

**Schlumberger**  
**1967 Annual Report**







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## Cover

*Section of magnetic tape with well log data recorded for analysis in an EMR computer. The data is represented by a sequence of magnetic marks on the tape made visible in the photograph with an iron powder. Photo by William Vandivert.*

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*One of the 19 offshore rigs now drilling in the North Sea. Schlumberger units are on all of them.  
Photo by Henri Cartier-Bresson.*



## In Brief

	1967	1966	1965
Operating Revenues . . . . .	\$369,222,000	\$343,136,000	\$318,106,000
Net Income . . . . .	31,538,000	28,149,000	27,087,000
Dividends Paid . . . . .	9,173,000	8,938,000	7,719,000
Per Share			
Net Income . . . . .	\$4.12	\$3.68	\$3.51
Dividends Paid . . . . .	\$1.20	\$1.17	\$1.00
Average Shares Outstanding . . . . .	7,657,000	7,652,000	7,715,000



## To the Shareholders

A company operating in 52 countries is bound to have its yearly share of problems and crises. This year was no exception with the Middle East war and the upheaval in Nigeria. However, 1967 has been a good year for Schlumberger with revenues of \$369 million and net income of \$31.5 million. Earnings were \$4.12 per share, 12% higher than in 1966.

The fourth quarter shows significant improvement: earnings of \$1.30 per share compared to \$1.07 in the last quarter of 1966.

Our objective has been the same for the past three years: increase oil field service revenues year after year; improve the profitability of our electronic operations.

Oil field revenues increased 6% in 1967 despite lower U.S. drilling.

Electronics were on target but for the non-recurrent costs of a six-week strike at the Newark plant of Weston and write-offs at Carruth, the aircraft instrument business recently acquired at Wichita, Kansas.

The offshore "explosion" and the widely increased use of digital electronics have made their mark again on the year 1967. They will, to a great extent, determine our future.

Offshore has a direct impact on every Schlumberger division or subsidiary working in the oil fields. See page 6 of this report.

Our commitment to digital electronics has two aspects. We compete in the scientific computer market and this new technology invades almost all parts of our business—oil field

logging as well as instrumentation. Here again, see page 20 of this report.

The international monetary crisis and its possible effect on world economy recommend caution in any forecast for 1968; yet we foresee the same growth as last year in oil field operations, and we expect electronic operations to be more profitable.



Jean Riboud President



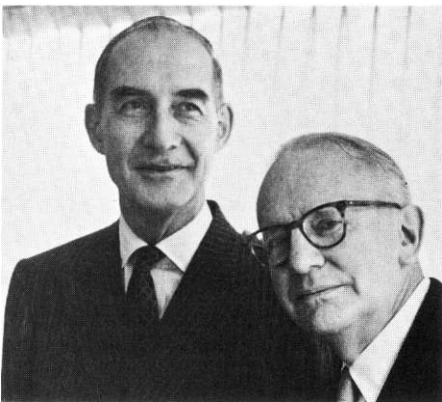
John de Menil  
Chairman of the Board

February 15, 1968









*Henri G. Doll (left) with John de Menil, new Chairman of the Board of Schlumberger Limited.*

### **Henri Doll retires**

September 5, 1927: H. G. Doll, a young French engineer, tests in Alsace, the first tool designed to measure resistivity along the borehole of an oil well. This is the first "electric log."

August 31, 1967: one week under 40 years later—H. G. Doll retires as Chairman of the Board of Schlumberger Limited.

When Henri Doll joined Conrad and Marcel Schlumberger in 1926 his first responsibility was to head a small engineering team—his first assignment to design logging tools. The early resistivity measurements, rough as they were, gained acceptance by the oil companies. H. G. Doll immediately saw the future for more accurate measurements of resistivity and other physical properties. Logging underground formations became a standard service for each oil well. It helped to discover new oil fields and to exploit old fields more profitably.

For forty years, Henri Doll never ceased to work on technical problems, never ceased to believe that the future of a technical company is in research. He communicated his faith to Schlumberger. The original two-

man engineering team, designers of the first logging tool, has grown to 700 scientists and engineers. Last year expenditures for research and engineering totaled more than \$19 million.

Leading this growing team, Henri Doll invented such basic Schlumberger services as the Induction Log, Laterolog, Dipmeter, and the various auxiliary services such as Microlog, Microlaterolog, Proximity Log. These services now account for 40% of wireline income. H. G. Doll's impact on Schlumberger: one wireline service in 1930, over seventy in 1967.

H. G. Doll has been a driving force. He organized the engineering center in Houston, the research laboratories in Ridgefield, and during World War II, Electro-Mechanical Research. He personally hired many of the scientists and engineers working today in these laboratories.

To honor Henri Doll's contribution to Schlumberger, to oil well logging technology and to modern measurement and instrumentation, the research laboratories at Ridgefield, Connecticut, have been named the Schlumberger Doll Research Center.



## Schlumberger and the Offshore

The oil business has moved to a new frontier . . . offshore. The impact on Schlumberger is big; offshore wireline service revenues increased from \$18 million in 1963 to \$35 million in 1967.

Today 21 countries are producing offshore oil and gas: exploration is underway off the coast of 40 others. The oil industry has a capital investment of \$7 billion offshore the United States and more than \$3 billion abroad. It will probably invest as much as \$25 billion in the next decade.

Offshore oil accounts for 15% of free-world production. And 18% of free-world reserves are located offshore. Experts forecast an ultimate 700 billion barrels—more than twice present free-world reserves.

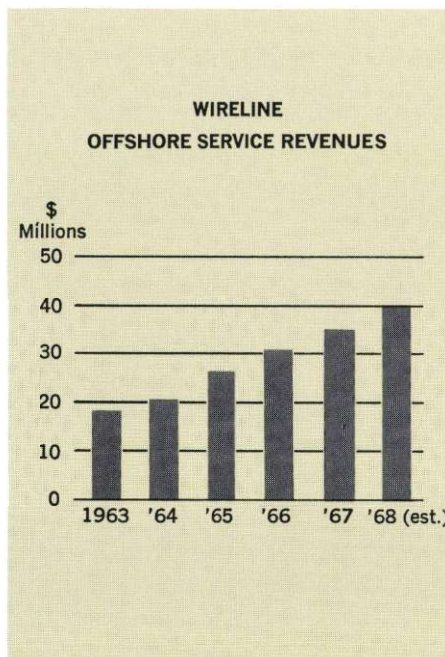
Oil men first moved to sea as a logical extension of the search on land. Oil is found in sedimentary deposits formed millions of years ago, with no relation to present land-sea boundaries. In 1938, when an oil company first drilled a well in shallow waters a mile off the Louisiana coast, it was an extension of an on-land field.

In 1947 drillers completed the world's first producing well out of sight of the Louisiana shore. At a surprising pace, the oil industry equipped itself to drill in deeper and deeper waters, and to use modern techniques as efficiently on water as on land.

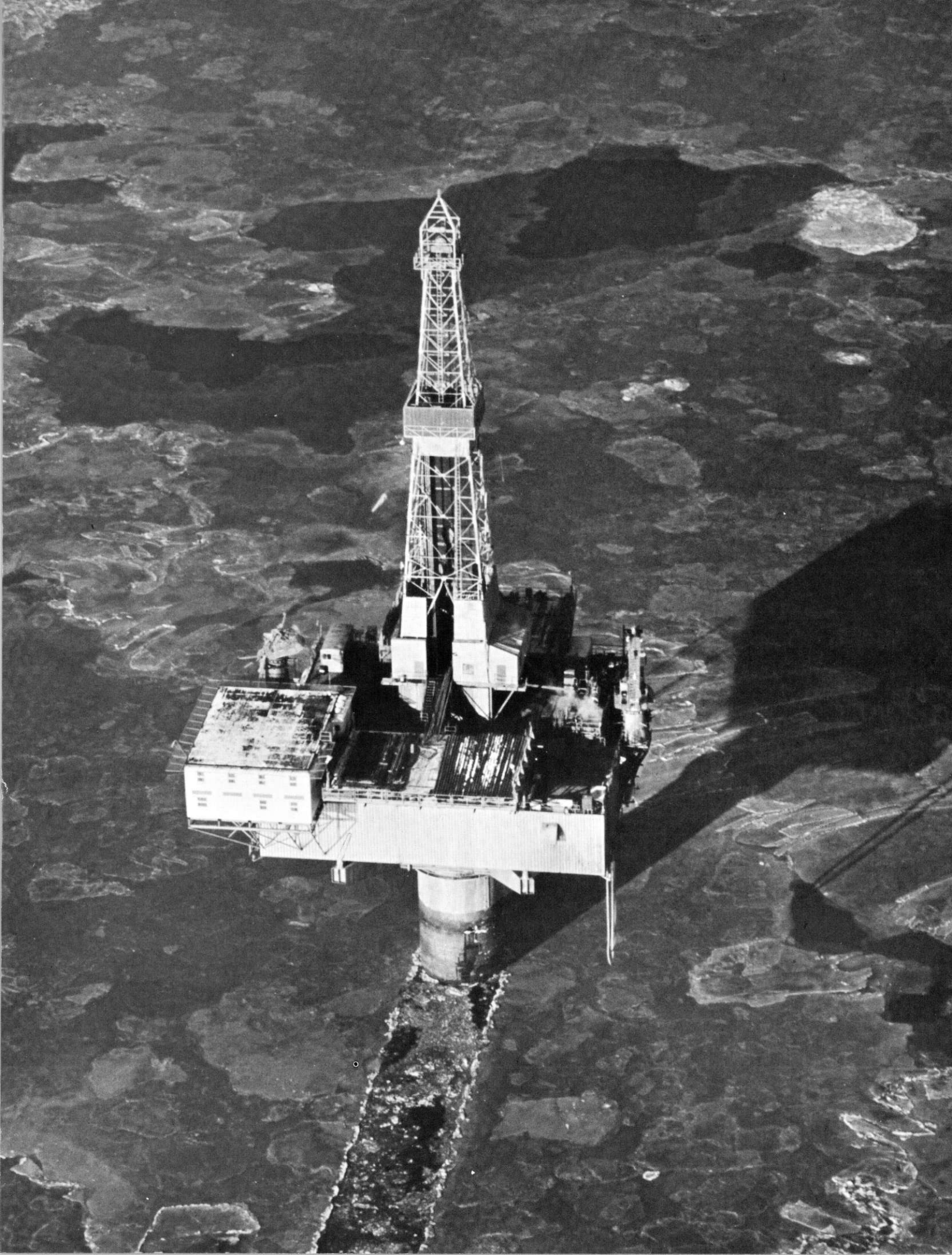
Geologists setting off their seismic charges at sea, soon began to find large offshore oil fields unconnected with land reservoirs. Many discoveries followed in the Gulf of

Mexico as well as in areas where conditions were unfavorable on the contiguous shore, in the North Sea and Australian waters, for instance. Offshore oil has also been found off the coast of California and Alaska, in the Persian Gulf, Gulf of Suez, off Trinidad, Peru, Nigeria, Gabon, Cabinda, Japan, Borneo and in the Adriatic Sea. Many areas, like South Africa, previously considered unfavorable for exploration, are being investigated. The world fleet of offshore rigs totals 260 units.

There are staggering problems: hurricanes in the Gulf of Mexico, ice floes in Alaska, dense fog and stormy waters in the North Sea. They mean huge investments and costs. An offshore drilling unit may cost over \$10 million, stand in 200 feet of water or drill at greater depths while floating, and withstand any weather. Drilling costs are up to \$1,000 an hour.



*Trading Bay monopod drilling rig in Cook Inlet, Alaska. Photo courtesy of Marathon Oil Company.*



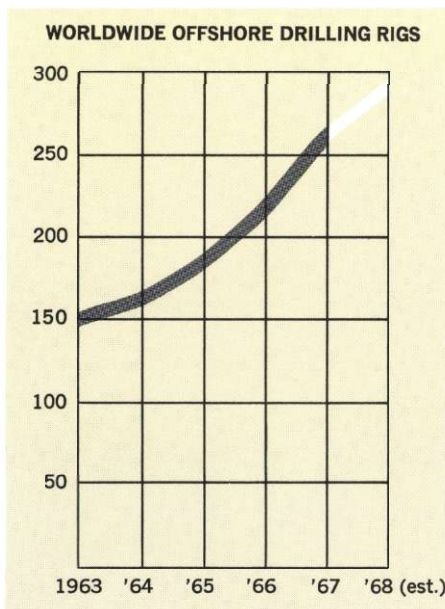


Offshore exploration is a unique opportunity and challenge for Schlumberger. Opportunity because the oil operator requires the most complete and accurate data, hence more Schlumberger services are needed providing more income per well drilled. Challenge because efficient operation at sea is difficult. The logging unit is permanently located on the drilling platform, and it must withstand corrosion. Instrument breakdowns must be eliminated because of rig time costs. Expensive maintenance centers must be established. Back-up equipment must be available. Personnel must be specially trained to cope with the severe conditions at sea.

The offshore boom does not benefit Schlumberger wireline services alone:

- New and better completion tools are designed by Johnston Testers for offshore use.
- In 1968 Dowell Schlumberger

plans to double its offshore units for cementing and stimulation. The major expansion will be in the Middle East, Australia and off the African coast.



Count based on Offshore magazine, January, 1968, Rig Locator Summary

- A large percentage of Plastic Applicators' business is coating steel pipe for offshore drilling and production.
- Vector manufactures marine cables and cable systems for seismic exploration at sea. The offshore expansion has played a major part in the successful growth of Vector.
- Forex, a well established land drilling contractor, owns or operates directly or through subsidiaries five offshore rigs. Three large units are now drilling—in the Bay of Biscay, the Adriatic Sea, and the North Sea. Two tenders are drilling in the Persian Gulf. Forex's 50% owned subsidiary, Neptune, has ordered the construction of a \$10 million semi-submersible rig.

All indications point to offshore expansion in the next decade. The world's 3 million square miles of continental shelves—prime territory for exploration—have only been scratched.

LOCATION OF OFFSHORE DRILLING RIGS IN 1967



Numbers indicate major concentrations of rigs



SCHLUMBERGER

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## Oil Field Services

### Schlumberger Wireline Services

The main features of Schlumberger wireline services throughout the world during the year were:

- Service revenues increased worldwide about 5%. These results have been achieved in spite of a decrease of 11.5% in drilling in the United States, the war in the Middle East and the civil war in Nigeria.
- Offshore exploration expanded still further in every part of the world. (Read "Schlumberger and the Offshore," page 6.) At year end there were 260 offshore rigs and the number will increase during 1968. An estimated 25% of wireline service revenues in 1967 were from offshore operations. An offshore division of Schlumberger Limited was organized.
- Computer-analyzed logs led to wider use in each well of a series of complementary logs—integrated

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*Schlumberger crew in Egypt assembling equipment for a logging operation.*

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into a logging program.

- A new perforating tool, the Hyper Jet, was introduced with excellent results. In the United States, wireline revenues from completion operations in cased holes increased 20%.

In the United States service revenues increased moderately despite an 11.5% decrease in drilling from 37,881 wells in 1966 to 33,697\* in 1967. Much of the decrease occurred in Texas, Oklahoma, Louisiana, Illinois, Ohio and West Virginia.

The Middle East crisis temporarily increased the production rate but had no immediate effect on domestic drilling. Increased allowables raised production by as much as 1,000,000 barrels of oil per day during a three-month period.

Results achieved during the year are attributable mainly to:

- Increased Offshore Revenues
- Cased hole market gains
- Improved open hole logging tools

\*Figures from AAPG Committee on Statistics & Drilling.

used more widely, including the Dual Induction Laterolog, High Resolution Dipmeter, Formation Density Device and Sidewall Neutron.

The Gulf of Mexico off the Louisiana coast has become a major producing area. This region now is Schlumberger's largest operating center in the world. A new Louisiana Offshore Division was organized in mid-1967 to handle these operations and improve customer service.

Cook Inlet, an icy tidal bay off the south coast of Alaska, is rapidly becoming a major producing area. Schlumberger personnel and equipment doubled there during the past year. Two maintenance centers were opened at Anchorage and Kenai. Further growth is expected in 1968 and 1969.

In the cased hole market, revenues increased 20%. The Hyper Jet accounted for much of the increase. It is a new high-performance shaped charge for perforating wells to produce oil. Field tests in late 1966 showed that wells perforated with the Hyper Jet had improved flow rates without stimulation.



Income from High Resolution Dipmeters doubled in 1967. This tool gives more accurate readings on the angle or dip of formations. In addition it multiplies by a factor of 4 the number of measurements per foot. An electronic computer is necessary to process these data. The market will grow further in 1968 as more tools become available in the field.

Computer log analysis gained wider acceptance. (Read page 20 "Schlumberger and Digital Electronics.") Field magnetic tape units are being introduced in South Louisiana, Alaska and California. Similar to the unit which has operated in Hobbs, New Mexico, since 1966, they record logs on magnetic tape at the well. The taped information is telephoned to the 6050 EMR computer in Houston where computation is made.

The number of Dual Induction, Formation Density and Sidewall Neutron operations increased. These services are performed with new tools designed for greater accuracy. They facilitate visual interpretation by the field engineer at the well site and permit computer analysis when warranted.

Current United States trends are expected to continue through 1968. Land drilling will decrease further, but offshore drilling will increase. The oil industry recently paid over \$600 million for leases offshore California. Additional sales are scheduled for leases offshore Texas and Western Louisiana.

In Canada revenues increased 12% although drilling was 5% under the prior year. A greater percentage of wells was drilled in Northern Alberta, particularly in the Rainbow Lake and Keg River region. These wells are deeper and require more logging services. Dipmeter and cased hole operations increased substantially. With the introduction of Sidewall Neutron logging early in the year, all of our newest logging services were available in Canada. There is a growing use of these services in full logging programs for each well.

In Central and South America drilling declined but our activity and revenues remained virtually unchanged for two reasons: the continued high volume of remedial work in producing wells and the introduction of new logging tools,

particularly the Borehole Compensated Sonic, the Dual Induction Laterolog and the Proximity device.

Activity in Venezuela did not improve. The Middle East crisis hardly had any effect on drilling as no new concessions have been granted since 1957. Development drilling increased late in the year, however, and this trend should be sustained during 1968.

Activity declined in Colombia, principally as the consequence of unfavorable legislation.

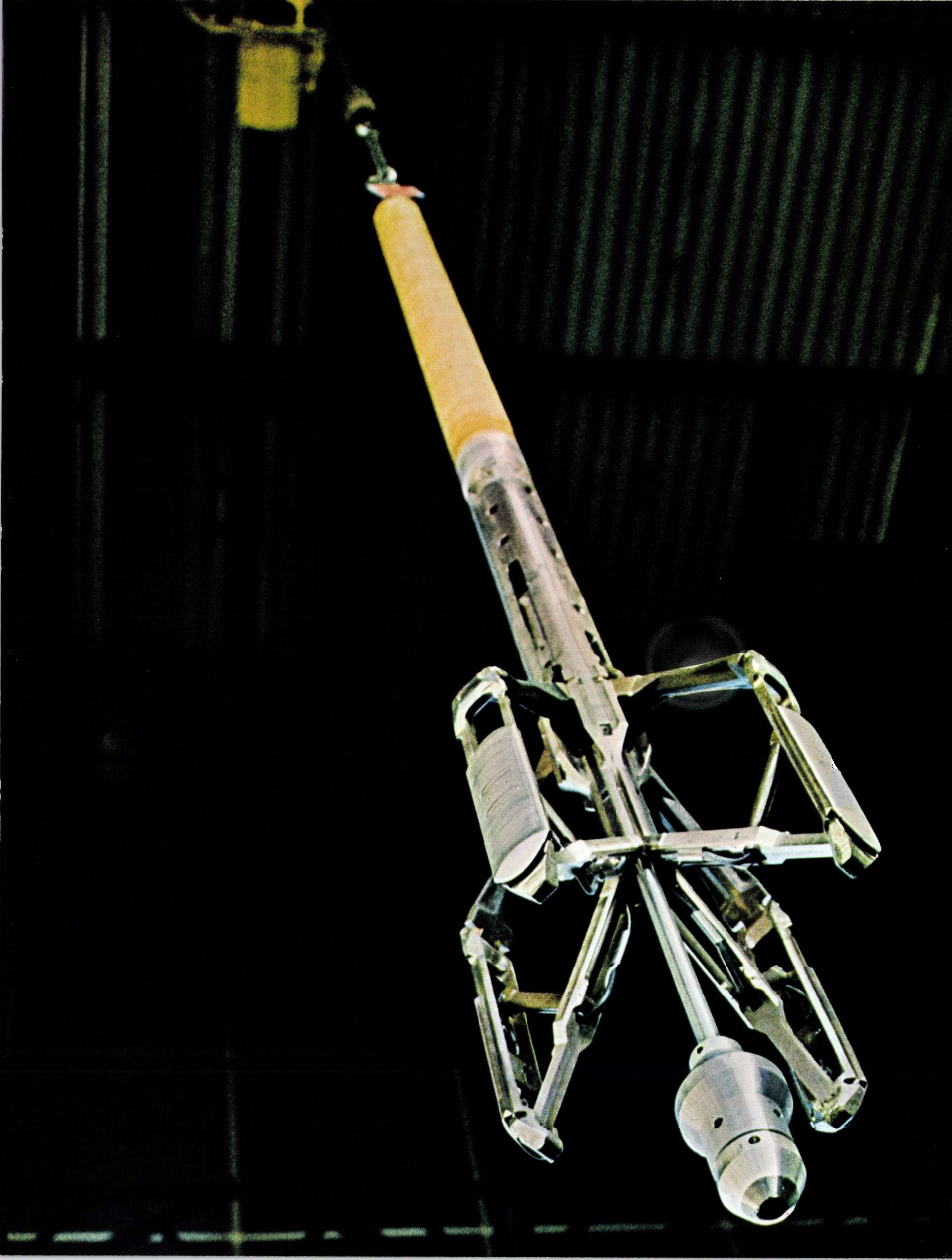
Important discoveries were made in the jungles of Northeast Ecuador near previous discoveries in the Putumayo region of Colombia.

Stepped-up development drilling in Peru resulted in higher revenues.

In Argentina a new law was enacted which permits concessions to foreign companies. The national oil company kept the prime land areas but some

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*High Resolution Dipmeter. From the four arms of this well logging instrument, electrical signals are recorded to determine the dip angle of underground formations.* →





land and offshore areas are being submitted for bids. The present improved political and financial stability will probably attract foreign capital.

Revenues increased moderately in Bolivia and Chile while remaining substantially unchanged in Trinidad and Central America.

In 1968, increased activity is possible in Argentina, Venezuela and Ecuador.

In the Eastern Hemisphere exploration for oil has kept a remarkable momentum; it is significant that despite the Egypt-Israel conflict and the prolonged upheaval in Nigeria, operating revenues increased 6%.

The civil war in Nigeria shut down operations for about three months. Drilling in midwest Nigeria around Warri resumed in October. However, in the province of Biafra where the main activity was located near Port Harcourt, there is no indication that drilling will be resumed in the near future.

The short war between Egypt and Israel had but a limited effect on overall operations in the Middle East.

Activity in Egypt, and to a lesser extent in Libya, was, however, seriously curtailed for three weeks. The Middle East is the largest wireline operating area in the Eastern Hemisphere.

Offshore operations continued to expand. An estimated 85 offshore rigs were active at the end of the year compared with 65 at the end of 1966. Further growth is expected with over 100 offshore rigs operating in 1968.

There are three major growth areas with special offshore emphasis: 19 offshore rigs were operating in the North Sea at the end of 1967; in the Far East the number has increased to 7 and will reach about 14 at the end of 1968; in Cabinda, off the west coast of Africa, significant discoveries were made and 3 rigs were drilling offshore early in 1968. In addition exploration and development prospects are encouraging in the Netherlands sector of the North Sea, and the Adriatic Sea, offshore Italy.

As in North America, the most significant development of the year was the introduction of a computer analysis service. This has received good customer acceptance and is

responsible for increases in the sale of porosity logs such as Density, Neutron and Sonic. Log interpretation programs have been made for Nigeria and the Middle East. Several others are under development and should be introduced in 1968.

In October, 1967, a new EMR 6050 computer was installed at the engineering center in Clamart, near Paris. This scientific computer is used for dipmeter computation and computed log analysis.

### **Johnston Testers**

Johnston Testers had increased profits in 1967. A number of new tools were introduced and significant improvements were made on some existing tools. Revenues increased 8% over the preceding year despite lower U.S. drilling.

New tools introduced during the year included the Bobcat Retrievable Bridge Plug, a Full Opening Multi-Valve, a complete line of Bumper Subs and a new drill stem test tool

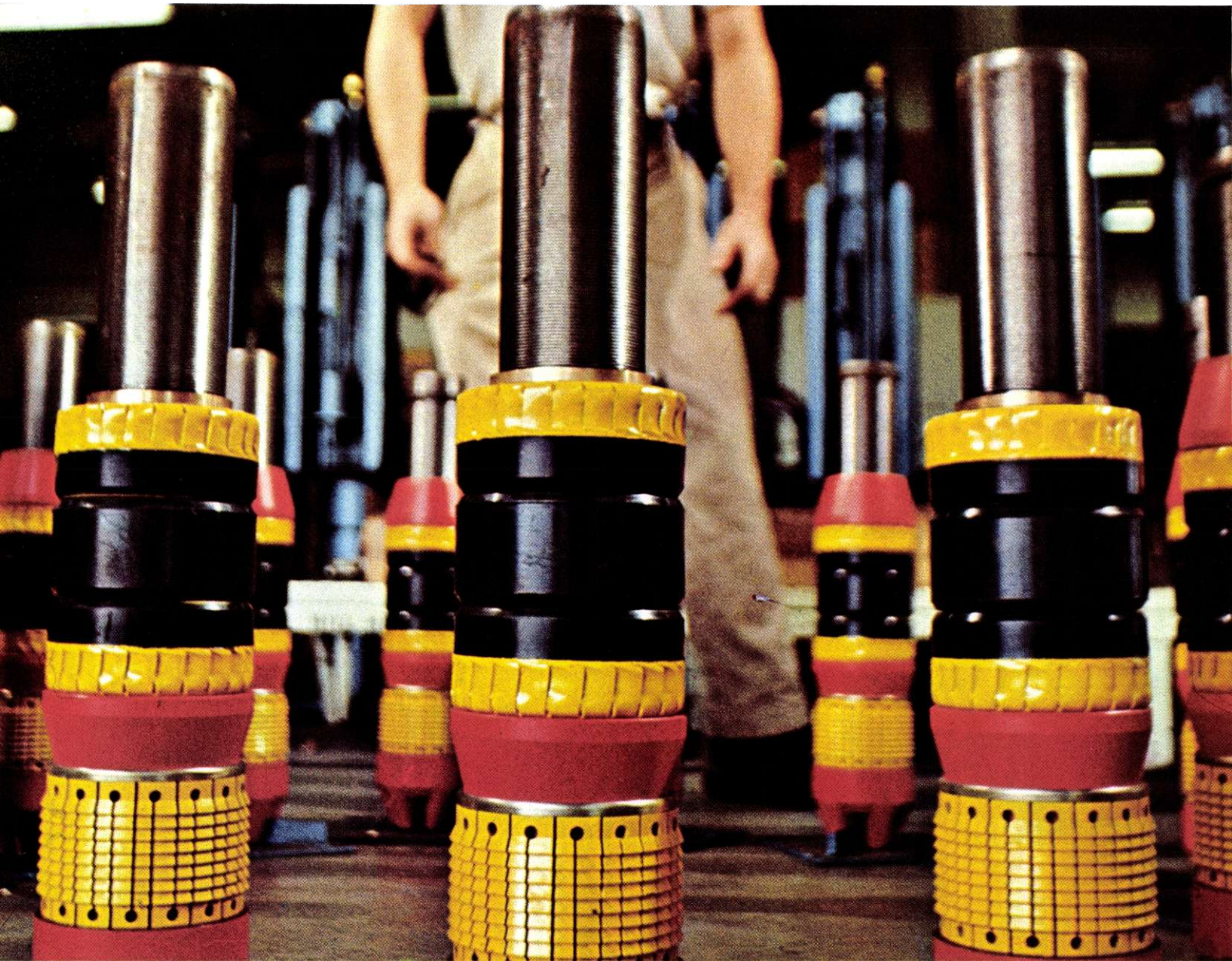
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*"Fish-eye" view of a logging tool being lowered into test well at Houston engineering center.*

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providing detailed data on well fluids and pressures in cased holes. They met with good customer acceptance.

Drill stem testing interpretation methods were improved, permitting better evaluation of reservoirs and production rates. A new drill stem test packer was introduced which makes it possible to efficiently test uncased drill holes up to 12¼" in diameter. Better hydraulic jars in several sizes were placed in service.

### **Forex**

Forex, a drilling subsidiary operating primarily in Europe and Africa, increased revenues and profits. Activity was strong in Libya and improved over the previous year in France, the Sahara and Tunisia. This was partly offset by the civil war in Nigeria which brought operations in that country to a standstill.

Activity expanded in Brazil and a new compact offshore rig, "Unifor", was placed in service in the North Sea, both in partnership with another company.

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*Assembly of Johnston Testers Wasp permanent bridge plugs used for oil well completion, production and secondary recovery.*

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Neptune, a 50 per cent owned subsidiary of Forex, continued offshore drilling with one rig in the Bay of Biscay and a second which moved from the North Sea to the Adriatic Sea. It also operates two tenders in the Persian Gulf. Construction of a semi-submersible rig for Neptune at an estimated cost of \$10 million was begun late in 1967.

Schlumberger increased its ownership of Forex common stock from 54 to 66 per cent.

### **Plastic Applicators**

Plastic Applicators was organized in November 1945 to apply baked-on plastic coatings to industrial equipment used in the chemical and process industries. In 1955 the company built a plant in Houston, Texas for applying baked-on plastic coating to the inside of oil field pipes. During the next five years, additional plants were constructed at Harvey, Louisiana, Morgan City, Louisiana, and Odessa, Texas. In the same period, the company entered the field of non-destructive testing of oil field pipe. Total operating revenues have about doubled during the past five years and the company operates at a profit.

From 1960 to 1967, Plastic Applicators invested more than \$1.5 million in research and engineering. This resulted in the development of new plastic coating materials, highly automated application techniques, and the current Scanalog service for non-destructive testing of pipes.

The company will expand its non-destructive testing this year into new geographic areas. An industrial product coating plant at Houston was completed in February, 1968.

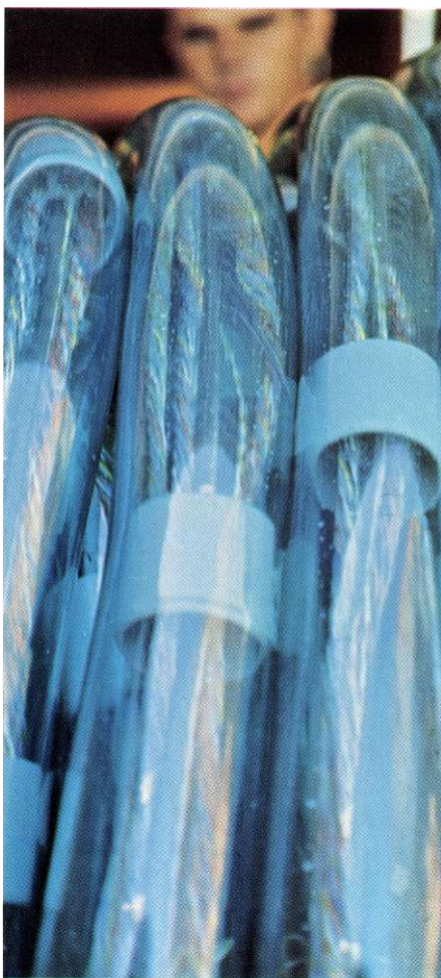
### **Vector Cable**

Vector cables are used to transmit data from sensor to recorder in such diverse activities as offshore seismic oil exploration, undersea scientific studies and underground nuclear explosions. The cable must transmit an accurate signal in the most rigorous environments, as in down-hole logging under high pressures and temperatures.

Vector revenues and profits in 1967 declined somewhat, as the seismic industry's recent marine cable build-up slackened.

Vector continues design work toward larger, longer, higher quality, and more versatile cabling systems. Field





*Oil filled streamer cable produced by Vector Cable Company for offshore seismic exploration. This cable can record very weak signals continuously even while towed behind a ship.*

tests began on a new ruggedized marine seismic cable to provide buoyancy by a solid outer sheath of cellular polyethylene to complement oil-filled buoyant cables. Quantity production will start in 1968.

In 1967, Vector produced a special large diameter cable for oceanographic applications such as life-support servicing of deep-diving submersibles. A patent has been granted Vector for an electrical connector that can be engaged and disengaged in salt water, using the forced circulation of fluids to remove any salt water that might enter the cable system.

Vector cables were selected for Project Gasbuggy, the AEC experiment to test the economic and technical feasibility of increasing the availability of natural gas with an underground nuclear explosion. In this experiment, Vector cables are designed to block any interior migration of gases, thus preventing the surface escape of radioactive materials.

#### **Dowell Schlumberger**

This company, owned equally by Schlumberger and the Dow Chemical Company, performs a variety of services—cementing, acidizing,

fracturing, sand consolidation, formation testing, directional drilling and other well services—for the oil industry in the Eastern Hemisphere and South America.

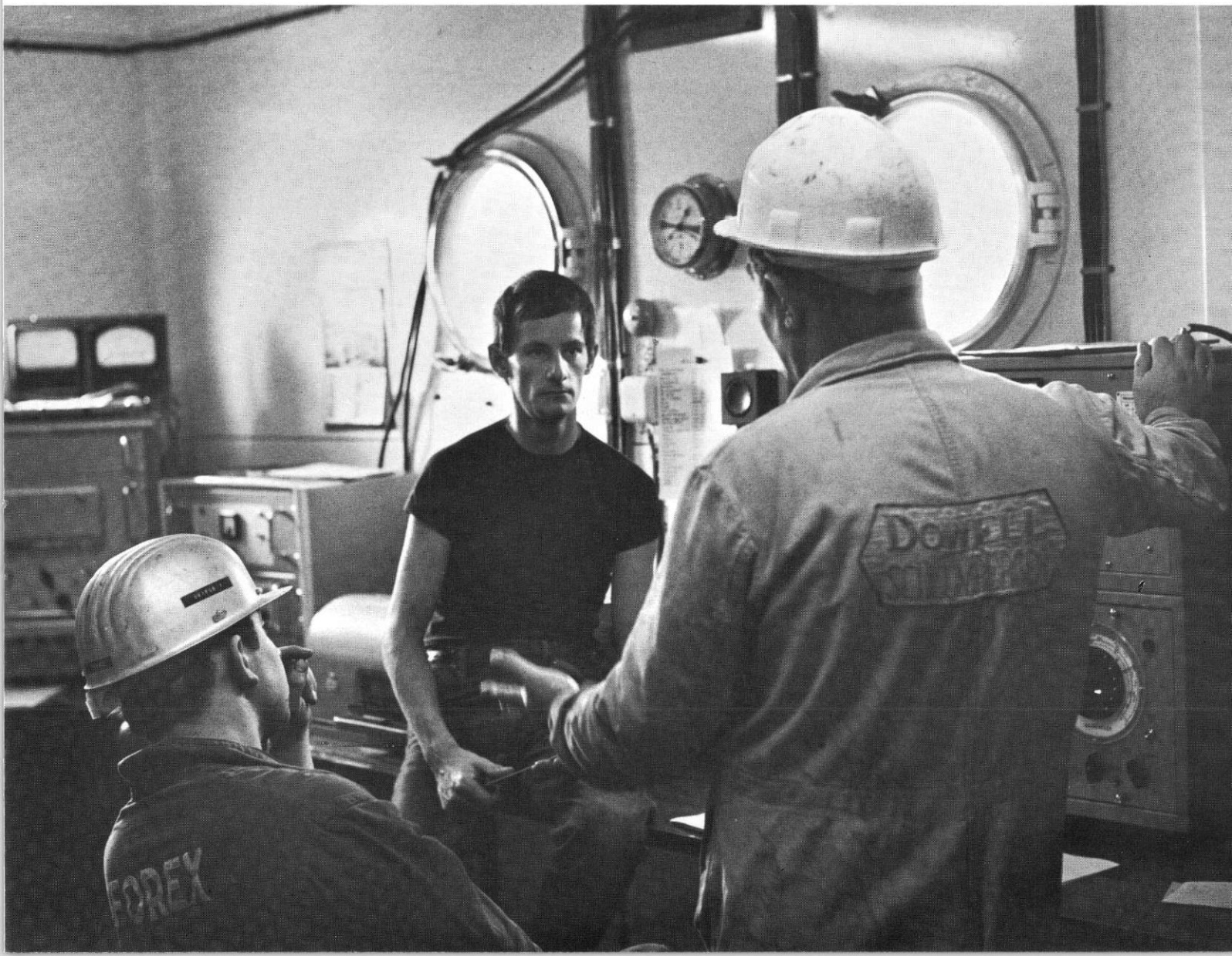
Revenues and net income increased again in 1967 continuing the growth this company has enjoyed since it was formed seven years ago. A slow down in South America was more than offset by increased Eastern Hemisphere activity, particularly in Europe, North Africa and Kuwait.

The build-up of operations in Kuwait and Brazil started in 1966 continued in 1967. New centers were opened in Iran and Australia. Fishing services (to loosen and retrieve tools stuck in the well) and directional drilling services were expanded in the North Sea, Nigeria, Brazil and Libya. Pipeline testing was begun as a new service in Europe. Compact turbine-powered pumpers, especially designed for offshore work, were used for the first time for fracturing operations in the North Sea.

This year the company plans to double its offshore units for cementing and stimulation work.

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*Dowell Schlumberger and Forex crew in control cabin of Unifor rig in the North Sea.* →





## Schlumberger and Digital Electronics

Fundamentally, Schlumberger is a company involved in measurement. Last year's Annual Report explained how most Schlumberger subsidiaries and divisions are engaged in one phase or another of a measurement system.

Perhaps the most important technical development in the last decade has been the growing importance of digital electronics, particularly the high speed digital computer. A vast accumulation of data, which would be unmanageable without the computer, can now be processed and interrelated. Frequent measurements of an action or phenomenon, if properly analyzed, lead to better understanding and control. As a consequence, the measuring system, too, must be adapted to provide not only more data but also more precise measurements.

Schlumberger is involved in digital technology whether it manufactures

laboratory instruments at Solartron, panel meters and recording instruments at Weston, or industrial control systems at Société d'Instrumentation Schlumberger. The use of digital electronics is increasing in the telemetry systems of EMR. One of the major developments of oil field wireline services, in the past three years, has been the changeover from analog manual log analysis, used since the origin of logging, to digital methods.

Obviously, Schlumberger must have digital capability: it needs the scientific background to comprehend this recent and fast changing technology and, whether in instrumentation or logging, the engineering capacity to participate creatively in the progress of this technique.

To have the best engineering and the best equipment, Schlumberger decided to build and sell its own scientific computers. This activity has progressed in two directions, to satisfy the growing demand of customers for scientific computers and to respond to Schlumberger's own requirements.

## Growing Demand for Digital Computers

The growing demand for digital computers is widely recognized from their application to general business and accounting requirements. However, the market for digital computers is not limited to these applications. There is also a growing requirement for high speed specialized digital computers to fill the needs of scientific, engineering, and industrial control applications. It is to these latter requirements that Schlumberger has directed its EMR computer activity.

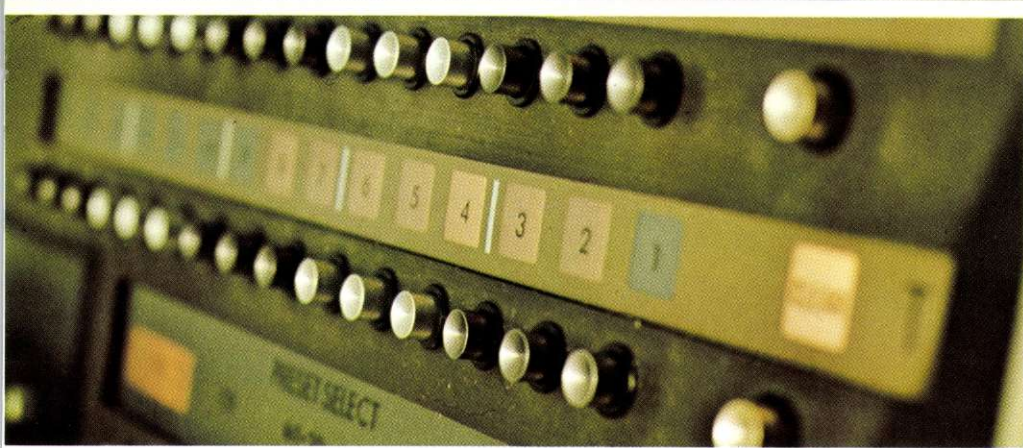
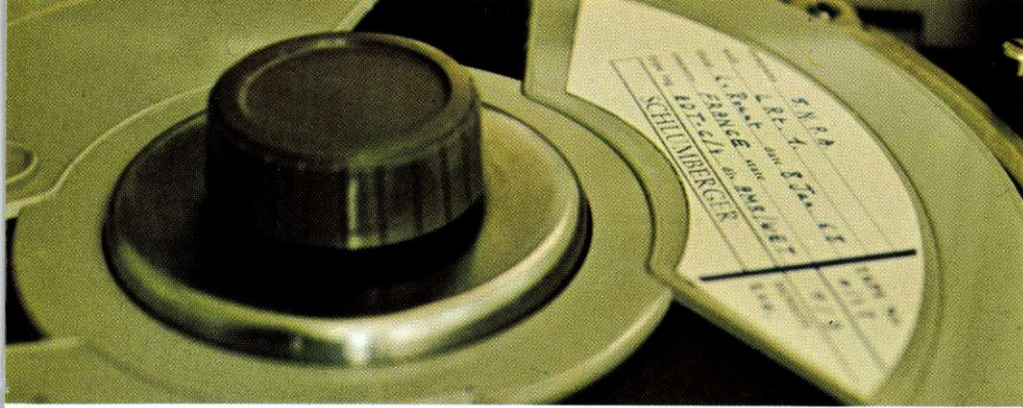
□ In 1967, Schlumberger EMR Telemetry delivered to Lockheed-Georgia the first of seven airborne telemetry packages, to help flight-test the U.S. Air Force/Lockheed C5 jet transport. Each of these will be used to monitor up to 500 test-points for wing flutter, air pressures, control settings, velocities, temperatures and stresses.

The data from each test point is recorded on magnetic tape in the

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*Schlumberger logs on magnetic tape for computer analysis.* →







airplane for later processing and analysis by an EMR Automatic Data Reduction System at Lockheed's ground station. At the same time, selected test data can be telemetered directly from the airplane to a computer on the ground for real-time processing and margin-of-safety calculations. This system is a unique combination of EMR telemetry equipment and an EMR computer—the sophisticated scientific computer which Schlumberger manufactures.

- Geophysical scientists are now using our computers to process their seismic data, to minimize misleading signals and indicate strata that may bear oil.
- Atomic laboratories buy our computers to analyze the results of nuclear experiments. Manufacturers buy them for process control.
- Lockheed-Sunnyvale ordered 16 to form an automated test and checkout system for the Navy's Poseidon missile.

### **Schlumberger's Own Requirements**

At a drill site in eastern New Mexico, a blue tape-reel revolves inside the instrument cab of a Schlumberger

field truck. The truck is a mobile laboratory equipped with instruments used to measure certain physical parameters of the formation through which the wellbore passes. Data from five such Schlumberger logs or formation surveys are recorded on magnetic tape.

The reel is then rushed to a Schlumberger-built transmitter at the Schlumberger office in Hobbs, N. M. Within minutes, a Houston computerman removes a completed tape from his receiver. This is fed into a Schlumberger-built EMR computer and analyzed according to a program written by Schlumberger specialists for the conditions prevailing in this field.

The result is transmitted back to the Hobbs engineer. In a few minutes his equipment records a computer-drawn Lithology-Movable Oil Plot. He can now give the oil company a graphical representation of the lithology (the kind of rock), the porosity (gas or liquid-filled space) at every depth in the well, and the movable hydrocarbon.

This is computerized log processing, which may be about to revolutionize oil and gas well analysis. For years reservoir analysis required visual

juxtaposition of several logs from a given well. This was a time-consuming and basically qualitative process. The electronic computer now enables the fast merging of the data from a series of logs. The result is more useful quantitative information on reservoir characteristics.

The computer quickly solves thousands of simultaneous equations on many combinations of logs. It can make comparisons that would take engineers days or weeks. It swiftly puts the results in the hands of an oil firm's geologist for production decisions. "The way to handle oil data in today's world is by electronic computer," says one veteran oil-seeker. "And finding and producing oil has become a data-handling business."

Schlumberger's own computer-equipped Log Processing Centers are now operating in Houston for the North American market and in Paris to serve Africa and the Middle East. Within three years several more Centers will be added to form a world-wide network.

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*EMR computer in operation at the Schlumberger log processing center in Paris.*









## Electronics and Instrumentation

There are six principal manufacturing units in Schlumberger electronics and instrumentation: Electro-Mechanical Research (EMR), Weston Instruments, Weston Components and Heath with headquarters in the United States; Solartron in Great Britain and Société d'Instrumentation Schlumberger (SIS) in France. In addition to their own marketing activities, they are all supported by the Schlumberger European Marketing Division.

### Electro-Mechanical Research

Total revenues increased with sales gains in digital computers and telemetry equipment. Losses reflected the high cost of computer development, software support and deferral of revenues associated with computer leases.

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*EMR Pulse Code Modulation telemetry system in the foreground, will record flight test data of U.S. Air Force/Lockheed C5 jet transport for analysis by ground processing stations.*

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At *EMR Telemetry*, Sarasota, Florida, the effect of reductions in NASA procurement was offset by intensified efforts in the Defense market for telemetry and data acquisition. EMR introduced two new series of standard telemetry instrumentation in 1967—a digital line to meet higher standards in pulse code techniques and an analog line to strengthen EMR's established position in frequency modulation techniques. Shipments of S-band (super-high frequency) telemetry transmitters for the Nike-X anti-ballistic missile program also began in 1967. This transmitter sends flight data from test missiles to ground stations for processing.

The Telescope "experiment package," designed for astronomy experiments in space aboard the Orbiting Astronomical Observatory, was shipped to NASA for final testing and mating with the satellite. Launch is scheduled for July, 1968.

*EMR Computer*, Minneapolis Minnesota, received substantial orders for the Advance 6130 computer, a "third generation" solid-state computer for scientific and

engineering applications. Deliveries began in early 1968. Shipments of the current line, the Advance 6000 series, increased over the prior year. More than fifty EMR computer systems have now been installed.

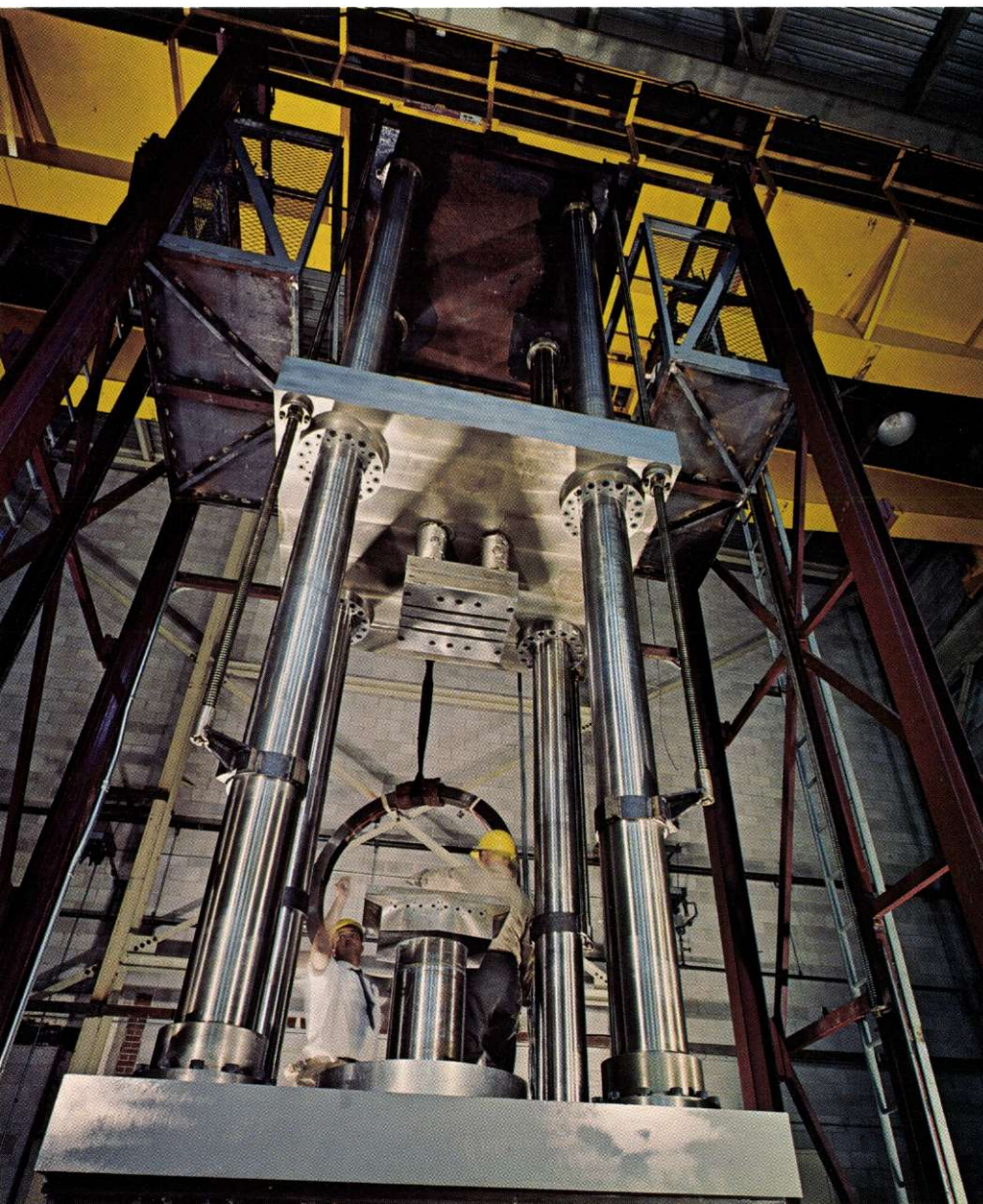
EMR has nearly completed the delivery of sixteen series 6000 computers to Lockheed-Sunnyvale. These comprise an automated test and check-out system for production of the Navy's Poseidon. The Poseidon will replace Polaris as the new submarine-launched ballistic missile.

Three facilities of EMR Computer were closed and their activities moved to the main plant which was modernized and expanded with a 68,000 square-foot addition, at a cost of \$1.5 million.

*EMR Aerospace*, College Park, Maryland, is now developing under contract a digital on-board processor for the future NASA Small Standard Satellite. The SSS will serve as a versatile unmanned space laboratory, and the EMR-designed data system will be programmable to accommodate a wide variety of space experiments.

Photomultiplier tubes from *EMR Photoelectrics*, Princeton, New





Jersey, were used in the Mariner satellite to measure ultraviolet radiation from Venus.

At *EMR Magnetics*, Van Nuys, California, the initial results were encouraging in a program to increase sales in new markets for EMR high-performance magnetic filters.

### **Weston Instruments**

Weston Instruments has its main operations in plants at Newark, New Jersey; Hatboro, Pennsylvania; Lexington, Massachusetts; Wichita, Kansas and Puerto Rico. Product lines include meters, meter relays and other electrical measuring devices; electronic standards and test instrumentation; electro-hydraulic controls, actuators and servo-controlled systems; and indicating instruments for the aerospace and general aviation markets.

Revenues remained at the 1966 level, despite a six-week strike at Newark. Non-recurrent losses, however, resulted largely from the Newark strike and write-offs at the recently

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*Weston fatigue machine is used to study the effects of stresses on large sections of aircraft structure. It can apply both tensile and compressive loads of 150,000 pounds as often as twenty times per second.*



acquired Wichita plant, formerly Carruth Laboratories. Expenditures for research and engineering were maintained at previous levels in support of new product programs.

Weston Instruments introduced in 1967 the industry's first all-electronic digital panel meter, with strong initial customer interest. It is designed for console or control panel installations; it offers electronic accuracy and easy-to-read digital presentation as an alternate to the traditional "clock-face" panel meter.

A new Meter Calibrator and a Continuously Variable Oscillator were introduced. The CVO, which generates a very pure, very stable test signal, eliminates the need for frequent calibration and saves designers' time.

A much improved Transfer Function Analyzer is under design for dynamic analysis applications and will be released this year.

Design was completed for an engine monitoring instrument cluster to fit a variety of general aviation instrument panels. This unit utilizes modular construction and follows latest trends toward edgewise instead of clock-face indicators.

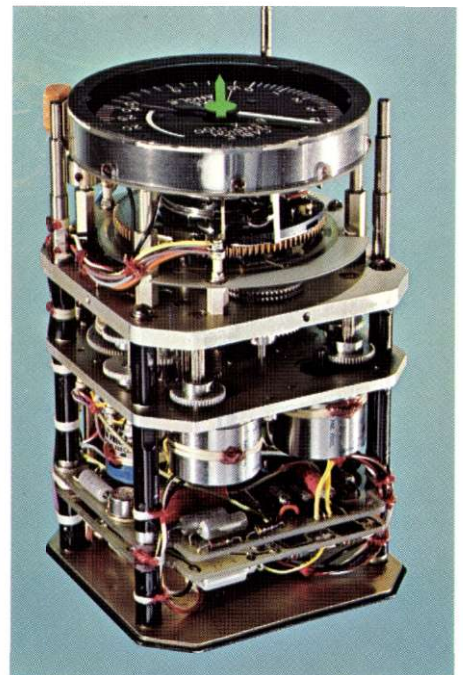
Weston Instruments continued its program of building new plant

facilities. At Hatboro a building was constructed for the assembly and check-out of large environmental test systems and equipment. The facility is a high-bay area containing a 600-ton platform of concrete to accommodate the energies developed in the final test of the large hydraulic shaking machines and fatigue testing systems.

### Weston Components

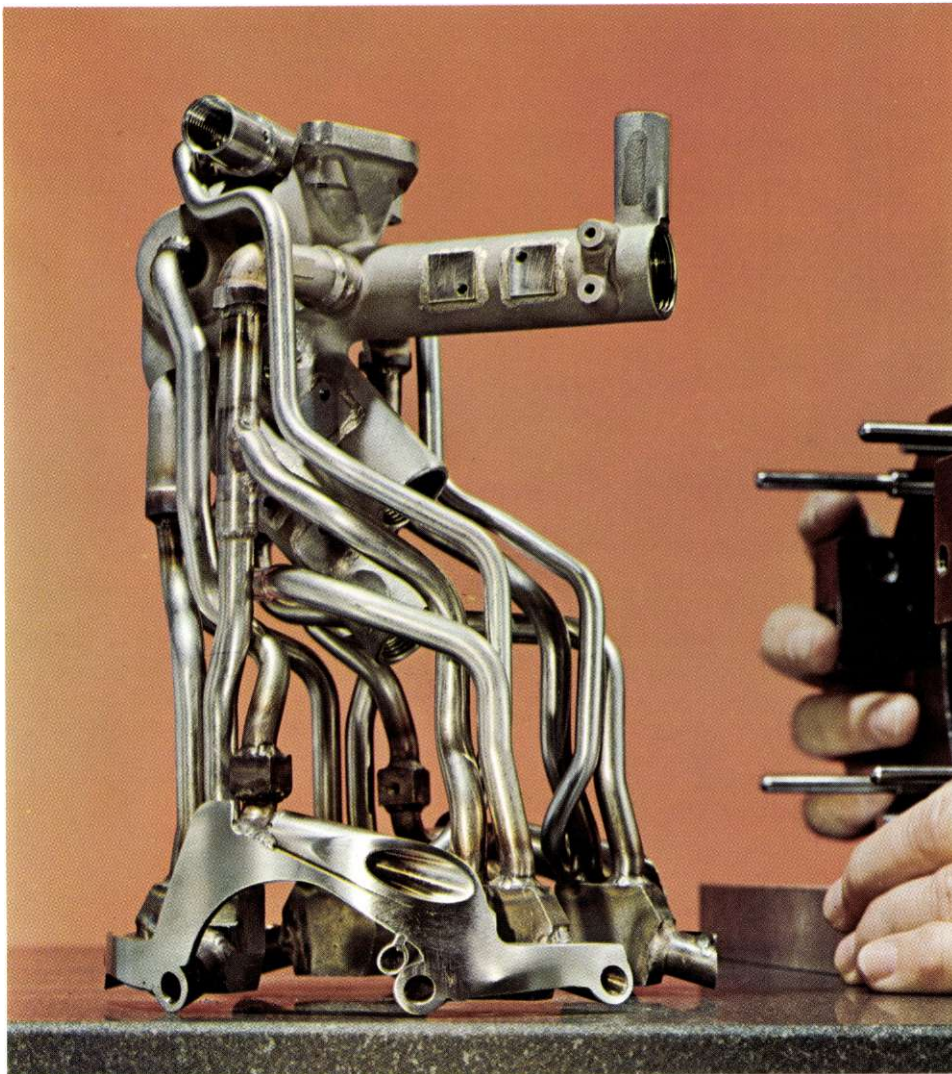
Weston Components with plants in Archbald and Worcester, Pennsylvania, and Poughkeepsie, New York, experienced a general softening in product sales, but government contract awards increased substantially. Shipments remained about level with the prior year, while the order backlog at year end increased 35% from 1966. Profits decreased slightly.

Sales of precision potentiometers and rotating components (miniature servo motors, synchros and resolvers) were lower because customers were liquidating high inventories. Industrial X-ray gauge sales remained on target with significant new orders from the automobile industry, where Weston's thickness gauges are being used in material quality control applications.



*Weston cable tension indicator used on a helicopter—one of many instruments produced for aerospace and aviation applications.*





Samples of the new Cermet potentiometers have been released and shipments to customers will begin in 1968. The "Cermet" type (from the words ceramic and metal) augments Weston's established wire-wound potentiometer line. Development programs call for a full range of sizes and types for both the aerospace and industrial/commercial markets.

Orders increased substantially for the production of Westinghouse designed computers used with the AN/AWG-10 Multi-Mission Weapons Control System on the McDonnell Douglas F-4 Phantom Aircraft. The Division received significant orders from General Electric for airborne radar system assemblies and from Martin-Marietta for the manufacture of hot gas valve assemblies for missile guidance systems.

Capital expenditures of approximately one million dollars were made in 1967 for new equipment and facilities improvement.

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*Hot gas valve for missile guidance system. Present contracts at Weston Components call for substantial deliveries this year.*

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## Heath

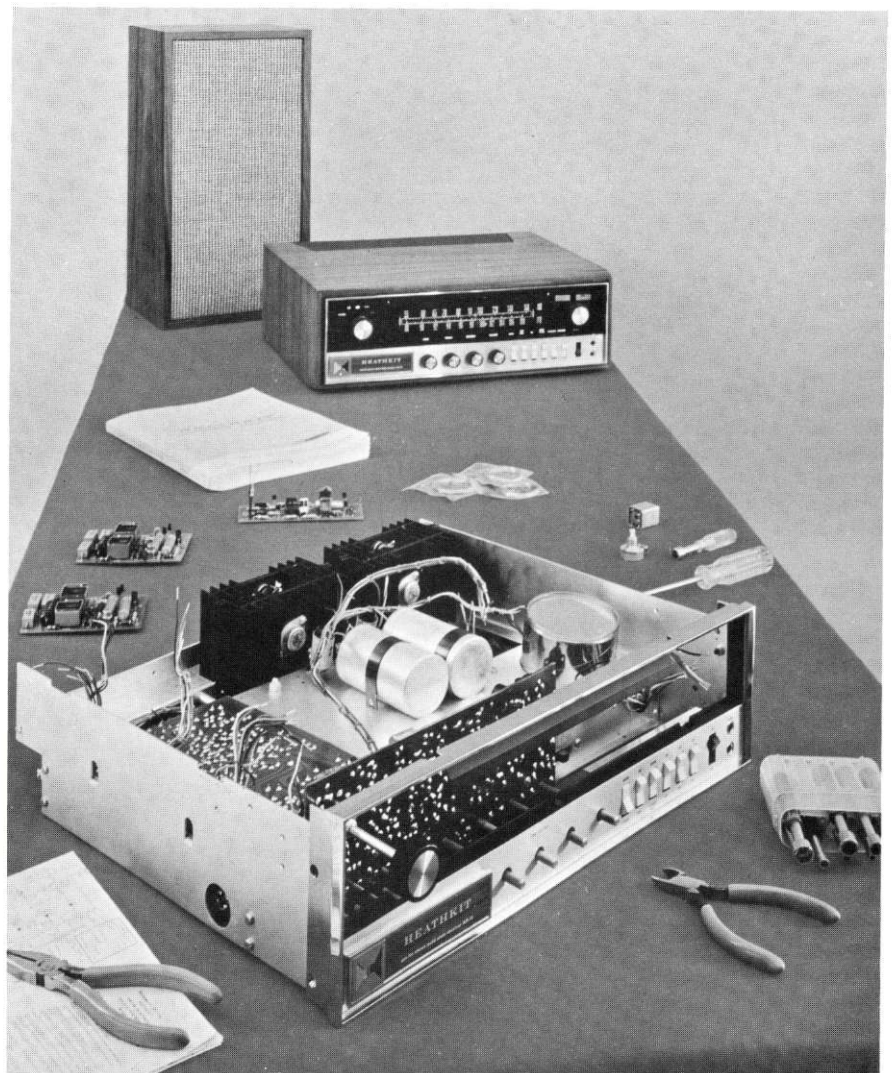
Heath Company, the world's largest producer of electronic equipment in kit form, had an excellent year. Sales and profits increased. Investments for new product development were higher.

In home entertainment there were marked gains in sales of color television kits now offered by Heath with picture tubes in the popular 295, 227 and 180 square inch sizes. The critical circuits of each kit are factory built, aligned and tested. The balance of the assembly can be completed by the kit builder in about 25 hours. Sales of musical instruments (electronic organs, guitars and amplifiers) increased.

Audio equipment sales were boosted with the introduction of a new solid-state AM/FM deluxe stereo receiver, the AR-15, which won outstanding recognition in the high fidelity press. The release of two other stereo receiver kits at popular prices enables Heath to continue to satisfy

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*The best selling Heathkit at year end: the AR 15 stereo receiver. Some of the components and tools are seen near an unfinished set. Completed receiver seen in background.* →





the full range of stereo customer requirements.

Other product lines showed gains, except for citizens' band communication and marine electronics.

A major effort was made to expand Heath's education and scientific instrumentation line. These instruments are factory assembled and tested. In December, initial shipments of a laboratory monochromer were made. This will be the basic unit or module in spectroscopic instrumentation.

More than 160,000 square feet were added to the Benton Harbor plant for additions to the engineering, production and warehouse facilities. The cost of building and equipment was two million dollars.

Stores for retail sales and services were opened in New York City, Washington, D.C., Cleveland, Milwaukee and Birmingham, England. There are now sixteen such Heathkit electronic centers in addition to the direct mail operation.

### **Solartron**

Total revenues in 1967 were slightly below the record level reached in 1966, largely because of unsettled economic conditions in the United Kingdom and some softening in export markets. Results also were affected by costs incurred from the Chessington plant relocation. Activities at this plant were moved to the enlarged Farnborough headquarters, where modern administrative, engineering and production facilities now house all of Solartron's electronic operations.

In the area of electronic instrumentation, digital voltmeters and oscilloscopes for general research application continue to account for the major share of sales. Sales of the LM 1420 digital voltmeter since its introduction in 1964 reached 5000 units and aggregate revenues in excess of \$13 million. A new all-digital Transfer Function Analyzer, which measures the dynamic response of a system under test, boosted sales of dynamic analysis equipment.

Development programs are underway to support Solartron's established position in electronic instrumentation. The increasing use of digital techniques to achieve greater accuracy in measurement and control offers new opportunities to integrate a number of different instruments into a test system.

In the systems area, orders for data logging equipment, analog computers, and radar simulators for civil and military applications exceeded the 1966 level. Significant export contracts were received from the U.S. Maritime Administration, the Turkish Navy and the Malayan Civil Air authorities. With large orders in 1967 from the Royal Air Force and for the new London Air Traffic Control Center, over 130 Solartron video-maps have

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*Solartron data logger for measurement and recording of industrial process data.*

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IDAS

SOLARTON

1900+1908

15 12 30 13

+1916



CHLUMBERGER

DEVIATION AMPLITUDE SENS PORTEUSE M SECTEUR GAMMES DISCRIMINATEURS MASSI	DEVIATION CANAL 1 0.40 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 5 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 2 0.56 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 6.4 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 3 0.73 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 11 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 4 0.96 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 14 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 5 1.3 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 20 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 6 1.70 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 25 Hz RETARD ENTREES SORTIE AMPLITUDE
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CHLUMBERGER

DEVIATION AMPLITUDE SENS PORTEUSE M SECTEUR GAMMES DISCRIMINATEURS MASSI	DEVIATION CANAL 7 2.30 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 35 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 8 3 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 45 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 9 3.9 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 58 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 10 5.4 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 81 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 11 7.35 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 110 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 12 10.5 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 160 Hz RETARD ENTREES SORTIE AMPLITUDE
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CHLUMBERGER

DEVIATION AMPLITUDE SENS PORTEUSE M SECTEUR GAMMES DISCRIMINATEURS MASSI	DEVIATION CANAL 13 14.5 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 220 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 14 22 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 330 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 15 30 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 450 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 16 40 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 600 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 17 52.5 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 790 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 18 70 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 1050 Hz RETARD ENTREES SORTIE AMPLITUDE
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CHLUMBERGER

DEVIATION AMPLITUDE SENS PORTEUSE M SECTEUR GAMMES DISCRIMINATEURS MASSI	DEVIATION CANAL 19 93 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 1395 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 20 124 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 1860 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL 21 165 KHz $\pm 7.5\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 2475 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL A 22 KHz $\pm 15\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 660 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL B 30 KHz $\pm 15\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 900 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL C 40 KHz $\pm 15\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 1200 Hz RETARD ENTREES SORTIE AMPLITUDE
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CHLUMBERGER

DEVIATION AMPLITUDE SENS PORTEUSE M SECTEUR GAMMES DISCRIMINATEURS MASSI	DEVIATION CANAL D 52.5 KHz $\pm 15\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 1600 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL E 70 KHz $\pm 15\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 2100 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL F 93 KHz $\pm 15\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 2800 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL G 124 KHz $\pm 15\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 3700 Hz RETARD ENTREES SORTIE AMPLITUDE	DEVIATION CANAL H 165 KHz $\pm 15\%$ SIGNAL PHASE TENSION DE SORTIE BALANCE 4950 Hz RETARD ENTREES SORTIE AMPLITUDE	VBE REF 100 Hz $\pm 15\%$ AJUSTER LA TENSION DE SORTIE AU MAXIMUM BALANCE
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been ordered for installation in twenty-four countries. The video-map generates a radar, map-like presentation of air traffic zones.

As a separate facility in Milford Haven, South Wales, the Fan Division of Solartron produces tangential fan mechanisms for domestic and industrial fan heaters. Order backlogs are at a new high. Construction was started on a 25,000 square-foot plant addition which will double present capacity.

### **Société d'Instrumentation Schlumberger**

Extensive reorganization moves to consolidate several previously acquired French instrumentation and electronic companies into a single operating organization began to show results. Total revenues increased and losses were reduced drastically. Additional steps have been taken to achieve a profit position in 1968 and a reasonable return from 1969 onward.

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*Control panels of a telemetry data reduction system manufactured by SIS for the French Flight Test Center.*

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Gains in *Applied Physics* laboratory and industrial transducer sales overcame some weakness in recorder sales. A new 40-channel ultra-violet photographic recorder is under development and scheduled for release in 1968.

The *Electronics and Components Division* increased sales of its studio broadcasting equipment; sales of potentiometers and other circuit components remained about level.

Sales also improved at the *Industrial Control Division*, which produces a line of industrial indicating, recording and control equipment and analytical instrumentation.

*Rochar* specializes in digital instrumentation, and 1967 sales of frequency counters and digital voltmeters increased.

Sales of *Tolana* magnetic tape recorders for specialized instrumentation applications also increased. *Tolana* airborne tape recorders will be used to record test flight data for the joint Anglo-French Concorde Super-Sonic jet.

SIS delivered a large-scale computerized data reduction system, incorporating EMR telemetry

instrumentation, to the French National Flight Test Center (Centre d'essais en vol). As another part of total integration effort, SIS activities in data acquisition, processing and recording are being more closely coordinated to achieve a stronger capability in test and measurement systems.

Consolidation of facilities has continued. Six small operating locations in the Paris area were closed and activities were moved to a modern 50,000 square-foot plant in Clamart.



### **European Marketing Division**

Continental Europe is a principal export market for the products of the Schlumberger electronic and instrumentation companies. To develop this market further by providing an effective local sales and service capability, a European Marketing Division (EMD) was created with headquarters in Paris. EMD consists of several sales and service companies established in principal market areas; it provides through its own staff direct local support for imported Schlumberger electronic and instrumentation products. Such organizations are located in France, Germany, Italy, Sweden, Austria and Switzerland. In other countries of Continental Europe, EMD operates through independent representatives and distributors. Sales of Schlumberger electronic and instrumentation products through EMD increased 25% in 1967.

In addition to its marketing activities, EMD has two manufacturing plants located in Germany, one in Munich, where a line of high-precision frequency synthesizer instrumentation is produced for the communication and aerospace markets; and another in Leverkusen, acquired in 1967, where a variety of industrial gauge equipment is produced essentially for the steel industry. Sales revenue at both plants increased in 1967.

### **Furniture Division**

The furniture division had a significant gain in profit over the prior year. Operating revenues of both Daystrom and Virtue rose substantially even though the furniture market in general was sluggish. Aggressive marketing, imaginative designing and manufacturing efficiency made this progress possible. The backlog at year end was almost 80% higher than at the close of the prior year.

The companies manufacture dinette sets, commercial furniture, and furniture for school and college classrooms and dormitories. Virtue and Daystrom each have large new plants containing manufacturing, warehouse, and office facilities. The Virtue operation is located in Compton, California and Daystrom is in South Boston, Virginia.

Both Daystrom and Virtue have been industry leaders in the use of polymer resins for chair and table parts. They are the only furniture manufacturers in the country with high-pressure plastic laminating presses.

This year both companies introduced the first complete dining room sets using high strength plastic for table legs and chairs with high-pressure laminate table tops. Their wood-like appearance and durability have given them good market acceptance.

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02000307 03000314 02160206 01170305 02130102  
02130302 02110104 06050211 03010211 02050503  
04040302 02040307 12110304 04150302 02040115  
07110310 22021106 16110407 11030311 02101105  
16120412 02140307 16150715 37120507 03020203  
17171010 06130104 13121600 17171113 11112503  
14161100 16170312 061111601 13141010 16010017  
10111303 07141106 04061110 06161315 07151105  
04100412 10050313 07070212 05050306 07050207  
02100303 02020104 01120215 05040402 03160203  
02100403 01040315 04020211 04100110 02110117  
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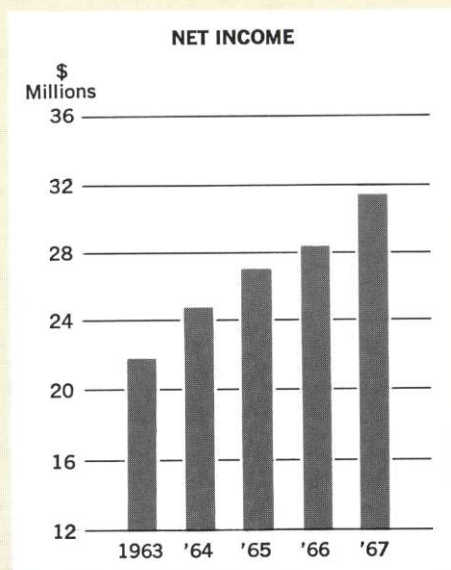


## Financial Review

### Net Income

Net income of \$31.5 million was a new high for the company—up 12% from the preceding year.

Earnings of \$4.12 per share compare to \$3.68 in 1966, based upon the average number of shares outstanding. Prior to 1967, earnings per share were stated on the basis of shares outstanding at the end of the year. For comparative purposes,



this report restates all prior years on the basis of average number of shares outstanding in each year.

Oilfield wireline earnings worldwide continued to grow. The Middle East crisis had little effect on the year's results but in Nigeria, an important income-producing area, civil war seriously curtailed operations during the second half of the year.

Electronic and instrumentation results for the year were adversely affected by a six-week strike at the Newark plant of Weston Instruments and inventory write-offs at Carruth Laboratories. At Electro-Mechanical Research (EMR), the computer business is still unprofitable but made substantial gains in sales; all other EMR units were operating profitably at the end of the year. Solartron results were adversely affected by substantial non-recurring costs due to closing the Chessington plant and combining its operations into newly-expanded facilities at Farnborough. Société d'Instrumentation Schlumberger (SIS), with a continued increase in sales and improvements in manufacturing, was able to achieve



a significant reduction in operating losses. Heath made an important contribution to the increase in net income.

The increase in "Other income" represents, in part, improvement in our share of earnings from 50%-owned companies (Dowell Schlumberger and Neptune). Included for the first time are the earnings of Neptune which were not significant prior to 1967. In addition, "Other income" includes about \$1 million of non-recurring gains on sales of securities and real estate.

On the other hand, 1967 expenses include a charge of about \$1 million to cover the anticipated cost of terminating an unprofitable product line.

Devaluation of the British pound in November 1967 and concurrent devaluations in certain other countries had no material effect on operating results.

The new United States Government program of restrictions on investments in other countries which became effective January 1, 1968

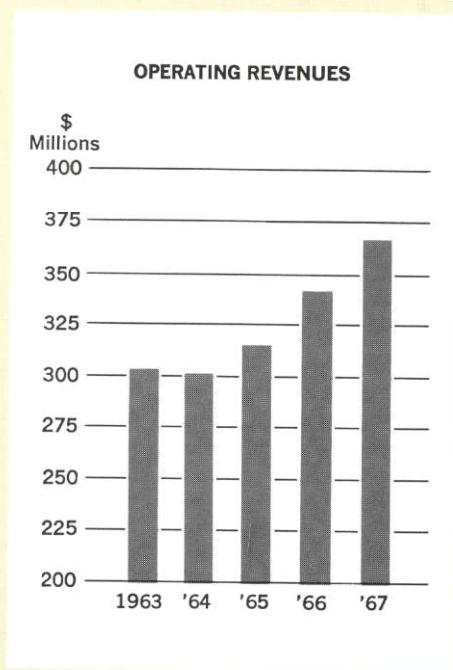
is not expected to have any serious impact upon Schlumberger investment and operating plans.

### Operating Revenues

Revenues in total and for each major business category were higher than previous records set in 1966 as follows:

	Millions		% Increase
	1967	1966	
Oilfield Services and Allied Products . . . .	\$188	\$178	6%
Electronic and Instrumentation . . . . .	159	145	10%
Furniture . . . . .	22	20	10%
	<u>\$369</u>	<u>\$343</u>	<u>8%</u>

Oilfield service revenues were higher in all major operating areas throughout the world. In electronic and instrumentation operations, sales were substantially higher at EMR, Heath and SIS.



### Taxes on Income

The effective tax rate, particularly in the second half of the year, was lower than in the preceding year primarily due to reduced losses of European electronic companies with no tax effect, and improved earnings from 50%-owned companies, which are recorded after tax.



### Common Stock

During the year 30,400 treasury shares were purchased, 65,929 shares were issued in connection with the acquisition of Plastic Applicators, 32,000 shares were issued in exchange for an equal number of shares of Forex and 31,575 shares were sold under employee stock option plans. At December 31, 1967, 305,318 shares remained in the treasury. Additional purchases of treasury shares have been made in 1968 and may continue at the company's discretion.

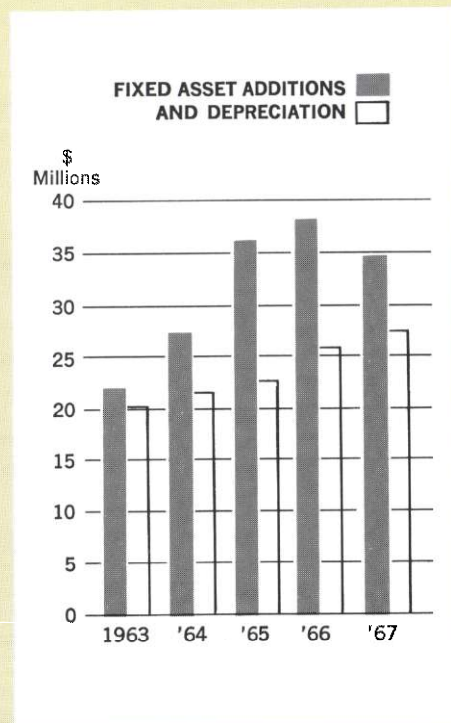
### Cash Flow and Capital Expenditures

Cash flow—earnings plus depreciation and amortization—was \$61 million or \$7.94 per share compared to \$56 million or \$7.26 per share in 1966.

Expenditures for plant and equipment aggregated \$35 million compared to \$38 million in 1966. In 1967, \$14 million was expended for oilfield technical equipment; \$21 million

was for manufacturing facilities—principally for electronic and instrumentation operations.

Depreciation expense in 1967 was \$26.8 million compared to \$25.4 million for the preceding year.



### Acquisitions and Investments

In June, the company completed the acquisition of the business and net assets of Plastic Applicators, Inc., a Houston-based pipe coating and inspecting company in exchange for 65,929 shares of Schlumberger treasury stock. Operating revenues for the year include \$3.1 million from Plastic Applicators subsequent to acquisition.

Early in 1967, an additional 32,000 shares of Forex were acquired in exchange for an equal number of Schlumberger shares, increasing the company's interest in Forex to 66%.



# Schlumberger Limited

(Schlumberger N. V., Incorporated in The Netherlands Antilles)  
AND SUBSIDIARY COMPANIES

## Consolidated Statement of Income

	Year Ended December 31	
	1967	1966
	(Stated in thousands)	
<b>Revenues</b>		
Sales and services .....	\$369,222	\$343,136
Other income .....	7,945	5,843
	<u>377,167</u>	<u>348,979</u>
 <b>Expenses</b>		
Cost of sales and services .....	247,029	225,748
Research and engineering .....	19,306	17,240
General .....	58,791	56,616
Taxes on income .....	20,503	21,226
	<u>345,629</u>	<u>320,830</u>
 <b>Net Income</b> .....	<u>\$ 31,538</u>	<u>\$ 28,149</u>
 <b>Net Income per share</b> .....	<u>\$4.12</u>	<u>\$3.68*</u>
 Expenses include—		
Depreciation .....	\$ 26,786	\$ 25,394
Amortization of intangibles .....	2,465	2,020
Interest expense .....	1,433	1,424

\*Restated

See notes to financial statements



## Schlumberger Limited

(Schlumberger N. V., Incorporated in The Netherlands Antilles)  
AND SUBSIDIARY COMPANIES

### Consolidated Balance Sheet

ASSETS	DECEMBER 31	
	1967	1966
	(Stated in thousands)	
<b>Current Assets</b>		
Cash .....	\$ 11,791	\$ 11,473
Time deposits .....	33,272	24,000
Marketable securities, at cost (approximately market) .....	29,607	40,720
Receivables, less allowance for doubtful accounts (1967—\$1,701; 1966—\$1,575) .....	80,755	74,337
Inventories, at cost or less .....	77,166	74,548
Other current assets .....	3,269	2,084
	<u>235,860</u>	<u>227,162</u>
<b>Investments and Long-Term Receivables</b> .....	17,182	15,034
<b>Fixed Assets</b>		
Plant and equipment, at cost .....	275,643	258,055
Less accumulated depreciation .....	<u>155,628</u>	<u>144,147</u>
	120,015	113,908
<b>Intangible Assets, less amortization</b> .....	10,179	11,504
<b>Other Assets</b> .....	1,581	4,072
	<u>\$384,817</u>	<u>\$371,680</u>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
<b>Current Liabilities</b>		
Accounts payable and accrued liabilities .....	\$ 41,055	\$ 42,115
Estimated liability for taxes on income .....	15,869	21,992
Short-term bank loans .....	9,086	10,319
Dividend payable .....	2,309	2,282
Portion of long-term debt due within one year .....	1,893	2,306
	<u>70,212</u>	<u>79,014</u>
<b>Long-Term Debt</b> .....	8,860	11,780
<b>Other Liabilities</b> .....	5,710	6,054
<b>Minority Interest in Subsidiaries</b> .....	6,463	8,080
	<u>91,245</u>	<u>104,928</u>
<b>Stockholders' Equity</b>		
Common stock—(outstanding 7,695,062 and 7,595,958 shares) .....	55,803	49,850
Income retained for use in the business .....	<u>237,769</u>	<u>216,902</u>
	<u>293,572</u>	<u>266,752</u>
	<u>\$384,817</u>	<u>\$371,680</u>

See notes to financial statements



## Schlumberger Limited

(Schlumberger N. V., Incorporated in The Netherlands Antilles)  
AND SUBSIDIARY COMPANIES

### Consolidated Statement of Stockholders' Equity

	Common Stock		Income retained for use in the business	
	1967	1966	1967	1966
	(Stated in thousands)			
Balance at beginning of year . . . . .	\$49,850	\$49,814	\$216,902	\$202,823
Cost of shares (1967—30,400; 1966—114,950) reacquired . . . . .	(204)	(748)	(1,471)	(4,903)
Proceeds from sale of shares (1967—31,575; 1966—17,773) to optionees . . . . .	1,197	784		
Exchanged for shares of Forex and business of Plastic Applicators (97,929 shares) . . . . .	4,960			
Net income . . . . .			31,538	28,149
Dividends declared . . . . .			(9,200)	(9,167)
Balance at end of year . . . . .	<u>\$55,803</u>	<u>\$49,850</u>	<u>\$237,769</u>	<u>\$216,902</u>

### Consolidated Statement of Source and Application of Funds

	Year Ended December 31	
	1967	1966
	(Stated in thousands)	
<b>Source</b>		
Net income . . . . .	\$31,538	\$28,149
Depreciation and amortization . . . . .	29,251	27,414
All other, net . . . . .	3,695	1,809
	<u>64,484</u>	<u>57,372</u>
<b>Application</b>		
Purchase of fixed assets, less retirements . . . . .	30,675	35,123
Business acquisitions and investments . . . . .	3,711	2,888
Treasury stock (purchases less sales to optionees) . . . . .	478	4,867
Dividends declared . . . . .	9,200	9,167
Reduction of long-term debt . . . . .	2,920	609
	<u>46,984</u>	<u>52,654</u>
<b>Net Increase in Working Capital . . . . .</b>	<u>\$17,500</u>	<u>\$ 4,718</u>

See notes to financial statements



## Notes to Financial Statements

### Principles of Consolidation

The consolidated financial statements include all majority-owned operating subsidiaries and present the consolidated results of operations and financial position after eliminating intercompany transactions and providing for minority interests. The minority interest of \$0.8 million in 1967 and 1966 income is included in general expenses. All items recorded in currencies other than United States dollars are translated at current rates except for fixed assets, investments and inventories which are translated at historical rates.

### Long-Term Debt

Long-term debt includes \$5.3 million of 5¼% debentures, due in 1980, which were assumed through an acquisition in 1962, and \$3.6 million of other debts payable by various subsidiaries to banks and insurance companies. The indenture covering the debentures and a loan agreement with an insurance company contain certain restrictive provisions, but the restrictions are not significant in relation to the consolidated financial statements.

### Taxes on Income

Amounts reflected in the balance sheet for taxes on income are considered to be adequate for all taxes applicable to earnings to date. In accordance with past practice, no provision has been made for income

taxes which would be payable in the event that undistributed earnings of subsidiaries included in consolidated income retained in the business are remitted to the parent company as dividends. In view of the fact that dividends are generally paid out of current earnings, no such provision is considered necessary.

### Stock Options

Options granted to key employees to purchase 226,837 shares of common stock at prices ranging from \$27 to \$58 per share were outstanding at December 31, 1967. The options granted beginning with 1964 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. Those granted prior to 1964 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. At December 31, 1967, options to purchase 163,799 shares were exercisable.

During 1967, options for 25,350 shares were granted, options for 31,575 shares were exercised at prices ranging from \$27 to \$51 per share and options for 1,125 shares terminated.

### Common Stock

Common stock is carried at the stated value of issued shares increased by proceeds from sales of treasury shares and reduced pro-rata for shares reacquired. Any excess of cost of reacquired shares over the pro-rata amount is treated as a reduction of income retained for use in the

business. At December 31, 1967 and at December 31, 1966, there were 8,000,380 issued shares. Of the issued shares, 305,318 and 404,422 shares were held in treasury at December 31, 1967 and December 31, 1966, respectively.

### 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 significant liability.

Receivables discounted with recourse were \$5.2 million at both December 31, 1967 and December 31, 1966.

### Supplementary Information

Time deposits and marketable securities are collectible mainly in United States dollars. The securities consist of commercial paper and obligations of the International Bank for Reconstruction and Development and of various governments. Total interest income was \$3.6 million in 1967 and \$3.9 million in 1966.

Inventories are stated primarily at moving average or standard cost, less allowance for obsolescence. They comprise \$20 million of operating materials and supplies for oilfield services and \$57 million applicable to manufacture of electronic equipment and other products.

Investments include \$12.4 million representing investments in 50%-owned companies. It is Schlumberger's policy to state such investments at equity in the under-



lying net assets and to report as income its share of profit when earned. Other investments are stated at cost.

Depreciation of plant and equipment is recorded by a declining balance or a straight-line method over the estimated useful lives of the assets.

Cost and accumulated depreciation for major plant and equipment classifications are shown below.

Intangible assets represent largely the excess of investments in consolidated subsidiaries over related tangible assets, and intangibles related to investments prior to 1966 are being

amortized in the main over ten-year periods. On subsequent investments, intangibles are not amortized unless and until such time as the value is deemed to have diminished; the effect of this change was insignificant.

Other liabilities include a deferred credit to income of \$960,000 relating to gain on a 1964 installment sale of land.

The company and its subsidiaries have several pension and other deferred benefit plans covering substantially all employees, including certain employees in foreign countries. Total expense of such plans in both 1967 and 1966 was \$6.7 million. Pension plans are fully funded with respect to past as well as current services.

	Cost	December 31, 1967		December 31, 1966
		Accumulated Depreciation	Cost less Depreciation	Cost less Depreciation
		(Stated in millions)		
Land	\$ 7.0	\$ —	\$ 7.0	\$ 6.1
Buildings & Improvements	65.3	26.8	38.5	34.9
Machinery & Equipment	203.3	128.8	74.5	72.9
	<u>\$275.6</u>	<u>\$155.6</u>	<u>\$120.0</u>	<u>\$113.9</u>

## PRICE WATERHOUSE & CO.

To the Board of Directors of  
Schlumberger Limited:

60 Broad Street  
New York 10004  
February 15, 1968

In our opinion, the accompanying consolidated balance sheet and the related consolidated statements of income and stockholders' equity and the consolidated statement of source and application of funds present fairly the financial position of Schlumberger Limited and its subsidiaries at December 31, 1967, 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.

*Price Waterhouse & Co.*



## Schlumberger Limited

(Schlumberger N. V., Incorporated in The Netherlands Antilles)  
AND SUBSIDIARY COMPANIES

### Five-Year Financial Summary

	1967	1966	1965	1964	1963
	(Stated in millions)				
<b>for the year—</b>					
Sales and services . . . . .	\$369.2	\$343.1	\$318.1	\$302.4	\$303.0
Research and engineering . . . . .	19.3	17.2	16.1	13.6	13.8
Taxes on income . . . . .	20.5	21.2	20.6	20.3	19.8
Net income . . . . .	31.5	28.1	27.1	24.6	21.8
Depreciation of fixed assets . . . . .	26.8	25.4	22.7	21.1	20.1
Amortization of intangible assets . . . . .	2.5	2.0	2.1	2.0	1.8
Cash flow . . . . .	60.8	55.5	51.9	47.7	43.7
Plant and equipment additions . . . . .	34.8	38.5	36.1	27.7	21.7
<b>at December 31—</b>					
Cash, time deposits, and marketable securities . . . . .	74.7	76.2	88.1	87.2	89.8
Working capital . . . . .	165.6	148.1	143.4	138.3	141.1
Current ratio . . . . .	3.4	2.9	2.9	3.0	3.1
<b>Plant and equipment—</b>					
Land . . . . .	7.0	6.1	5.5	4.9	5.0
Buildings . . . . .	65.3	59.1	55.5	51.4	48.5
Machinery and equipment . . . . .	<u>203.3</u>	<u>192.9</u>	<u>174.4</u>	<u>152.5</u>	<u>137.6</u>
Gross book value . . . . .	275.6	258.1	235.4	208.8	191.1
Accumulated depreciation . . . . .	<u>155.6</u>	<u>144.2</u>	<u>131.6</u>	<u>120.4</u>	<u>107.7</u>
Net book value of plant and equipment . . . . .	120.0	113.9	103.8	88.4	83.4
Long-term debt . . . . .	8.9	11.8	12.4	12.6	14.7
Stockholders' equity . . . . .	293.6	266.8	252.6	234.3	225.8
Average shares outstanding (thousands) . . . . .	7,657	7,652	7,715	7,852	7,986
Net income per share* . . . . .	\$4.12	\$3.68	\$3.51	\$3.13	\$2.73
Dividends paid per share* . . . . .	\$1.20	\$1.17	\$1.00	\$0.73	\$0.67

\*Adjusted for three-for-two stock split in March, 1966.



## Schlumberger Limited

277 Park Avenue, New York, N.Y. 10017

### Oil Field Services

*Schlumberger Well Services*, Houston, Texas  
President: M. E. Loy

*Schlumberger of Canada*, Calgary, Canada  
Manager: V. Carson

*Schlumberger Sureenco*, Caracas, Venezuela  
President: L. E. Magne

*Société de Prospection Electrique Schlumberger*, Paris  
*Schlumberger Overseas*, London  
President: P. Majani

*Johnston Testers*, Houston, Texas  
President: A. Morazzani

*Plastic Applicators*, Houston, Texas  
President: C. L. Garner

*Vector Cable*, Houston, Texas  
President: K. W. McLoad

*Forex*, Paris  
President: A. Maratier

*Dowell Schlumberger\**, London  
President: R. Genin

### Electronics and Instrumentation

*Electro-Mechanical Research*, Princeton, New Jersey  
President: G. S. Slougher

*Weston Instruments*, Newark, New Jersey  
President: C. M. Kirkland

*Weston Components*, Archbald, Pennsylvania  
President: H. J. Warnken

*Heath Company*, Benton Harbor, Michigan  
President: D. W. Nurse

*Solartron Electronic Group*, Farnborough, England  
Chairman and Managing Director: E. R. Ponsford

*Société d'Instrumentation Schlumberger*, Paris  
President: J. Babaud

### Furniture Division

*Daystrom*, South Boston, Virginia

*Virtue*, Compton, California  
General Manager: F. A. Piechota  
Manager of Virtue: R. S. Fogarty

\*Associated company 50% owned.

### Directors

Robert G. Cowan  
*Chairman, National Newark & Essex Bank*

Henri G. Doll

William J. Gillingham

Joseph C. Hutcheson, III  
*Partner, Baker, Botts, Shepherd & Coates*

Paul A. Lepercq\*<sup>o</sup>  
*President, Lepercq, de Neuflyze & Co.*

Amédée Maratier  
*President, Forex*

John de Menil\*

Charles C. Parlin  
*Partner, Shearman & Sterling*

Jean Riboud\*<sup>o</sup>

Françoise Schlumberger Primat

René Seydoux

Ame Vennema\*

Enders M. Voorhees<sup>o</sup>

\*Member Executive Committee  
<sup>o</sup>Member Finance Committee

### Officers

Jean Riboud  
*President and Chief Executive Officer*

John de Menil  
*Chairman of the Board*

Ame Vennema  
*Executive Vice President*

William J. Gillingham  
*Executive Vice President*

Paul A. Lepercq  
*Chairman of the Finance Committee*

John E. Rhodes  
*Vice President-Finance*

Everett F. Stratton  
*Vice President*

Nick A. Schuster  
*Vice President*

Edwin N. West  
*Secretary and General Counsel*

David W. Chappuis  
*Controller*

William Niles  
*Treasurer*

### Stock Transfer Offices

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

### Registrars

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



**Schlumberger Limited**