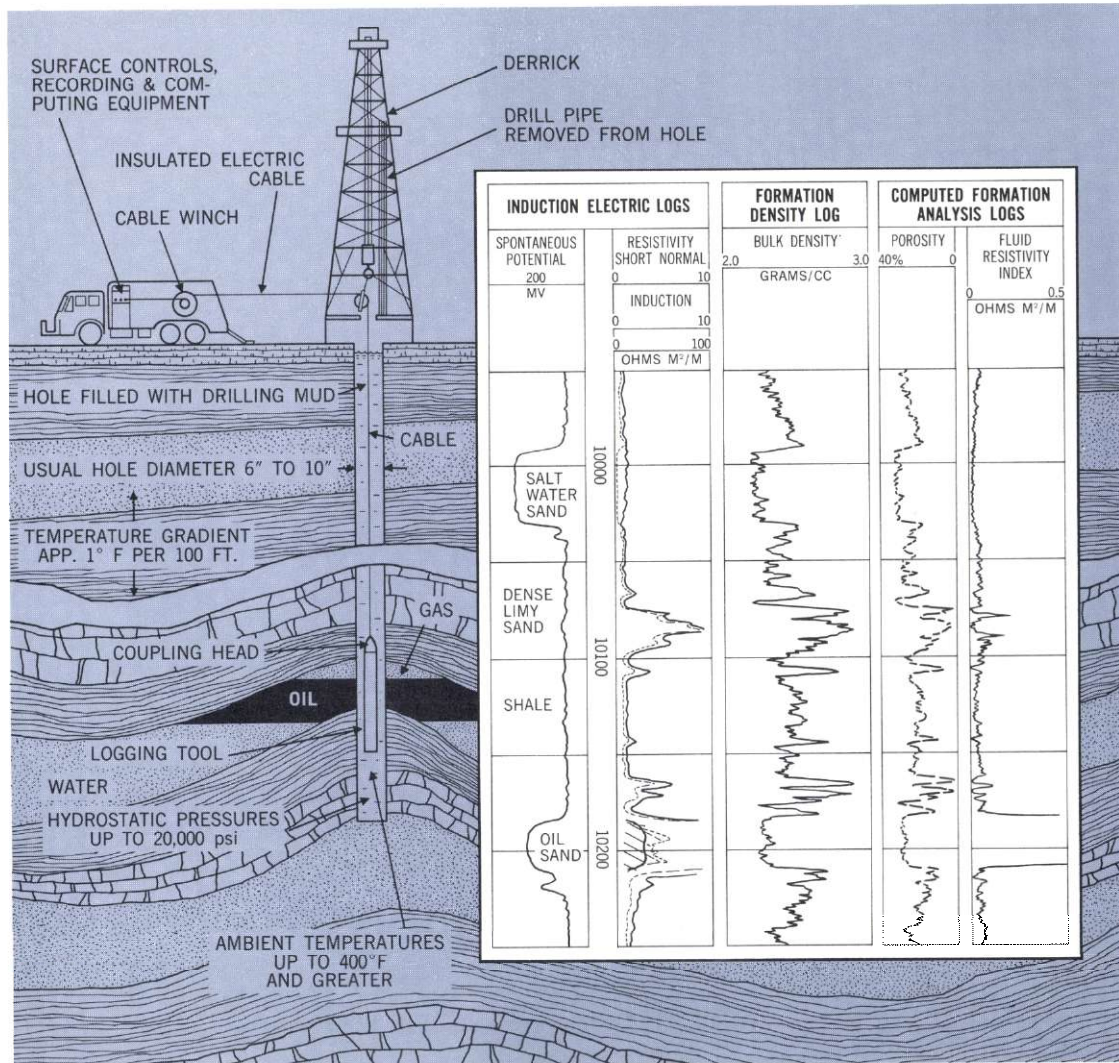
Preparing a well for commercial production — “completing the well” — is expensive. Even though Schlumberger well logging services have indicated the presence of hydrocarbons, there may be no guarantee that the well will produce profitably. Thus, the oil company often requires a “drill stem test,” a method of making a temporary completion to determine if the well will produce at a commercially economical rate without going to the much greater expense of a perma-

nent completion. This is the basic work of a Schlumberger company, Johnston Testers, which originated and pioneered drill stem testing services.

The drill stem test is made by lowering a series of rubber packers and mechanical equipment into the well at the end of a drill pipe. The zone to be tested is isolated from others by the packers, and formation fluids are allowed to flow into the drill pipe. Instruments in the testing tool measure flow rate, pressure, and other reservoir data. The oil company can

Below:

With modern logs productive formations are more easily and more accurately defined.



then decide whether or not to complete the well.

Completing the Well

When it has been established that the well can produce oil or gas in commercial quantity, the oil company will make a permanent completion for production. A protective steel tube, or casing, is lowered into the hole and cemented into place by injecting a cement "slurry" between the casing and the wall of the hole. This service, called "well cementing," is one of the activities of Dowell Schlumberger, a company owned in equal partnership with Dow Chemical Company. Dowell Schlumberger operates in Europe, Africa, Asia, and Latin America.

After the casing has been set and cemented in place, it is necessary to make entry holes through the casing and cement into the formation for production from the oil or gas zone. Schlumberger has a complete and extensive line of services to position accurately and fire guns which perforate the casing and cement with shaped charges or steel projectiles.

Occasionally, oil or gas bearing formations must be stimulated to obtain production. This can be done by "fracturing" the formation by the application of hydraulic pressure to create channels for oil to flow into the well; or the formation may be treated chemically to dissolve particles hampering oil flow. These services are among those provided by Dowell Schlumberger.

Producing the Well

After a well has been completed and is producing oil or gas it will from time to time require remedial work to maintain efficient production. Many of the completion services offered by Schlumberger are used in these workover operations. A new generation of production logging services and equipment has been recently developed and is now in use. These serv-

ices define problems in producing wells and thus indicate the correct remedial measures to insure optimum well performance. They have a major application in secondary recovery projects, pressure maintenance programs, and in wells with declining production.

Oil Outlook

Although there now exists excess producing capacity, oil companies must continue their efforts to increase the available supply in order to satisfy the world's demand for oil and its products. Oil and gas as fuel and as prime raw materials for the chemical industry are among the more important ingredients for improved standards of living. The free world is expected to increase its need for oil and gas by more than 6 percent per year compounded annually for years to come. Consumption of oil quadrupled in the past 20 years and is expected to increase by 1970 to nearly 40 million barrels per day from the present approximately 28 million barrels per day.

It has been estimated that during the next 20 years, the free world requirement for crude oil will exceed 300 billion barrels. This enormous demand is placed in perspective when it is realized that it is more than twice the amount produced in the free world during the last 100 years. At the end of 1964, the free world reserve was estimated at only about 310 billion barrels.

Oil's "greatest challenge" will be to supply this requirement and to maintain necessary reserve ratios. It has to be done through an expanding exploration and development well drilling program. The petroleum industry, consequently, has many years of growing activity ahead.

The consistent development of better instruments, services and products should enable the Schlumberger oil field service companies to grow at a rate at least as fast as, if not faster than, the industry they serve.

Schlumberger And Electronics

Extensive experience in electrical instrumentation and telemetry in connection with electrical well-logging activities led Schlumberger to establish an electro-mechanical section in 1941 to conduct research and development for the military establishments. This section, now Electro-Mechanical Research of Sarasota, Florida, has become an important Schlumberger company. It is a leader in the development and manufacture of telemetry and data processing instrumentation for missile and space programs.

Schlumberger well-logging companies and Electro-Mechanical Research have invested more than \$100 million in instrumentation and telemetry research and engineering programs during the last 20 years. These programs have provided Schlumberger with the knowledge and capabilities for further expansion and diversification in general fields of measurement, data acquisition and transmission, and data processing. Thus, during the past four years, Schlumberger Limited has been expanding gradually in these fields. Several firms have been acquired. The program is a continuing one.

The present electronic companies are:

- Electro-Mechanical Research, Inc. with affiliates and divisions
- Weston Instruments, Inc. with affiliates and divisions
- Heath Company
- Solartron Electronic Group Limited
- Societe d'Instrumentation Schlumberger

Right:

A high vacuum vapor deposition furnace used in EMR's microcircuit facility.





Review of Operations

Oilfield Services

Schlumberger companies engaged in oil field services performed as anticipated with significant gains in sales and profits.

Based on Schlumberger research and engineering projects, several improved services were placed in field use during 1964. Of particular importance are the dual induction-laterolog, the borehole-compensated sonic log, and the compensated formation density log. These services provide more accurate measurement of certain physical parameters of rock formations and yield good results under conditions which have formerly prevented the taking of accurate measurements. An improved formation sample taker permits a higher recovery of samples. The industry recognizes the value of the new and more accurate data provided by these tools; their use is expected to grow rapidly.

New services were introduced in limited geographic areas. Among these were production logging tools, four-arm, high-resolution dipmeters, and selective-fire, shot-by-shot shaped charge perforators. In addition, a number of new tools are being field tested.

North America

In North America combined sales for Schlumberger Well Surveying Corporation and Schlumberger of Canada increased as the result of higher drilling activity, the introduction of new and improved services, and participation in developing markets such as secondary recovery and gas storage projects.

The largest increase in drilling

occurred offshore from Louisiana where the number of wells drilled increased by more than 20 percent during the year. Offshore drilling is expected to increase further during 1965. Hurricane Hilda interrupted offshore business for a period of ten days. Three offshore unit laboratories located on drilling platforms were lost in the hurricane.

Automatic formation analysis logging was initiated in the United States during 1964. This service makes use of an electronic computer located in the truck-mounted mobile laboratory or offshore unit laboratory. Data from several logs are merged, combined computations are made electronically, and the results are presented in the form of a continuous log. This service represents a significant saving of time compared with manual computing and minimizes the possibility of overlooking a productive zone.

Schlumberger also developed and placed in operation in the Gulf of Mexico digital automatic recording and transmission equipment to transmit logs directly to the client's office onshore while these logs are made offshore. This new service saves the customer money through more efficient use of his technical personnel and through quicker decisions that reduce expensive offshore rig time.

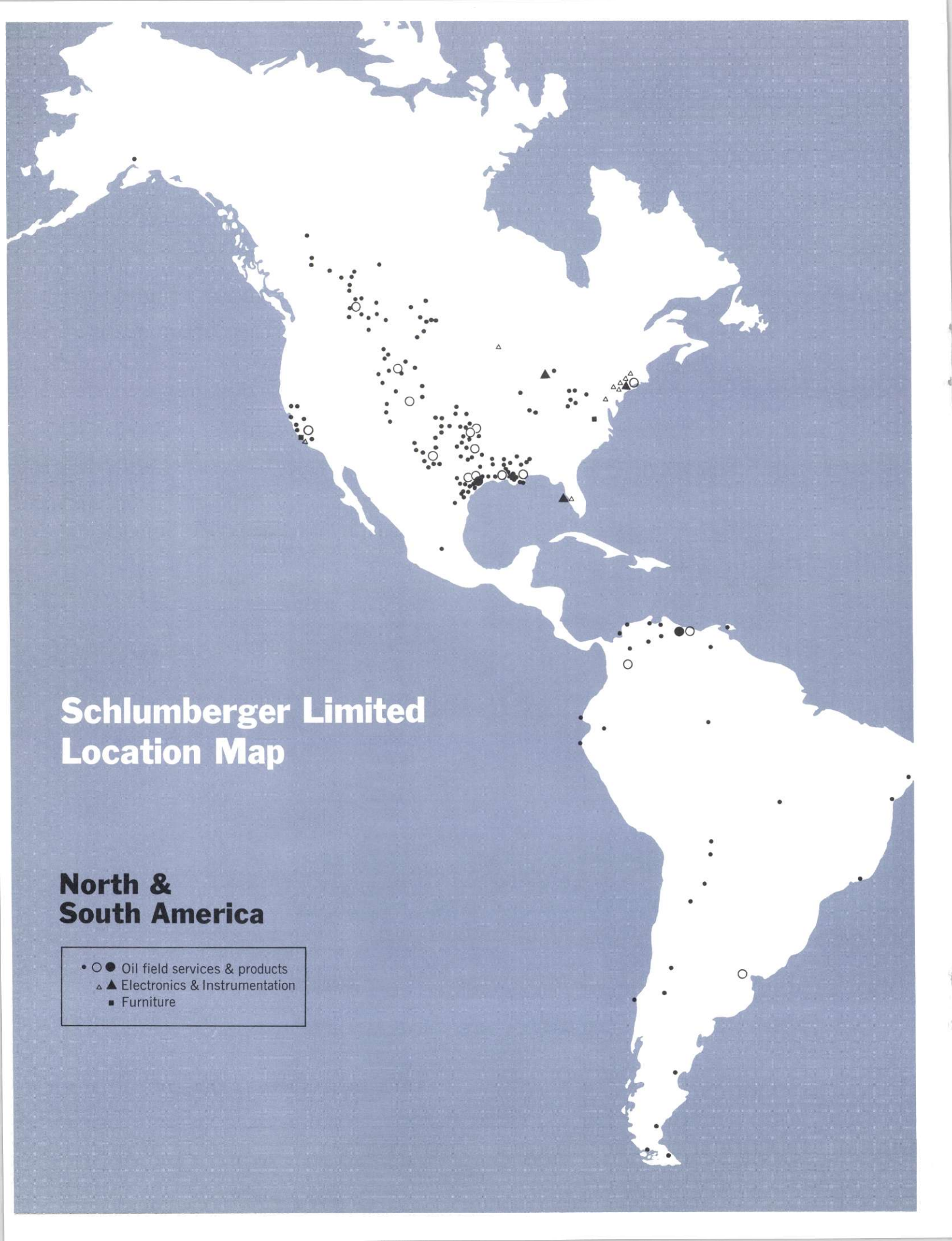
Results of the Johnston Testers operations improved substantially during 1964 with the introduction of new and more efficient services and products. Some of the more important are the new multi-flow evaluator, a retrievable production packer, a permanent bridge plug, fishing jars, wire-line jars, and the log-test-log service. During the year, a new Johnston Testers research and engineering center was opened in Sugar Land, Texas.

Schlumberger is active in the manufacturing of geophysical cables and associated components through the Vector Cable operations. Special high-performance armored electric cables for electric

Left:

Data acquired in well logging is recorded optically on photographic film.

continued on page 20



Schlumberger Limited Location Map

North & South America

- ○ ● Oil field services & products
- △ ▲ Electronics & Instrumentation
- Furniture

Schlumberger Limited

1900 Southwest Tower, Houston, Texas 77002

Subsidiaries and Divisions

(Consolidated)

SCHLUMBERGER WELL SURVEYING
CORPORATION
5000 Gulf Freeway, Houston, Texas

JOHNSTON TESTERS
Sugar Land, Texas

SCHLUMBERGER OF CANADA
1780 Elveden House, Calgary, Alberta,
Canada

VECTOR CABLE COMPANY
5616 Lawndale, Houston, Texas

SCHLUMBERGER SURENCO
Apartado 1608, Caracas, Venezuela

ELECTRO-MECHANICAL RESEARCH
1900 Main Street, Sarasota, Florida

WESTON INSTRUMENTS, INC.
614 Frelinghuysen Ave., Newark, New Jersey

HEATH COMPANY
Benton Harbor, Michigan

DAYSTROM FURNITURE
Sinai Road, South Boston, Virginia

VIRTUE FURNITURE
19801 South Santa Fe Ave., Compton,
California

SOCIETE DE PROSPECTION ELECTRIQUE
SCHLUMBERGER
42 Rue Saint Dominique, Paris, France

SCHLUMBERGER OVERSEAS
26 Berners, London W. 1, England

FORAGES ET EXPLOITATIONS PETROLIERES
35 Rue Saint Dominique, Paris, France

SOCIETE D'INSTRUMENTATION
SCHLUMBERGER
42 Rue Saint Dominique, Paris, France

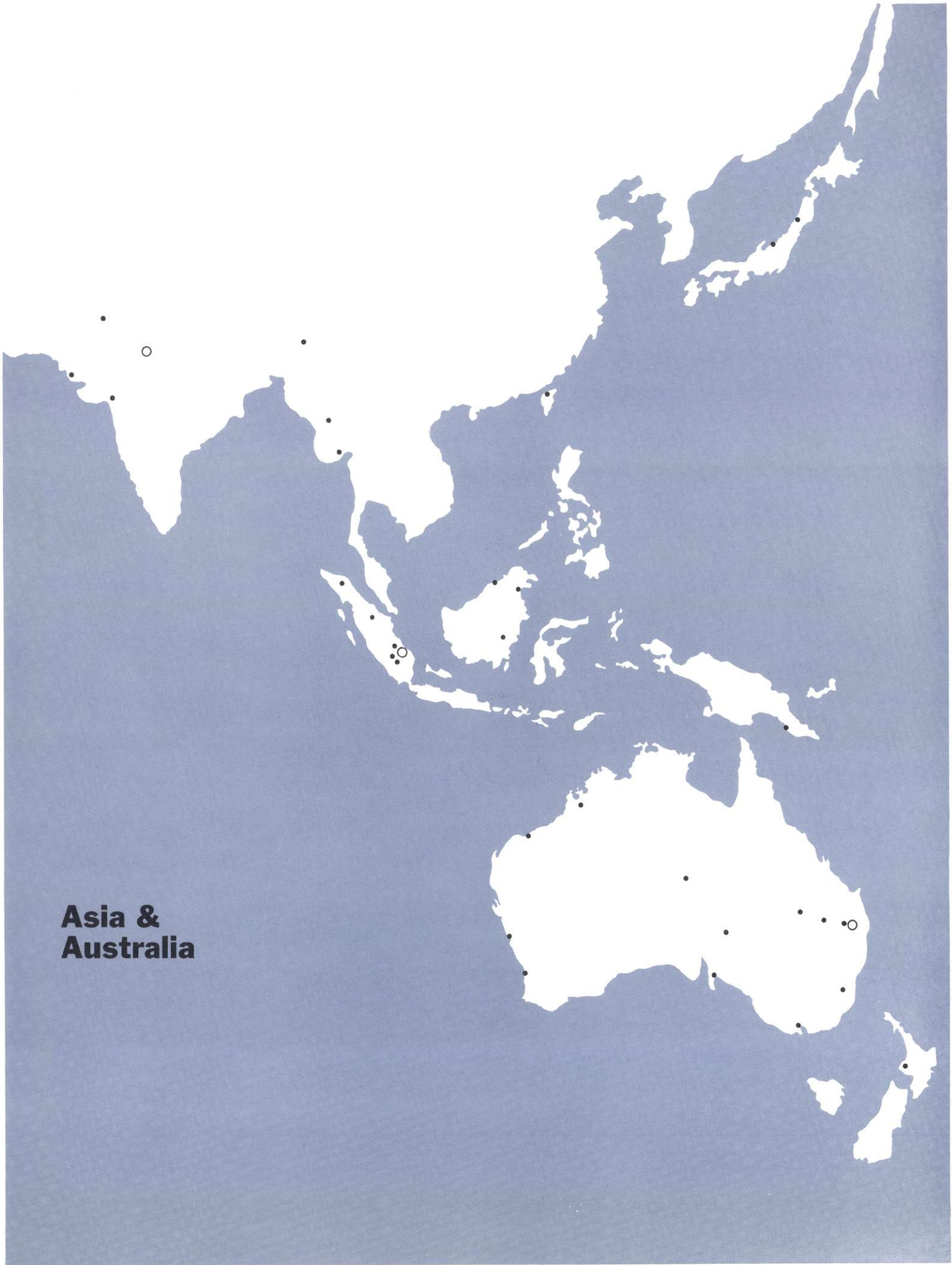
SOLARTRON ELECTRONIC GROUP
Farnborough, Hampshire, England

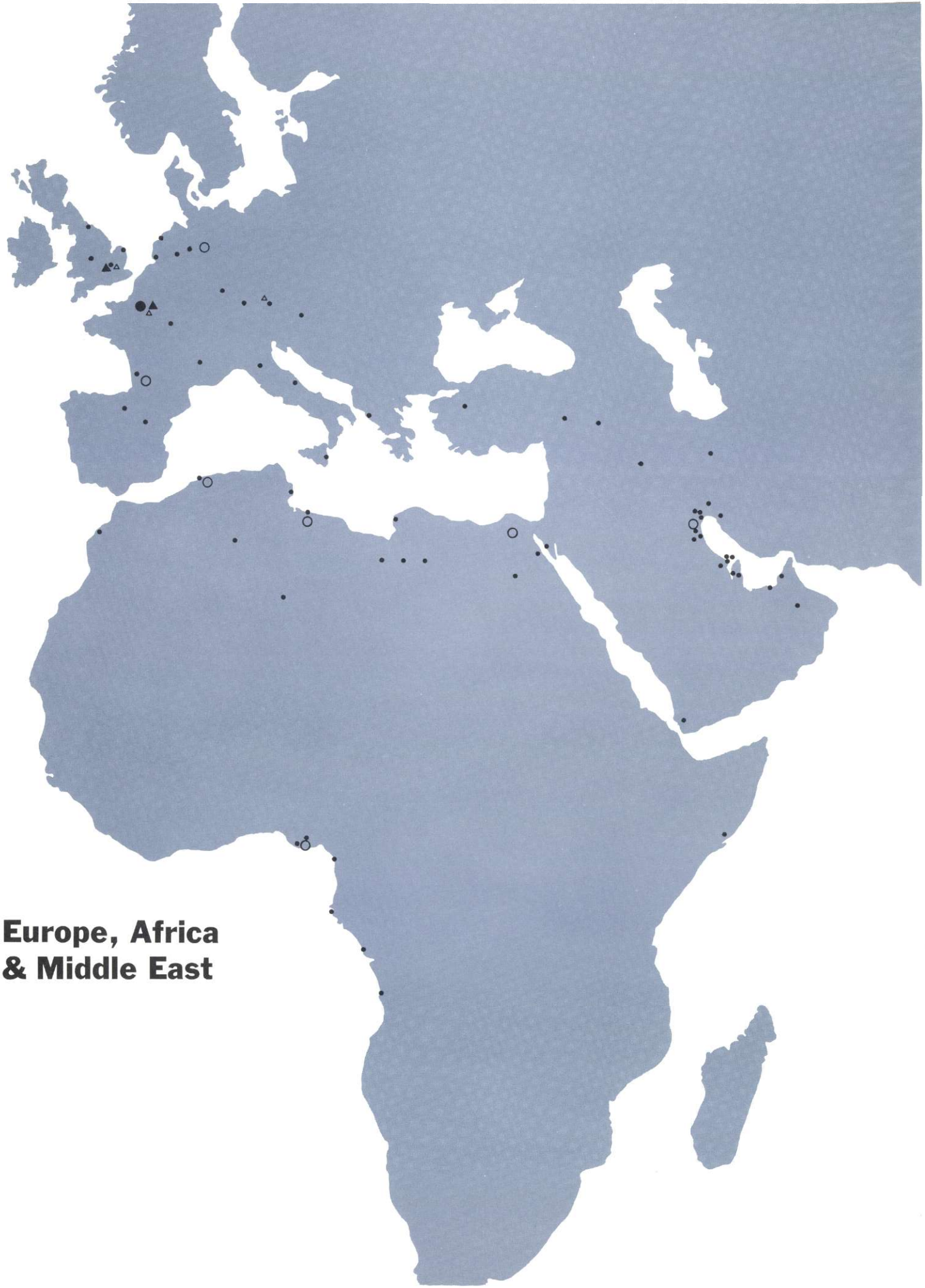
Associated Company

(Not Consolidated)

DOWELL SCHLUMBERGER
26 Berners, London W. 1, England

**Asia &
Australia**





**Europe, Africa
& Middle East**

logging and other uses are also manufactured. A new cable to permit recording of geophysical data in rough seas and expanded geophysical activity, particularly abroad and offshore, resulted in a significant increase in the sales volume during the year. To provide for expected continuing growth, a new manufacturing building was completed and occupied at midyear.

South America

In South America a three-year downward trend in revenue — a result of low drilling activity — has been reversed. The revenue trend is now upward as a result of more effective marketing and steadier drilling activity.

Automatic computation at the well site through the formation analysis log was introduced during the year in Argentina, Colombia, and Venezuela. Likewise, the new borehole-compensated sonic logging equipment was placed in service in all operating centers. Schlumberger maintained leadership in

performing with the introduction of the universal jet in Venezuela. The new packer flowmeter and associated production logging equipment — a service with a large market potential — was introduced in Brazil, Chile, Colombia, Trinidad, and Venezuela.

Eastern Hemisphere

Drilling declined in Italy and the Sahara but increased substantially in several other areas, notably Libya, Nigeria, and Australia where new discoveries resulted in increased drilling and added interest, both inland and on the continental shelf. Several discoveries in Nigeria insure high activity in the Niger delta and the offshore vicinity for several years. Following the discovery and evaluation of the very large Groningen gas field in Holland, many

Below:

An electronic well-logging cartridge undergoing vibration tests.



companies expanded their drilling activity nearby in Holland and Germany and obtained concessions in the North Sea. Drilling is expected to increase during 1965 and 1966 in the Persian (Arabian) Gulf, Nigeria, the North Sea, Australia, offshore France, and possibly Libya.

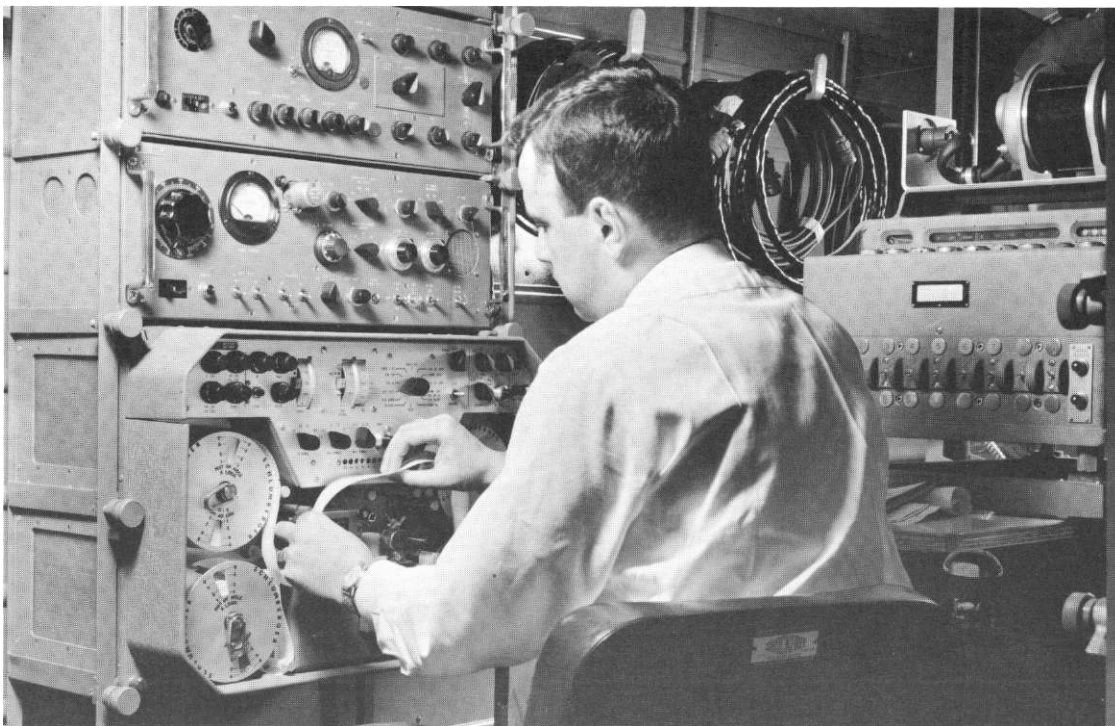
Sales and earnings increased in Europe and elsewhere in the Eastern Hemisphere and the outlook is good. New tools and equipment placed in use in several operating centers during the year were the borehole-compensated sonic, the formation density compensated, the desert logging truck, a drill pipe stuck-point indicator, and the improved sample taker.

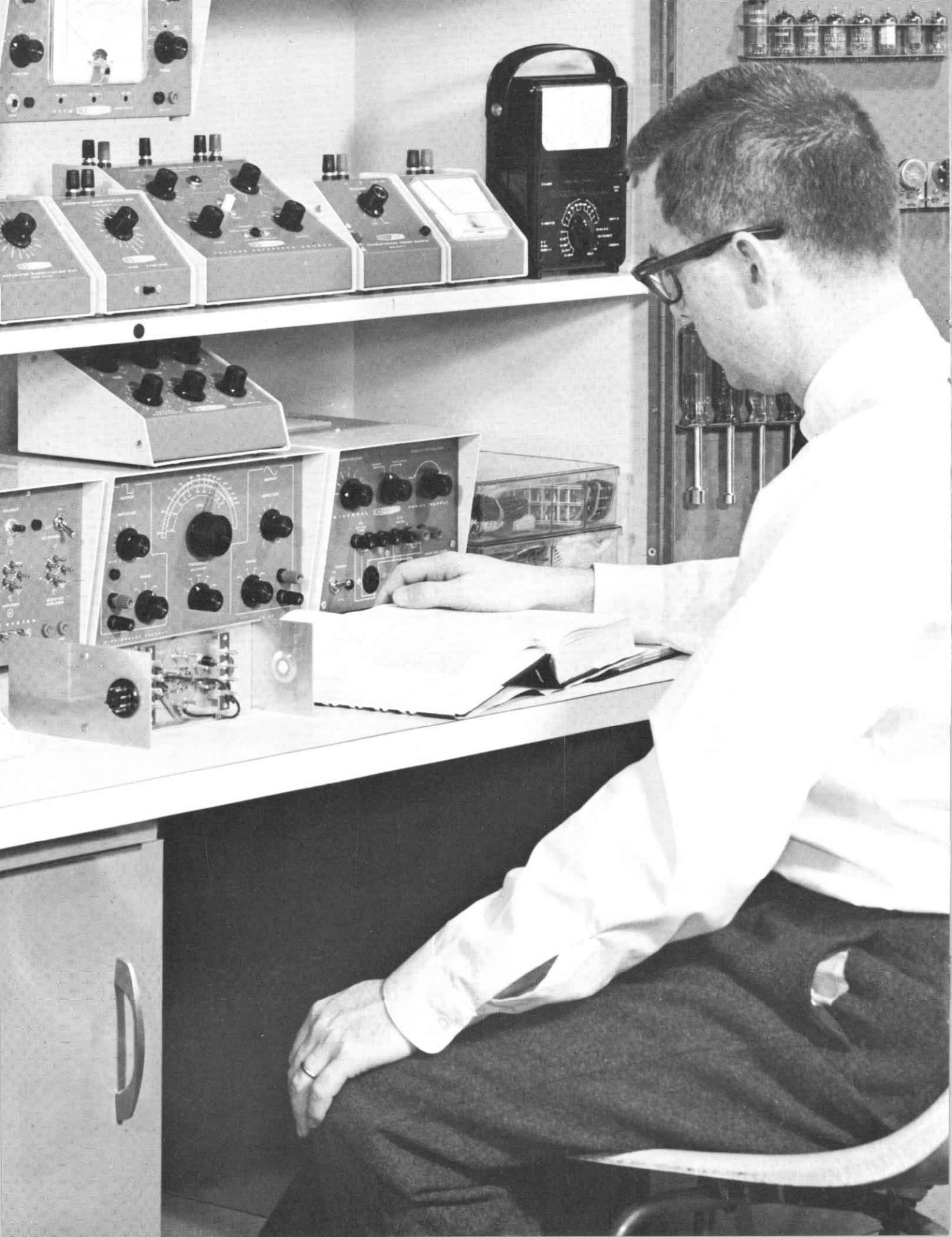
Schlumberger policy continues to be that wherever in the free world a well is drilled, regardless of its geographic location or inaccessibility, Schlumberger will furnish the same modern, highly reliable equipment, a capable well-trained technical staff, and the same services as it does in the Western Hemisphere or in Europe.

Schlumberger drilling operations are carried on by Forages et Exploitations Pétrolières (Forex). More than 850 employees and 38 rigs are engaged in this operation in Europe, the Middle East, North and West Africa, South America, and Australia. While most of the equipment is heavy-duty for deep drilling, some is lighter for core and water well drilling. It is all modern; 15 rigs have been purchased during the past three years. The company is expanding its activities in air drilling, a new technology adapted to reservoirs that could be damaged by conventional drilling fluids, and offshore. The first offshore rig will start drilling soon in the Bay of Biscay off the west coast of France and another, an electric rig, is under construction and soon will be placed in service off the coast of West Africa.

Below:

Inside the laboratory of a Schlumberger oil field service unit with control panels, computing equipment, and photographic recorder.





Electronics and Instrumentation

United States

Schlumberger, through Electro-Mechanical Research, Inc. (EMR) product lines, continued as a major designer and manufacturer of data acquisition, handling, and processing systems for aerospace programs.

A new series of modular solid-state frequency modulation multiplex telemetry equipment was developed and used in the successful Ranger mission which relayed pictures of the moon. Leadership was maintained in pulse-code-modulation telemetry and applied to the telemeter equipment used in the Orbiting Solar Observatory Satellites. A newly developed ground digital data processor, with a computer-like memory, greatly expands the type and rate of data which can be handled by telemetry systems. High-performance photoelectric sensors, with both industrial and aerospace applications, are now used in the giant booster which will place the Apollo spacecraft on the moon. A new quadrant photomultiplier designed for star tracking in a lightweight guidance system has important applications. A significant technical advance was achieved with the development of a photon scintillator. This scintillator has excellent market potential.

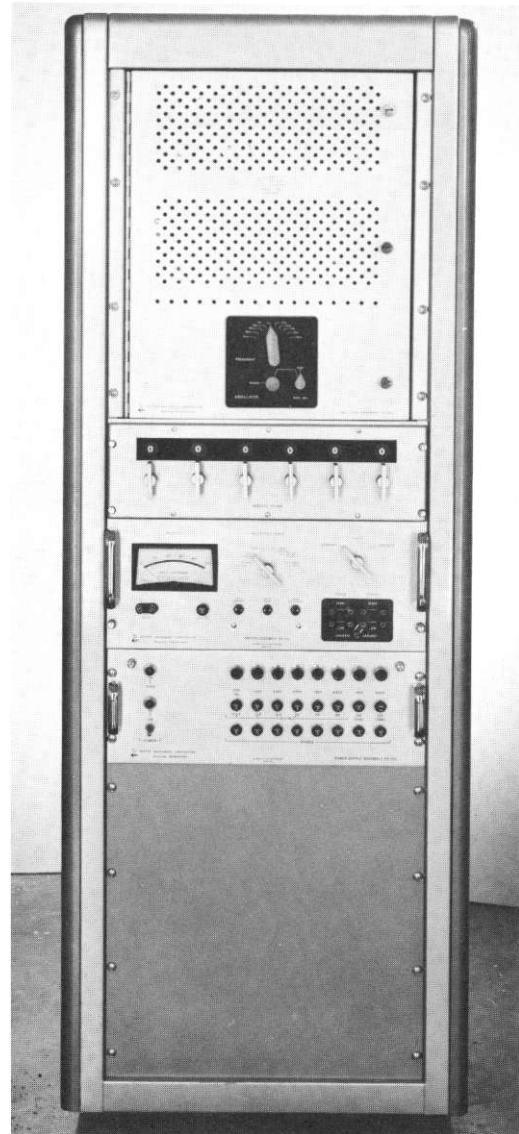
Telemetry techniques require continual improvement to keep up with needs for more experimental data. To explore this problem, an important contract was awarded to EMR to study frequency modulation telemetry and recommend design standards for future multiplex systems. Instruments for these systems are being incorporated in the Electro-Mechanical Research line.

Left:

At the University of Illinois—one of the many universities now equipped with Heathkit Malmstadt-Enke lab stations.

Microcircuit technology has growing importance in all phases of instrumentation. EMR has established a modern microcircuit laboratory and prototype production facilities for thin-film and hybrid microelectronic circuits.

EMR electro-optical research concentrated on digital television studies for interplanetary space probes and manned spacecraft. Work progressed on the free world's largest telespectrograph for a



Above:

The A.C. Absolute Voltage Standard in use at U.S. Air Force Standards Laboratories.

NASA study of re-entry of simulated meteoric objects.

Schlumberger's Weston products have an established reputation in the precision electrical indicating and recording field. Capital expenditures by the automobile, machine tool, steel industries, and power utilities are generating improved instrument sales.

There were major organizational changes during the year to insure better cost and quality control, to accelerate new product development, and to strengthen marketing of Weston products. Management headquarters formerly at Murray Hill, New Jersey, were moved to the principal manufacturing and engineering plant in Newark, New Jersey.

Weston developed and manufactured

the first of a new series of miniaturized meters. The proper portion of the scale is optically projected and enlarged. These meters are precise, easier to read, and considerably smaller than previous ones.

The new Weston-Rotek absolute voltage standard will be placed in most United States Air Force standards laboratories. As the company is able to expand the manufacturing output of this complex instrument, it will find a growing market in many industrial and research laboratories.

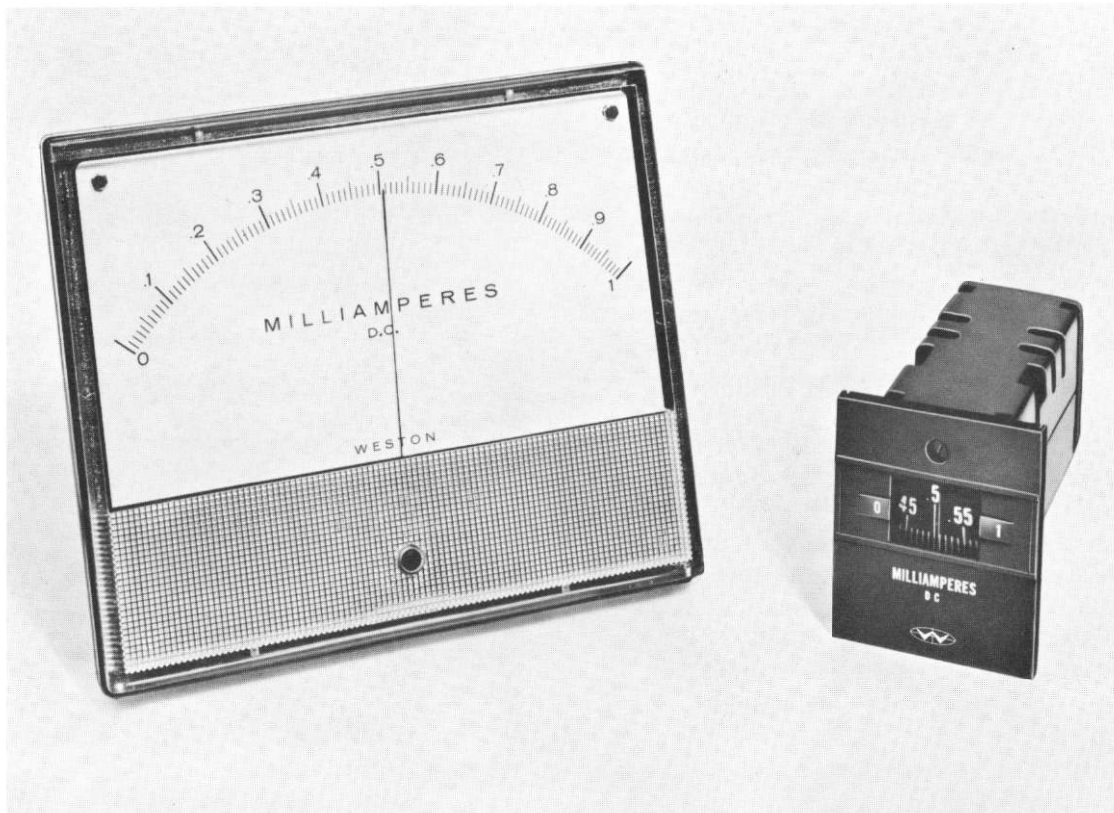
Weston is developing and supplying new systems and equipment for dynamic analysis. This business has significant growth potential in industrial and government markets. These systems can be used, for example, to measure stress

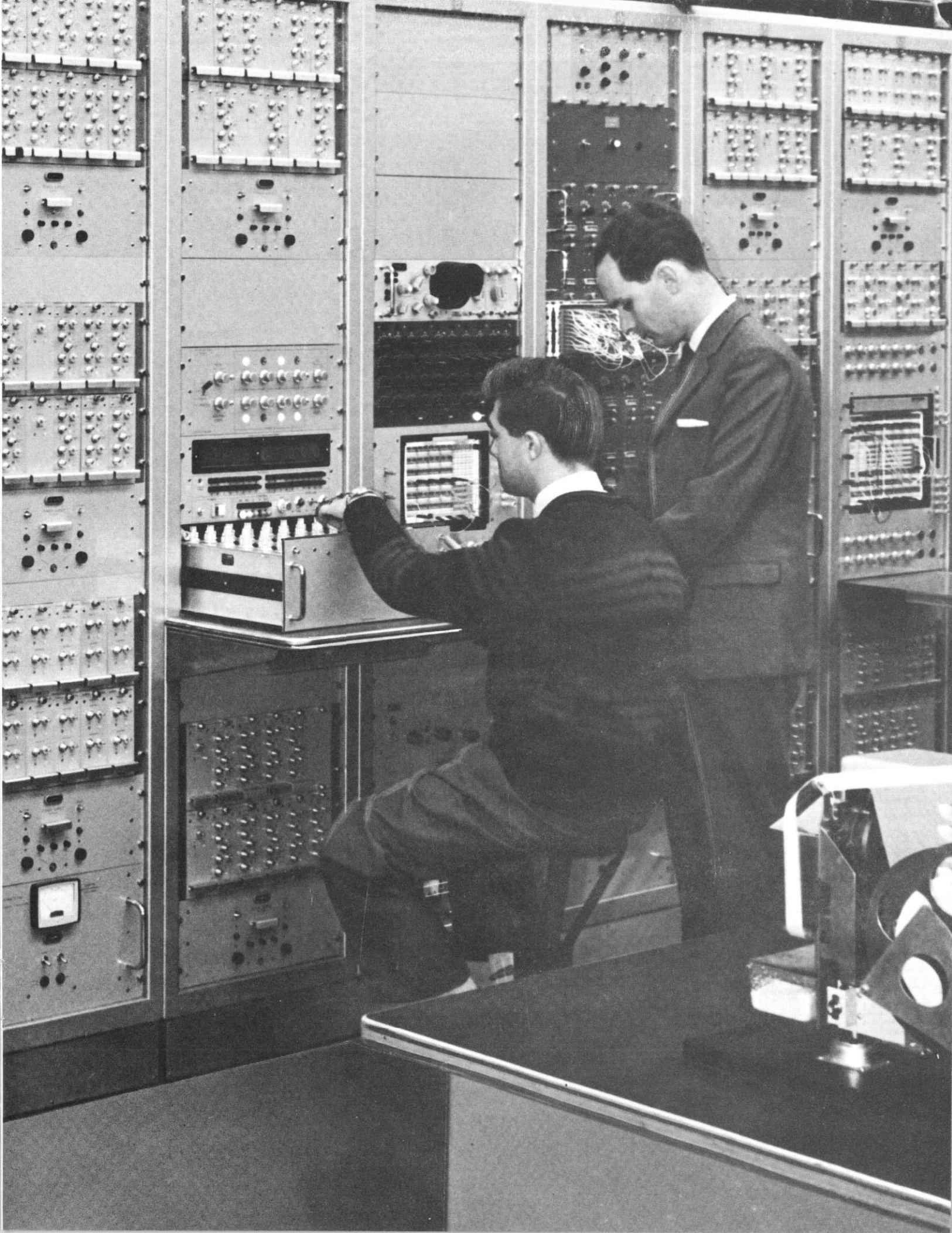
Below:

The new miniature precision meter (right) compared with its predecessor (left).

Right:

Solartron equipment is used by Sperry Gyroscope Company in the assembly of a Guided Weapons Control System.





developed under extreme conditions in such diverse structures as jet aircraft wings and nuclear reactors.

Heath Company, the recognized leader in the manufacture of electronic products in kit form, maintained a healthy sales growth through increasing acceptance of their established products and through the introduction of new ones. Their new group of laboratory instruments designed especially for educational purposes represents a significant advance in science teaching. Their use is increasing in college, university, and industrial laboratories.

Among many new Heath products developed during 1964 are a recording pH meter; a deluxe, five-channel, citizen band, two-way radio; a high-gain oscilloscope; and a full-size, double keyboard, all-transistor organ.

Europe

Schlumberger's Solartron products include electronic instruments, analog computers, data logging, and radar simulator systems. These are manufactured in England for marketing in the United Kingdom and in Europe.

Oscilloscopes and digital voltmeters are among the more important Solartron instruments. Emphasis was placed on improving these instruments and increasing production. This was successfully accomplished. Solartron is the largest manufacturer of digital voltmeters in the United Kingdom and Europe where the instrument market is growing rapidly.

Solartron makes radar simulators used for training purposes to give projected results of actual conditions. One of these, for example, simulates aircraft approaches to control towers and permits training of personnel without using real aircraft. Installations have been completed, or, are in process, for the Eire, Canadian, and Norwegian Civil Aviation Authorities, the Royal Swedish and Australian Navies, and, of course, the Royal Air Force. Production of

a battle simulator for training naval command personnel is well under way and the product will be in use by the customer in mid-1965.

Societe d'Instrumentation Schlumberger is a group of European electronic companies engaged in the production and sale of measuring and recording instruments and equipment. In 1964, management emphasized programs leading to the integration of sales and the regrouping of these companies in order to increase research, engineering, and manufacturing efficiency. These companies have developed and currently manufacture solid-state low-frequency equipment for radio and television broadcasting, nuclear instrumentation, stabilized power supplies, DC to AC static converters, high-pressure laboratory temperature control equipment, high-vacuum measuring equipment, pressure transducers, indicating meters, induction-type flowmeters, and digital voltmeters. This group of companies is active in providing instrumentation for a number of French scientific satellite systems.

Furniture

Schlumberger manufactures dinette tables and chairs at Compton, California, and South Boston, Virginia. The plant in Compton was completed near the year-end. It has 370,000 square feet and provides for modern mass production techniques from which operating economies will result. The other plant was completed two years ago.

During the year, our strong market position was maintained in existing fields. In addition, the commercial line — furniture for motels, hotels, schools and restaurants — was expanded.

Styling is important in the competitive furniture business and the Virtue and Daystrom furniture lines are known for quality styling; prospects continue good.

Financial Section

Financial Review

Net Income

Net income of \$24.6 million for 1964 was the highest in Schlumberger history and compares to \$21.8 million for 1963. Net income per share was \$4.78 based on 5,150,957 shares outstanding at December 31, 1964, compared to \$4.09 per share for 1963 (based on 5,333,587 shares). The significant increase in net income reflects mainly the improvement in oil field and related activities in the United States.

Operating Revenues

About two-thirds of the operating revenues of \$302.4 million were from United States and Canadian sources. Increases in oil field revenues were offset by declines in electronic revenues resulting from a reduction in government contract and instrument sales in the United States.

Taxes On Income

The provision for taxes on income was \$20.3 million, or an effective rate of 44.6% compared to 46.7% for 1963. The decrease in effective tax rate resulted primarily from the impact

(\$0.5 million) of a 2% reduction in the United States income tax rate and the effect (\$0.6 million) of changing the method of accounting for the investment tax credit from a deferred to the flow-through basis.

Acquisitions

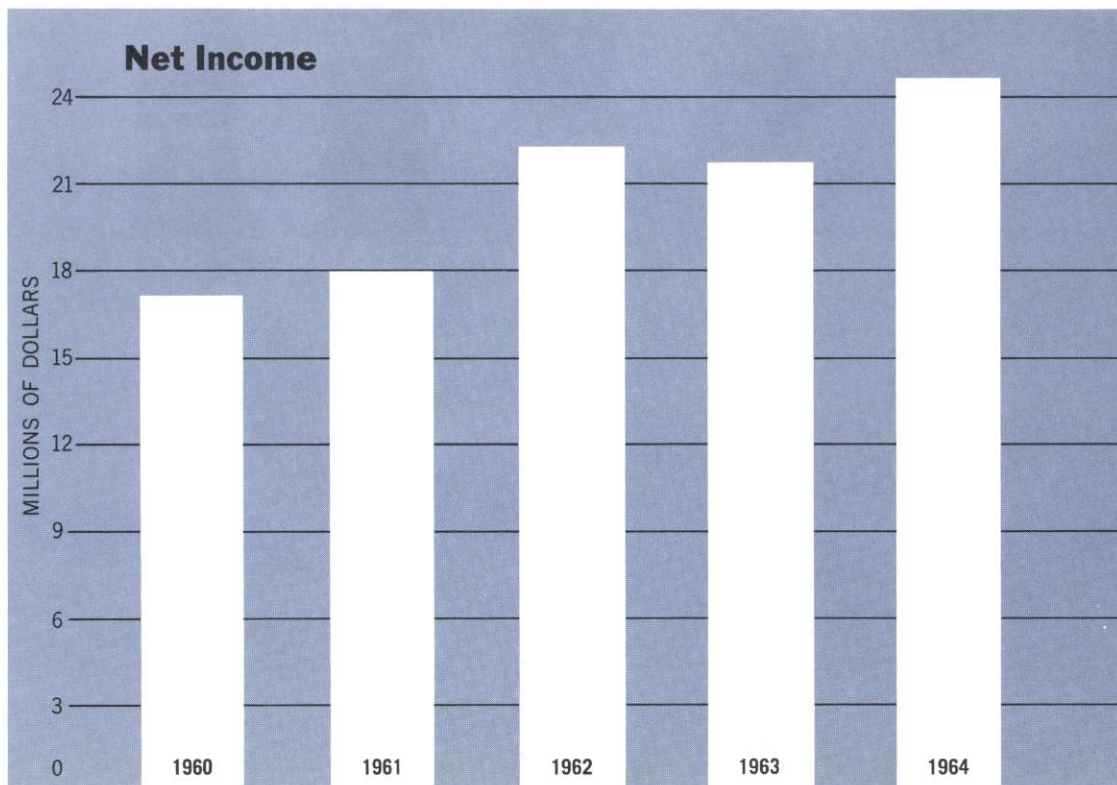
To strengthen and extend the Weston product line the company acquired Boonshaft & Fuchs of Hatboro, Pennsylvania and Rotek Instruments of Watertown, Massachusetts for \$3.4 million.

In late 1964 the business and assets of three instrument companies located in France were acquired for \$3.5 million.

Plant And Equipment

Expenditures for plant and equipment were \$27.7 million, about \$6.4 million higher than in 1963. A new plant was built in the Los Angeles area at a cost of \$3.5 million and occupied by Virtue Furniture Division in November. Expenditures for equipment for oil field service activities continued at a high level to provide Schlumberger field personnel with the latest technical equipment developed by Schlumberger research and engineering.

Arrangements were concluded during



the year for the sale of land in Orange County, California, acquired in 1960. The agreement provides for semi-annual installments and partial releases of the land through 1967 and the sale is expected to result in a gain of \$2.8 million on which no Federal income taxes should be payable because of capital losses carried forward from prior years. About \$0.4 million of this gain is included in net income for 1964, the remainder being deferred to be recorded as the semiannual installments are collected.

Dividends

Regular quarterly dividends were paid during the year as follows:

Date of Record	Date of Payment	Per Share
February 14	March 2	\$0.25
May 15	June 1	0.25
July 1	July 15	0.30
October 1	October 15	0.30
		<u>\$1.10</u>

Effective with the dividend paid July

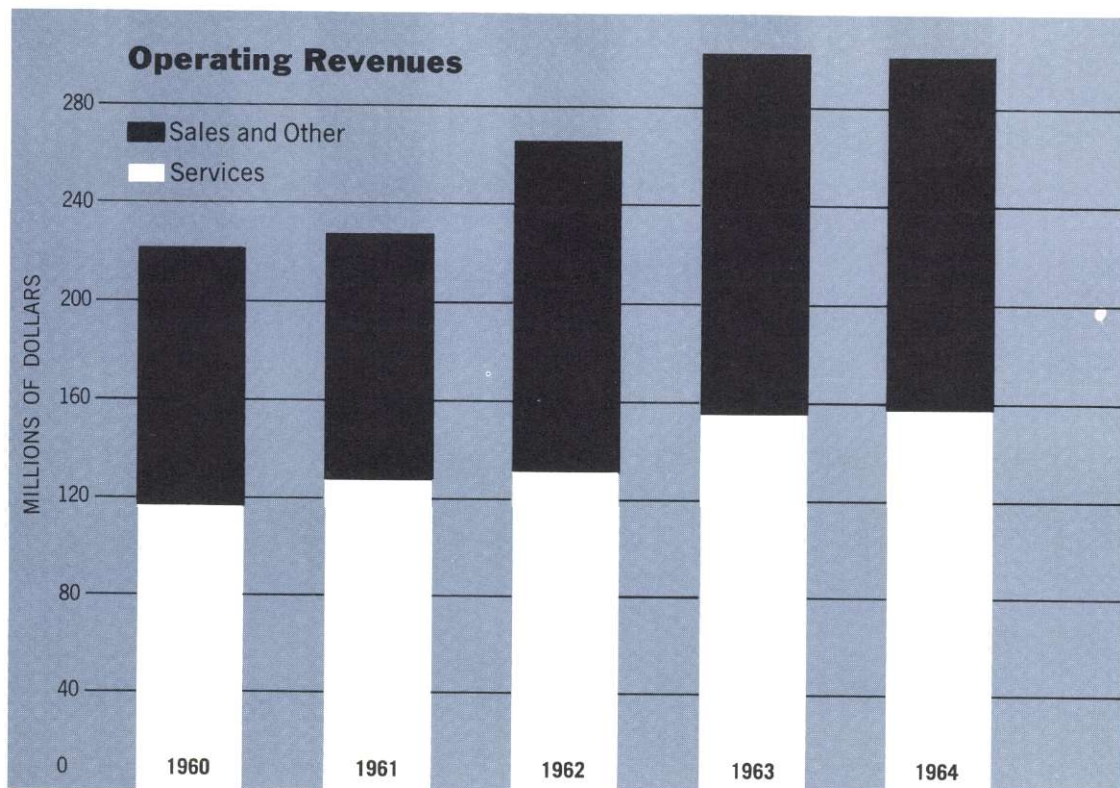
15, payment and record dates were advanced 45 days from the former schedule. Dividends declared in 1964 aggregated \$6.0 million or \$1.15 per share including the dividend of 30¢ per share paid on January 15, 1965. A dividend of 40¢ per share was declared February 11, 1965, payable on April 15, 1965.

Common Stock

The common stock of Schlumberger Limited is not subject to the United States tax on purchases of foreign securities under the Interest Equalization Tax Act.

The company is continuing to make purchases of its common stock on the New York Stock Exchange for employee stock options and other corporate purposes. At December 31, 1964, the company owned 182,630 shares of treasury stock.

On February 11, 1965, the Board of Directors adopted a resolution recommending that the stockholders approve an increase in the authorized capital stock of the company from 6,000,000 to 10,000,000 shares of \$1 par value per share. The recommendation will be presented to the stockholders for approval at the Annual General Meeting to be held on April 27, 1965.



Schlumberger Limited

(Schlumberger N.V., Incorporated in the Netherlands Antilles)

AND SUBSIDIARY COMPANIES

Consolidated Statement Of Income

	Year Ended December 31	
	<u>1964</u>	<u>1963</u>
	(Stated in thousands)	
OPERATING REVENUES	<u>\$302,367</u>	<u>\$302,967</u>
OPERATING EXPENSES		
Direct operating	192,586	197,403
Research and engineering	12,813	13,059
Profit-sharing and other employee benefit plans	8,674	7,318
General	45,183	44,365
Total operating expenses	<u>259,256</u>	<u>262,145</u>
Operating income	43,111	40,822
INTEREST AND OTHER INCOME—NET	<u>2,325</u>	<u>1,489</u>
Income before taxes on income	45,436	42,311
PROVISION FOR TAXES ON INCOME	<u>20,283</u>	<u>19,763</u>
Income before minority interest	25,153	22,548
MINORITY INTEREST in net income of subsidiaries	<u>547</u>	<u>717</u>
NET INCOME	<u>\$ 24,606</u>	<u>\$ 21,831</u>
NET INCOME PER SHARE	<u>\$4.78</u>	<u>\$4.09</u>

Expenses include \$21,142,000 and \$20,092,000 depreciation of fixed assets, and \$1,962,000 and \$1,768,000 amortization of intangible assets.

Income Retained For Use In Business

Balance at beginning of year	\$177,780	\$161,272
Net income	24,606	21,831
Dividends declared	(5,970)	(5,323)
Balance at end of year	<u>\$196,416</u>	<u>\$177,780</u>

Schlumberger Limited

(Schlumberger N.V., Incorporated in the Netherlands Antilles)

AND SUBSIDIARY COMPANIES

Consolidated Balance Sheet

	December 31	
	1964	1963
	(Stated in thousands)	
ASSETS		
CURRENT ASSETS		
Cash	\$ 26,141	\$ 32,312
Marketable securities, at cost (approximately market)	61,099	57,467
Receivables, less allowances for doubtful accounts	64,344	67,198
Inventories, at cost or less	53,322	49,048
Other current assets	1,418	1,396
	<u>206,324</u>	<u>207,421</u>
INVESTMENTS AND LONG-TERM RECEIVABLES, at cost	17,700	11,680*
FIXED ASSETS		
Plant and equipment, at cost	208,773	191,139
Less depreciation to date	<u>120,390</u>	<u>107,736</u>
	88,383	83,403
INTANGIBLE ASSETS, less amortization to date	13,211	13,388
OTHER ASSETS	<u>3,320</u>	<u>3,614*</u>
	<u>\$328,938</u>	<u>\$319,506</u>
LIABILITIES AND STOCKHOLDERS EQUITY		
CURRENT LIABILITIES		
Accounts payable and accrued liabilities	\$ 43,530	\$ 44,094
Estimated liability for taxes on income	20,469	18,852
Dividend payable	1,550	1,332
Portion of long-term debt due within one year	2,523	2,046
	<u>68,072</u>	<u>66,324</u>
LONG-TERM DEBT	12,641	14,717
OTHER LIABILITIES	3,474	5,475
DEFERRED CREDIT TO INCOME	2,400	—
MINORITY INTEREST IN SUBSIDIARIES	8,063	7,189
	<u>94,650</u>	<u>93,705</u>
STOCKHOLDERS EQUITY		
Common stock outstanding—stated value	37,872	48,021*
Income retained for use in business	196,416	177,780
	<u>234,288</u>	<u>225,801</u>
	<u>\$328,938</u>	<u>\$319,506</u>

*Amounts reclassified for comparison

Schlumberger Limited

(Schlumberger N.V., Incorporated in the Netherlands Antilles)

AND SUBSIDIARY COMPANIES

Consolidated Statement Of Source And Application Of Funds

	Year Ended December 31	
	<u>1964</u>	<u>1963</u>
	(Stated in thousands)	
SOURCE		
Net income	\$24,606	\$21,831
Depreciation and amortization	23,104	21,860
All other, net	3,073	3,970
	<u>50,783</u>	<u>47,661</u>
APPLICATION		
Purchase of fixed assets, less retirements	24,563	18,471
Business acquisitions and investments	10,565	3,473
Purchase of treasury stock	10,454	2,334
Dividends declared	5,970	5,323
Reduction of long-term debt	2,076	3,010
	<u>53,628</u>	<u>32,611</u>
Net increase (decrease) in working capital	<u>\$ (2,845)</u>	<u>\$15,050</u>

Notes To Financial Statements

Principles of Consolidation

The consolidated financial statements include all majority-owned operating subsidiaries in the United States and other countries except for three small French instrument companies acquired late in 1964. The financial statements show the consolidated results of operations and financial position after eliminating inter-company transactions and providing for minority interests. Fixed assets and investments recorded in other currencies have been translated to United States dollars at historical rates and other items have been translated at current rates.

Long-Term Debt

Long-term debt consists of \$8.1 million Weston 5 $\frac{1}{4}$ % sinking fund debentures due 1980 and \$4.5 million other debt payable mainly to banks and insurance companies. All amounts payable in 1965 are included in current liabilities. The indenture covering the debentures provides for annual sinking fund redemptions and contains certain restrictive provisions pertaining to payment of dividends.

Intangible Assets

Research and development costs are charged to operating expenses currently. Intangible

assets, representing primarily the portions of investments in consolidated subsidiaries not attributable to tangible assets, are being amortized over periods of five or ten years.

Profit-Sharing and Other Employee Benefit Plans

There are various employee benefit plans in many countries providing for profit-sharing, pensions, or other benefits in lieu of pensions. Provision has been recorded for all benefits arising from prior service and, except for relatively small amounts, funds for the plans have been deposited with trustees.

Taxes on Income and Renegotiation

The amounts provided for taxes on income are believed to be adequate for all taxes applicable to earnings to date. A tax loss carry-forward, which could have the effect of reducing future income taxes by some \$2.5 million, has not been used previously for tax purposes because all of the United States subsidiaries do not presently file consolidated tax returns. Renegotiation refunds, if any, are not expected to be material.

Common Stock

Amounts shown for common stock in the balance sheet represent the stated value of the

issued shares (\$50.0 million) reduced by the cost of shares reacquired and increased by amounts received for treasury shares reissued. Of 6,000,000 authorized shares (\$1 par value), 5,333,587 have been issued. At the end of 1964 and 1963, respectively, there were 5,150,957 and 5,303,217 shares of common stock outstanding, and 182,630 and 30,370 reacquired shares held in the treasury.

Stock Options

Options to purchase the company's common stock at prices ranging from \$30 to \$80 per share have been granted to key employees. At December 31, 1964, options for 146,925 shares were outstanding, including options for 96,375 shares exercisable at that date.

During 1964 options for 20,000 shares were granted, options for 5,440 shares were exercised at prices of \$30 to \$60 per share, and options for 12,550 shares terminated.

The options granted in 1964 were issued in accordance with the qualified stock option plan approved by the stockholders in May, 1964; such options are for five-year periods and are exercisable (at market value at date of grant) for one-fourth of the shares each year after the first year, cumulatively. Options granted in prior years are for ten-year periods and for the most part are exercisable for one-fifth of the shares each year after the first year, cumulatively.

Supplementary Balance Sheet Information

Cash includes \$7.6 million interest-bearing time deposits. Marketable securities comprise mainly United States dollar securities of the International Bank and of governments of the

United States and other countries.

Inventories are stated primarily at moving average or standard cost, less allowances for obsolescence. Operating material and supplies for oil field services amount to \$18.6 million, and inventories for manufacture and sale of electronic equipment and other products aggregate \$34.7 million.

Investments include 50% ownership of Dowell Schlumberger stated at cost of \$6.1 million, compared to approximately \$7 million equity in the net assets of that company at December 31, 1964. Investments also include \$3.5 million for three small French instrument companies acquired late in 1964.

Fixed assets comprise \$4.9 million land, \$51.4 million buildings and improvements, \$101.0 million field technical equipment, and \$51.5 million other equipment. Depreciation is recorded by declining balance or straight line methods over the estimated useful lives of the assets.

Deferred credit to income represents a portion of the gain on sale of a tract of land. The sale is expected to result in tax-free gain of \$2.8 million, of which \$0.4 million is included in the statement of income for the current year; the remainder is to be recorded in the years 1965 to 1967 inclusive, as the semi-annual payments provided for by the sales agreement are collected.

Commitments and Contingencies

There were no commitments or contingencies other than in the ordinary course of business, except for several lawsuits which on the basis of presently available information are not expected to result in any liability.

PRICE WATERHOUSE & CO.

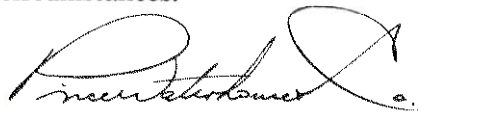
ESPERSON BUILDINGS

HOUSTON 77002

February 23, 1965

TO THE BOARD OF DIRECTORS OF
SCHLUMBERGER LIMITED:

In our opinion, the accompanying consolidated balance sheet, the related consolidated statements of income and income retained for use in business and the consolidated statement of source and application of funds present fairly the financial position of Schlumberger Limited and its subsidiaries at December 31, 1964, the results of their operations and the supplementary information on funds for the year, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year. Our examination of these statements was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.



Schlumberger Limited

(Schlumberger N.V., Incorporated in the Netherlands Antilles)

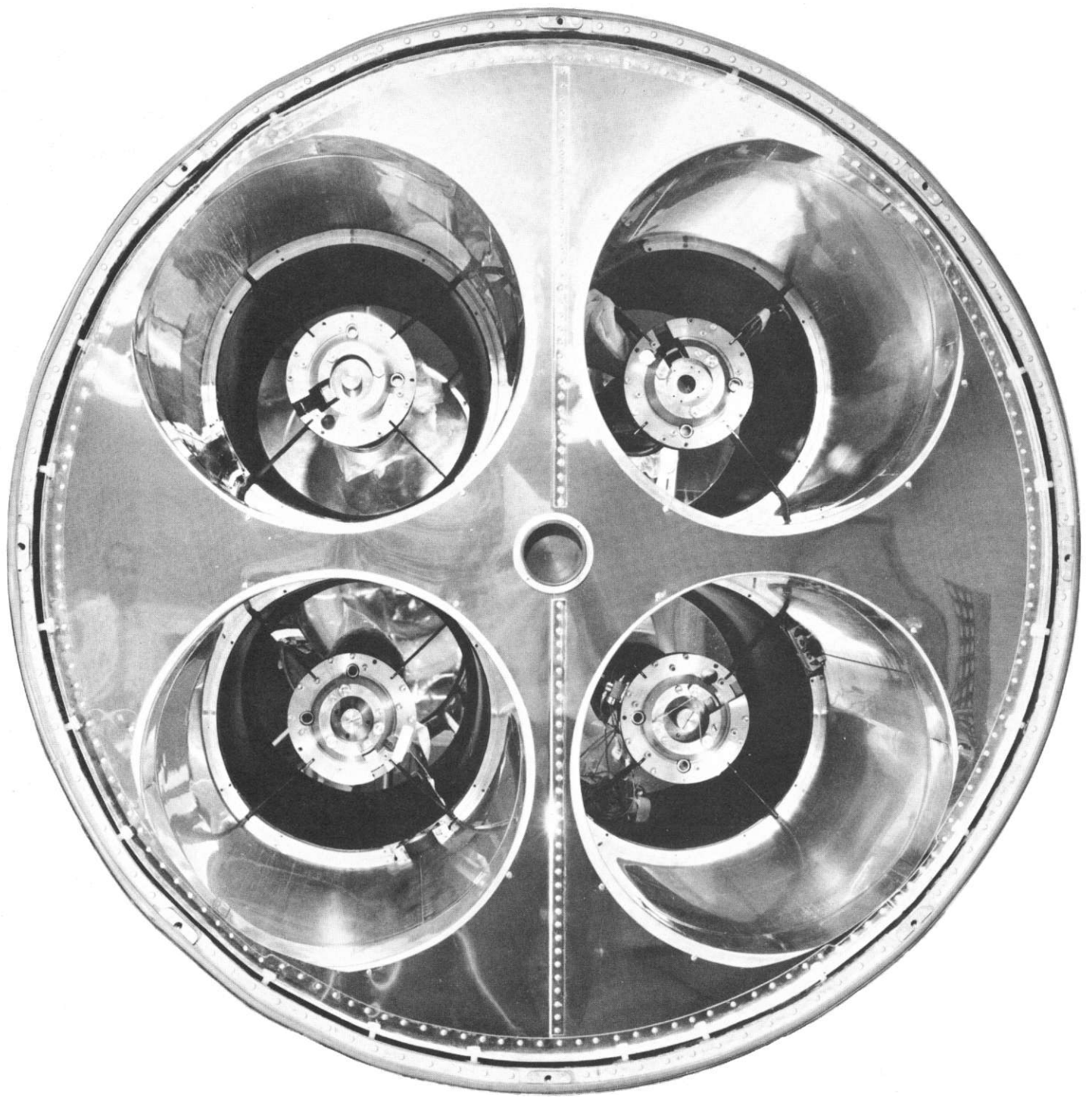
AND SUBSIDIARY COMPANIES

Five Year Financial Summary

	<u>1964</u>	<u>1963</u>	<u>1962</u>	<u>1961*</u>	<u>1960*</u>
	(Stated in thousands)				
Operating revenues	\$302,367	\$302,967	\$266,544	\$229,998	\$223,041
Depreciation and amortization	23,104	21,860	15,811	14,483	14,309
Taxes on income	20,283	19,763	15,783	16,113	13,498
Net income	24,606	21,831	22,240	17,886	17,212**
Net income per share	\$4.78	\$4.09	\$4.17	\$3.35	\$3.23 **
Dividends paid per share (on Schlumberger common stock).....	\$1.10	\$1.00	\$0.60	\$0.60	\$0.60
At end of year—					
Working capital	\$138,252	\$141,097	\$126,047	\$113,509	\$113,903
Plant and equipment, net	88,383	83,403	74,718	63,697	63,784
Stockholders equity	234,288	225,801	211,272	192,856	177,376

*Data for 1961 and 1960 include appropriate amounts relating to Weston Instruments, Inc. (formerly Daystrom, Inc.) acquired February 1, 1962, and accounted for as a pooling of interests.

**Does not include special credit of \$2,235,000 (\$0.42 per share) from gain on sale of investment.



End view of Project Celescope canister showing the four 12 inch telescopes with ultraviolet-sensitive television picture tubes to record the spectra of stars. Project Celescope for which Electro-Mechanical Research is a prime contractor is a major experiment aboard NASA's Orbiting Observatory.

SCHLUMBERGER LIMITED 1900 Southwest Tower Houston Texas USA 77002