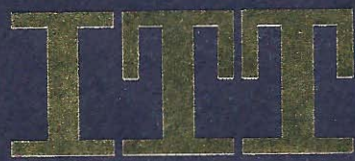
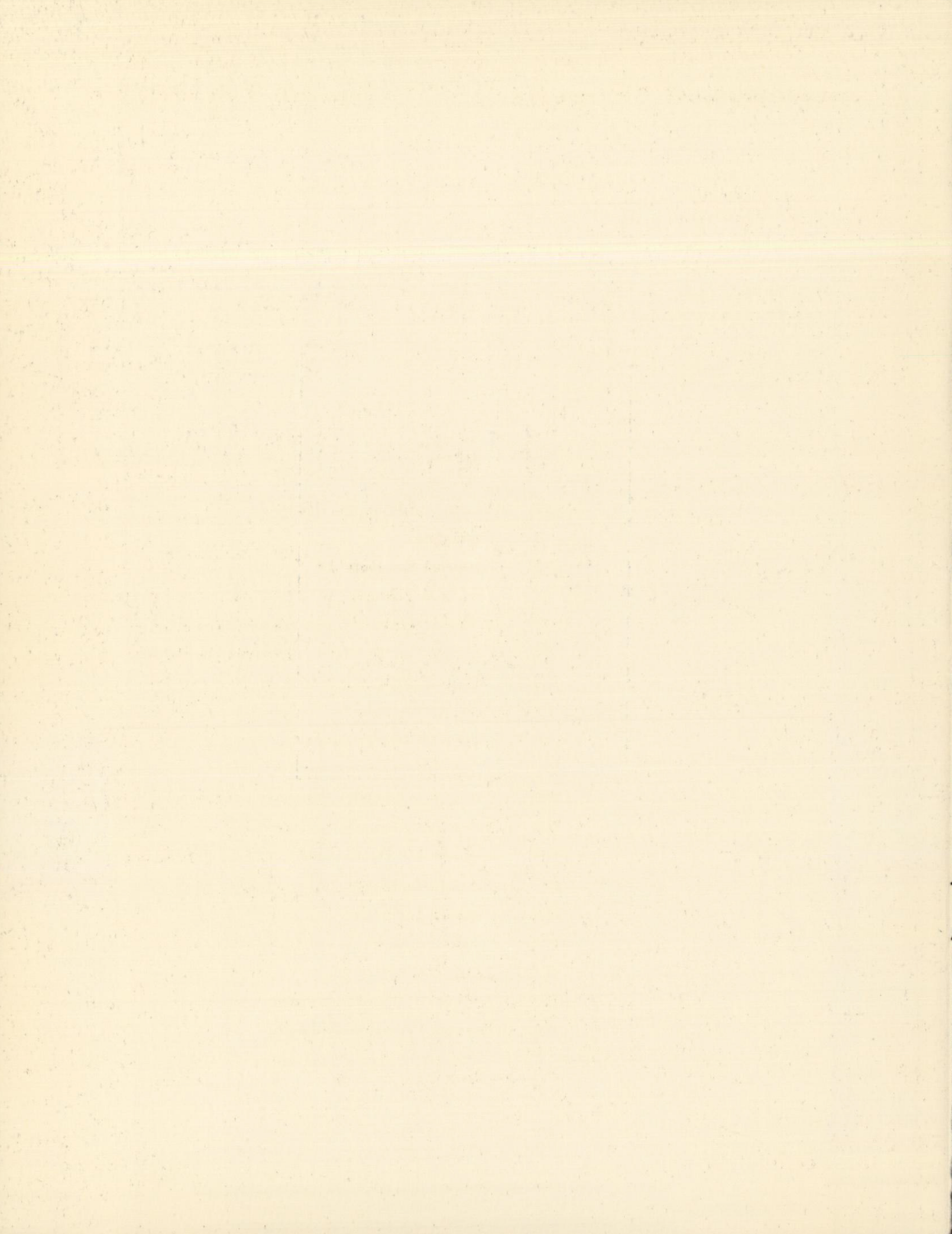


BUSINESS INF. SER.  
CORPORATE FILE



ANNUAL  
REPORT

1962



# International Telephone and Telegraph Corporation

The logo consists of the letters 'ITT' in a bold, stylized, blue font. The letters are closely spaced and have a slightly irregular, blocky appearance.

ANNUAL  
REPORT

1962

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## Directors and Officers

### Directors

George R. Brown	Hugh Knowlton
Harold S. Geneen	J. Patrick Lannan
John J. Graham	Richard S. Perkins
Arthur M. Hill	Warren Lee Pierson
Charles D. Hilles, Jr.	Ellery W. Stone
Allan P. Kirby	Ted B. Westfall

### Executive Committee

George R. Brown	Hugh Knowlton
Harold S. Geneen	J. Patrick Lannan
Arthur M. Hill	Richard S. Perkins
Allan P. Kirby	Warren Lee Pierson

### Officers

Harold S. Geneen	<i>President</i>
William T. Marx	<i>Senior Vice President</i>
James F. Lillis	<i>Vice President and Comptroller</i>
Raymond L. Brittenham	<i>Vice President and General Counsel</i>
Robert S. Alexander	<i>Vice President</i>
Frank P. Barnes	<i>Vice President</i>
Joseph J. Bokan	<i>Vice President</i>
Henry E. Bowes	<i>Vice President</i>
Henri G. Busignies	<i>Vice President</i>
John G. Copelin	<i>Vice President</i>
William M. Duke	<i>Vice President</i>
Neil E. Firestone	<i>Vice President</i>
Frederick R. Furth	<i>Vice President</i>
Edward J. Gerrity, Jr.	<i>Vice President</i>
John J. Graham	<i>Vice President</i>
Corbin A. McNeill	<i>Vice President</i>
Eugene F. Peterson	<i>Vice President</i>
Henry H. Scudder	<i>Vice President</i>
Ellery W. Stone	<i>Vice President</i>
John T. Thompson	<i>Vice President</i>
Ted B. Westfall	<i>Vice President</i>
John J. Navin	<i>Secretary</i>
Hart Perry	<i>Treasurer</i>

### Transfer Agents for Capital Stock

Office of the Corporation, 320 Park Avenue,  
New York 22

Continental Illinois National Bank and Trust  
Company of Chicago, Chicago 90

Dresdner Bank AG, Frankfurt-am-Main,  
Germany

### Transfer Agent for Cumulative Preferred Stock, 4% Convertible Series, Cumulative Preferred Stock 4% Convertible Series B, Cumulative Preferred Stock 5.25% Series

Office of the Corporation, 320 Park Avenue,  
New York 22

### Registrars for Capital Stock

First National City Bank, New York 15

Harris Trust and Savings Bank, Chicago 90

First National City Bank, Frankfurt-am-  
Main, Germany

### Registrar for Cumulative Preferred Stock 4% Con- vertible Series, Cumulative Preferred Stock 4% Con- vertible Series B.

First National City Bank, New York 15

### Trustee for 4 7/8% Convertible Subordinated De- bentures

Irving Trust Company, New York 15

### Registrar for 4 7/8% Convertible Subordinated Debentures

Irving Trust Company, New York 15

### Trustee for 4.90% Sinking Fund Debentures

Morgan Guaranty Trust Company of New  
York, New York 15

### Registrar for 4.90% Sinking Fund Debentures

Morgan Guaranty Trust Company of New  
York, New York 15

### General Offices

320 Park Avenue, New York 22

## Highlights

	1962	1961
Sales —		
United States	\$ 410,219,929	\$335,190,962
Foreign	585,307,896	504,662,311
	995,527,825	839,853,273
Telecommunication Operating Revenues	94,670,534	90,646,658
	\$1,090,198,359	\$930,499,931
Net Income	\$ 40,693,850	\$ 36,059,034
Per Average Share	\$2.43	\$2.18
Average Shares Outstanding during Year	16,496,956	16,265,222
Dividends per Share	\$1.00	\$1.00
Net Current Assets (Working Capital)	\$ 296,155,191	\$268,422,268
Ratio of Current Assets to Current Liabilities	1.8 to 1	1.8 to 1
Plant, Property and Equipment, less Reserves	\$ 462,322,627	\$391,347,228
Orders on Hand —		
United States	\$ 257,000,000	\$207,000,000
Foreign	521,000,000	524,000,000
	\$ 778,000,000	\$731,000,000
Telephones in Service*	431,610	378,346
Backlog Telephone Demand*	196,836	185,715
Number of Employees	157,000	149,000
Number of Stockholders	92,362	94,719

\*Excluding Brazil

### PRESIDENT'S SUMMARY

*“. . . our Company, as scheduled, has broken through the billion-dollar level in sales and revenues for the first time.”*

#### TO OUR SHAREHOLDERS:

1962 was a year of historic achievement for International Telephone and Telegraph Corporation.

I am happy to report that our Company, as scheduled, has broken through the billion-dollar level in sales and revenues for the first time. In doing so, it has fulfilled our expectations and marked the third successive year in which our sales, under the present growth program, have risen to planned new highs. The increase in 1962 was 17 per cent over 1961.

Our earnings in 1962 paralleled this increase. Rising to the highest level in our history, they reached \$40.7-million, or \$2.43 per average common share. This compares with \$36.1-million, or \$2.18 per average common share in 1961.

These increases are significant because they are based on the Company's continuing growth plans for capacity, management, and products that were generated in 1960 and have been gaining headway over the past three years.

We have thus strengthened our position as a world leader in the electronics and telecommunications industry because these plans have enabled us to meet the increasing demand of an expanding world for our products, both old and new.

In our preceding Annual Report, I said that 1961 was a year of "building for the Company". In that report, we showed a number of new plants and major additions that were under-way and that in their turn would lend strength to the Company's future sales and earnings. 1962 also marked a continuation of this building program. Our management, our



programs, our employee capabilities, and our plant capacity are the strongest ever and are still moving ahead, on schedule, to the goals we have set.

During 1962 alone we added 2-million square feet to our manufacturing plants and research laboratories, and 8,000 employees to our rolls. This brings our present worldwide capacity to over 24-million square feet and our worldwide employment to 157,000 employees. Of our total plant capacity, 4.8-million square feet, or 20 per cent, have been added in the past three years. Of these amounts, over 1.1-million square feet of production and laboratory space were added by acquisition during the same three-year period.

From the start of the program in 1960, we have added a number of new executives to our management team, bringing our current worldwide executive-level total to the highest ever. Also, we have reorganized to establish world-

wide product-line profit responsibilities at lower and younger levels of management under the supervision of our long-experienced Managing Directors and Division Managers, thus improving our basic competitive drives, and developing further the strengths of our worldwide executive management team.

We have also added new products during this period, not only in our traditional fields but now moving into new fields — designed to take advantage of the growth of European markets and our intensified competitive position in that area.

A major improvement now emerging from this new combination of management control and growth objectives is an increased realization of some of the basic potentials of the Company. For example, improvement in sales and earnings is being achieved through the better utilization of assets, allowing for current and future growth without dilu-

tion of our shareholders' interests.

Our expansion will continue in 1963, and we look to gains in sales and earnings from this growth during the year, recognizing the time factor between new construction, start-up, and final production.

While achieving growth from within, we have continued our active policy of acquiring companies that fit into our basic product lines, or into our plans for new and expanded products. We anticipate continued improvement of growth and earnings through consolidation of these acquisitions into our overall capabilities, market positions, and skills.

In 1962 we completed 7 acquisitions, 6 in Europe and 1 in the United States. Early in 1963 we completed an additional acquisition in Europe.

Our acquisitions in Europe included, in Finland, the Puhelinteollisuus Company, manufacturers of telephone equipment; in France, Société des Pompes Salmson, manufacturers of industrial pumps; in Italy, Società Impianti Elettrici Telefonici Telegrafici Edili, engaged in construction of telecommunication networks and plants; in Switzerland, Steiner S.A., television and radio rental company; in the United Kingdom, Regentone Products Limited, radio and television manufacturers, and Ace Radio Limited, radio and radiophonograph manufacturers. Also in the U.K. early in 1963 we acquired Robert Maclaren & Co. Ltd., manufacturers of temperature controls.

In the United States in 1962 we acquired National Computer Products, Inc., of Lawrence, Mass., producer of diodes and other electronic components. Also, early in 1963 the Boards of Directors of ITT and General Controls Co. of Glendale, Calif., approved an agreement for the merger of General Controls, manufacturer of automatic industrial control equipment, into the ITT System. Stockholders of both com-

panies are scheduled to act on the merger in May.

In Europe, where our System companies occupy a leading position, demand continued to increase for most of our product lines. Looking to the future, indications are that the European economy will continue to expand and that we will make new gains in this area in 1963.

Our growth program in the United States produced significant results in 1962 with a sales increase of 22 per cent over 1961. Our U. S. earnings increased their share in the System's total net income in 1962. Military sales continued at high levels, but earnings were held down by certain problems on contracts expected to be resolved in 1963. Prospects for our products in the home market continue favorable.

In Latin America, our telecommunication operating companies carried forward service improvement and expansion programs to the full extent permitted by their rate schedules, and our manufacturing companies continued to develop their production and marketing position. Your management also worked to bring about settlement, under international law, of the expropriation in February 1962 of the Rio Grande do Sul division of our Brazilian telephone operating subsidiary. On January 31, 1963, under auspices of the Brazilian government, we reached an interim arrangement for such a settlement. Terms are given in the Telecommunication Operations section of this report.

In other areas of the free world, particularly in the developing countries where the rapid rise of living standards is being helped by Western nations, we have increased our activity. Telecommunication services are now widely recognized as vital to the growth of new countries, and demand for them is increasing.

Underlying the achievements and continued growth of the ITT System is our

work in research and development, which ensures this Corporation's future. Our total System personnel engaged in research and development, contract engineering, and technical support activities exceeds 25,000. Including contract engineering, our expenditures for research and development are expected to reach a level in excess of \$157-million in 1963 as compared to \$150-million in 1962. These efforts have won for us a commanding position in electronic switching, submarine cable, aerial, marine, and submarine navigational aids, satellite communication, and electronic components.

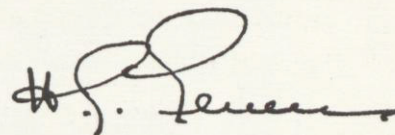
We expect to continue our gains both in sales and earnings in 1963. Our orders on hand at the end of 1962 stood at an all-time high of \$778-million.

As promised, the nature of our Company's management and control has now changed — from the original holding-company type to that of a widespread, aggressive management team operating directly in all areas of the world.

I want to thank the men and women of the ITT System for their contributions to our record achievements in 1962. I also want to thank our suppliers for their cooperation, and our customers throughout the world for their confidence in our products and services. With such support, we will continue to move forward on schedule.

The Annual Meeting of the Corporation will be held on Wednesday, May 8, 1963, in the Ballroom of the Sheraton-Plaza Hotel on Copley Square in Boston, Massachusetts.

For the Board of Directors



March 13, 1963

President

## The Expanding World of ITT

### GROWTH ON SCHEDULE

"... our management, our programs, our employee capabilities, and our plant capacity are the strongest ever and are still moving ahead, on schedule, to the goals we have set."

In 1962 our worldwide growth program boosted ITT to its first billion-dollar year in sales and revenues.

As the largest supplier of electronic and telecommunication equipment on a global scale, the Company three years ago accepted the challenge of an expanding world for more and more telecommunication facilities and services.

We established a System-wide program and timetable for progressively increasing our capacity to meet the rising world demand for our products, and we moved forward as planned in 1962 for the third consecutive year.

This has been accomplished by replacing and relocating older, inefficient plants, and adding new facilities to support the growing volume of our product lines. Our manufacturing cost-reduction activities are designed to ensure that these new facilities will contribute to the System's earnings.

During this initial three-year period, a major objective has been the expansion of our facilities in Europe, where our long-established companies are the leading suppliers of telecommunication equipment and systems, and where demand continues to rise. At the same time, however, we have been building for growth in other areas of the Company's operations, especially the United States.

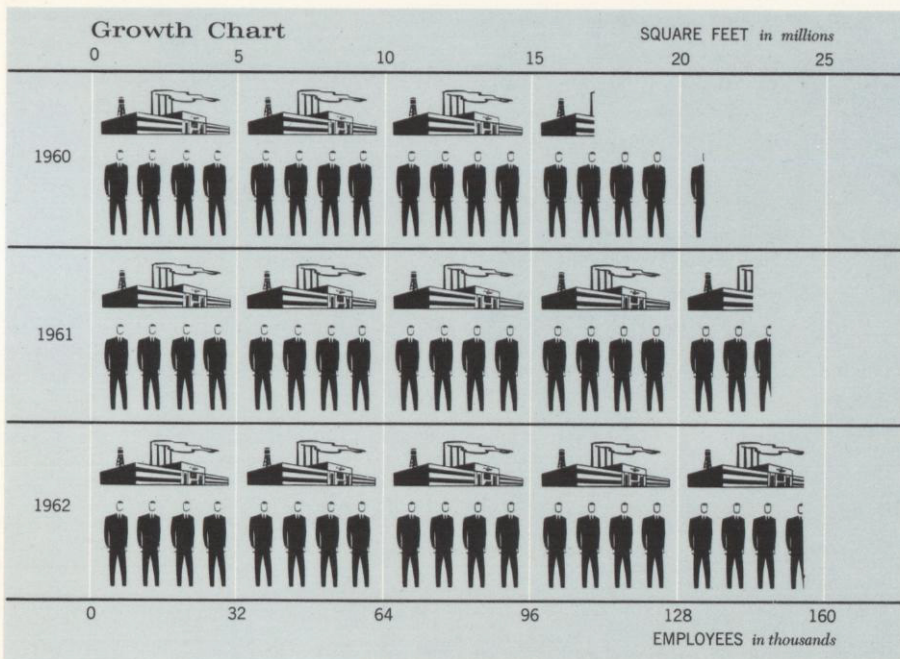
All together, in 1962 we completed 31 new plants or major additions — 17 in Europe, 11 in the United States, 2 in Latin America, and 1 in the Far East — as follows:

*In Europe:* 1 in Belgium, for Bell Telephone Manufacturing Company — electronic components; 1 in Denmark, for Standard Electric Aktieselskab — telephone equipment; 1 in France, for Le Matériel Téléphonique — telephone switching; 5 in Germany, for Standard Elektrik Lorenz AG — telephones, switching, transmission, cable, TV tubes; 1 in the Netherlands, for Nederlandsche Standard Electric Maatschappij N. V. — telephone equipment; 2 in Norway, for Standard Telefon og Kabel-fabrik A/S — cable; 1 in Sweden, for Standard Radio & Telefon AB — electronic equipment; 5 in the United Kingdom, for Standard Telephones and Cables Limited — submarine cable, telephone equipment, components.

*In the United States:* 1 for ITT Arkansas Division, Camden, Ark. — electronic equipment; 1 for Federal Electric Corporation, Paramus, N. J. — engineering and service; 3 for International Electric Corporation at Paramus, N. J., Bellevue, Nebr., and Amherst, Mass. — military electronics; 1 for ITT Intelcom, Inc., Bailey's Crossroads, Va. — military communications; 2 for Jennings Radio Manufacturing Corporation, at Salinas and San Jose, Calif. — power switches; 3 for ITT Kellogg, at Milan, Tenn., Chicago, Ill., and Raleigh, N. C. — telephone switching, electronic systems, transmission and microwave equipment.

*In Latin America:* 1 for ITT Caribbean Manufacturing, Inc., Puerto Rico — telephone equipment; 1 for Standard Eléctrica, S.A., Brazil — telephone equipment.

*In the Far East:* 1 for Standard Tele-phones and Cables Pty. Limited,





Australia — telephone switching equipment.

Our program for growth includes not only the building of new facilities but also the acquisition of companies for the purpose of broadening our product lines. As noted in the President's Summary of this report, we acquired a total of 7 new companies during the year — 6 in Europe and 1 in the United States.

#### TELECOMMUNICATION EQUIPMENT AND SYSTEMS

In 1962 we increased our world leadership in this basic product area. We made further advances in our long-established markets both in Europe and in North America. We also were increasingly active in the developing nations, where telecommunications are becoming more widely recognized as vital to economic growth.

In West Germany, our Standard Elektrik Lorenz AG (SEL), Stuttgart, improved its position as a leading supplier of telecommunication equipment to the West German government. It installed switching and transmission equipment for 900 public exchanges. It undertook the manufacture and installation of a partially electronic telephone exchange scheduled for operation in the spring of 1963, and it is developing on government order a new telephone set based on the ITT *Assistent* model.

In the United Kingdom, our Standard Telephones and Cables Limited (STC), London, reached new production levels. The company completed large contracts for the British Post Office, and one of its notable undertakings was the design and



*Manufactured by our Swedish company in its Solna plant, and marketed under the ITT Standard brand, the new intercommunication system pictured here features pushbutton call, hands-free operation, and direct selection. Sets are plug-and-jack connected for complete flexibility of movement.*

manufacture of a "memory" system for Britain's first all-electronic telephone exchange, opened for public service trial in December.

STC continued to increase its substantial volume of overseas business. It received orders for central exchanges in Ceylon, the Republic of Ireland, Malta, New Zealand, and the Rhodesias. It manufactured and is currently installing a microwave network in Greece for eventual linking with neighboring countries and the European television network. Further projects were undertaken for the Republic of Ireland, and for Sweden and Canada in conjunction with our System companies in those nations. STC also helped to establish the new Klagenfurt-Tarvisio coaxial cable link between Austria and Italy.

In France, our Compagnie Générale de Constructions Téléphoniques (CGCT) received orders for central telephone switching equipment from the French administration and from Argentina, Africa, Australia, and the Philippines. CGCT sales in the private exchange field increased appreciably. A highlight of the activities of our Le Matériel Téléphonique (LMT), Paris, was a contract for expansion of the rotary network in Istanbul, Turkey, which increases the capacity of the system by 35 per cent.

### Major Contributor

Our Netherlands subsidiary, Nederlandsche Standard Electric Maatschappij, N. V., The Hague, was a major contributor to the full automation of the public telephone network in the Netherlands during 1962. The company also supplied the Netherlands government with

automatic exchange equipment for the extension of the telex network to meet the country's growing demands in this field of communication.

Significant progress was made by our Bell Telephone Manufacturing Company (BTM) of Antwerp, Belgium. With Standard Electric A/S (SEA), Copenhagen, it secured orders for Pentaconta equipment for Denmark. BTM telex switching equipment was brought into service in Belgium, Italy, and the United States, where extensions were made to existing installations. BTM's new transistorized printed-circuit equipment for carrier telephony on cables and radio links was also successful. The equipment is available for systems up to 960 channels. Deliveries were made to Luxembourg and Norway, and further orders were received for Argentina and the Republic of Korea.

A new Pentaconta telephone exchange was produced and installed in Rome by our Fabbrica Apparecchiature per Comunicazioni Elettriche Standard, Milan, and was brought into service for handling international traffic. In Spain, our Standard Eléctrica S.A., Madrid, increased sales of its telecommunication products.

In Austria and Scandinavia, the crossbar systems supplied by our Standard Telephon und Telegraphen AG, Vienna, and Standard Telefon og Kabelfabrik, Oslo, have been favorably received, while our Swedish company, Standard Radio & Telefon AB, Bromma, obtained important export orders for rural exchange equipment. In Denmark, our Standard Electric A/S, Copenhagen, successfully installed its first rural ex-

change for the Jutland Telephone Company, and received further orders.

Our Creed & Company Limited in England marked its 50th anniversary by reaching new levels of activity. In the increasingly competitive teleprinter market, Creed achieved an important success in Canada with an Army contract for over 300 of its latest Model 75 teleprinter, and it completed an order covering a large number of these high-speed machines for Spiegel, Inc., one of the largest U. S. mail-order companies. The British Post Office continued its major telex expansion program. With over 10,000 current subscribers, all having one or more units of Creed equipment, the U. K.'s network is expected to more than double by 1970, with consequent increased demand for Creed products.

### Kellogg Consolidation

In the United States, the Transmission Products Department of ITT Kellogg was merged with the Telecommunications Department to consolidate the manufacture and sales of telephone equipment in Kellogg's new Telecommunications Division. The success of Kellogg's new manufacturing plant in Milan, Tenn., led to the sale of the company's main plant in Chicago, and the expansion of the Milan plant to accommodate all manufacturing operations. The expansion was completed in November and the plant went into full operation early in 1963.

Kellogg's new Telecommunications Division introduced the Kelex 2000 system, first of a series of electronic automatic telephone exchanges for commercial use. Also, the company's

Communications Systems Division introduced the K-1500 series for military use.

ITT Canada Limited, Montreal, developed solid-state, 60-channel microwave equipment that will later be made available by ITT companies throughout the world. Canadian-manufactured ITT Kellogg rural carrier equipment continued to lead in the independent Canadian market, and the company delivered on contract with the Canadian Government high-frequency transmitters that will be supplied to India for use in a New Delhi-Tokyo meteorological circuit.

In Latin America, activities of our companies reflected the basic need of the developing countries for telecommunication equipment.

Our Brazilian subsidiary, Standard Eléctrica, S.A., (SESA), Rio de Janeiro, marked its 35th anniversary with the completion of new manufacturing facilities, and increased its sales by approximately 70 per cent. Manufacture of Pentaconta switching equipment was begun. First shipments were made to seven Brazilian cities, and additional orders were received. The company's new manual private branch exchange was approved by the Brazilian Telephone Company. Substantial sales resulted, and further gains are expected in 1963.

SESA-Rio also established an assembly-line operation for the local manufacture of fully transistorized and tropicalized multiplex carrier systems, becoming a major supplier of this equipment to Latin America. In addition, SESA completed installation of the Rio-Belo Horizonte microwave link with 600-channel capacity. This is one of the largest



*Above, world's largest trunk telephone exchange located in London and equipped with switching apparatus made by one of our English companies. Below, new ITT electronic private automatic telephone exchange made in the United States. Light on panel shown in photo indicates where to replace circuit board.*



installations of telecommunication equipment in Brazil since the Rio-Sao Paulo microwave system installed by SESA in 1958 with equipment supplied by STC-London.

#### **Pentaconta is Approved**

Our principal marketing problem — not only in Argentina, but in Paraguay and Bolivia as well — is to find means of financing the large-scale requirements of these countries. The first trial installation of 1,000 lines of Pentaconta line and terminal equipment, in service for the past 18 months, received final approval in a public ceremony held during the year, and our Compañía Standard Electric Argentina made progress toward establishing local manufacture of Pentaconta.

To meet the demands for telecommunication equipment in Latin America, we established a new company, ITT Caribbean Manufacturing, Inc., in Puerto Rico. It will manufacture private automatic branch exchanges, subscriber sets, line concentrators, and Pentaconta central office equipment, and will be a source of supply of these products for Colombia, Mexico, and Venezuela. The present plant area totals more than 50,000 square feet.

Our company in Mexico, Standard Eléctrica de México, S.A., Mexico City, installed and placed in operation during the year a 960-channel microwave system connecting Mexico City and Monterrey with the United States. The equipment was manufactured by SEL in West Germany.

Early in 1962 our Australian company, Standard Telephones and Cables Pty. Limited, sold its consumer products line and centered its entire

*One of the relay stations in the new television transmission network in Belgium. This network, a joint achievement of our Belgian and West German companies, is another example of the successful collaboration of ITT System companies throughout the world for the improvement of communications on all levels.*

manufacturing effort on telecommunication equipment for the Far East and Pacific markets. In collaboration with Australian postal authorities, and based on development work done by ITT companies in Europe, STC-Sydney developed a telephone subset that was adopted as the standard instrument for the entire country. It also developed a line of private automatic branch exchanges embodying the Pentaconta crossbar principle. It gained new business from the development of transistorized open wire carrier equipment for the Australian Post Office, and sold a number of broadcasting transmitters and related equipment to various countries in the Far East.

Other developments in the Far East and Pacific area of the System's operations included the cutover in October of a Pentaconta crossbar exchange, sold and installed in the Philippine city of Zamboanga, Mindanao, by CGCT of France; award of a contract to our Federal Electric Corporation to install a microwave radio transmission system in South Vietnam; establishment of an area headquarters in Hong Kong; delivery by SEL of the first telex exchange to be put into service in Thailand, and development of a Thai language teleprinter now under test.

#### **INDUSTRIAL AND COMMERCIAL EQUIPMENT AND SYSTEMS**

Our System-wide industrial and commercial operations continued to increase their share of world markets in 1962.

In Europe, our Bell Telephone Manufacturing Company (BTM), Antwerp, successfully opened up several new applications for its control equipment. The company installed Europe's first fully transistorized telemetering system for the Belgian Institute of Meteorology in Brussels. It obtained a contract for special closed-circuit television equipment for Canada, and it maintained its strong position in the manufacture of postal mechanization equipment and automatic check-sorting systems.

Our Standard Telephones and Cables Limited (STC), London, established a new Integrated Electronic Systems Division for the company's widespread activities in the data-handling field, as well as for remote control, alarm, and telemetering systems. During the year, the first stage of an electronic "seat availability" system was put into service for British Overseas Airways Corporation, and the company supplied British Railways with a high-speed electronic telegraph switching system. It also developed a new medium-speed data-transmission system, and introduced new transistorized telemetering and alarm equipment.

#### **Industrial Control**

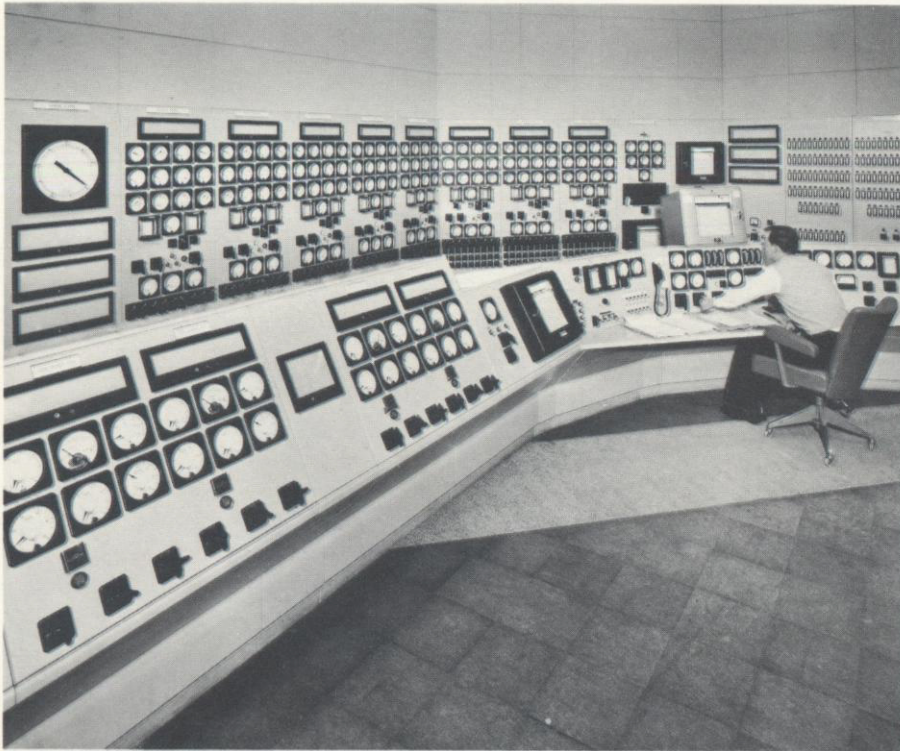
STC's work in the field of industrial control systems included the supply of equipment to one of the United Kingdom's largest and most modern steel works. It filled an order for the power distribution network of the electric tramways in Melbourne, Australia, and it received an important contract to supply the supervisory remote control equipment for the Cameron Highlands electric power project in Malaya.

Our West German company, Standard Elektrik Lorenz AG (SEL), Stuttgart, which pioneered development of track-diagram interlock railway-signaling systems in Europe, added substantially to its laurels in this field. In 1962 alone, the company delivered 16 such systems to the West German railways, and installed inductive train-control equipment along more than 750 miles of track to provide increased operating safety.

Continuing its progress in the production of pneumatic tube equipment, SEL developed under contract from the West German postal and telegraph administration a new system featuring large-capacity tubes and carriers for trial operation in Berlin. Also in the pneumatic tube field, our Standard Téléphone et Radio, S.A., Zurich, received contracts from the Swiss postal and telegraph administration and from industry for a fully automatic tube system that permits the transport of loose papers without carriers.

In Holland, our Nederlandsche Standard Electric Maatschappij, N. V., which has supplied the Netherlands Railways system with remote-control equipment for the past 15 years, began installation of a fifth control center at Utrecht. This center will regulate 90 feeding substations when completed.

In the United Kingdom, STC made spectacular advances in the development of automatic blind landing equipment. The first fully automatic blind landing at London Airport was accomplished in December by a Ministry of Aviation aircraft. Throughout the landing operation, the pilot did not even touch the controls. All radio guidance elements

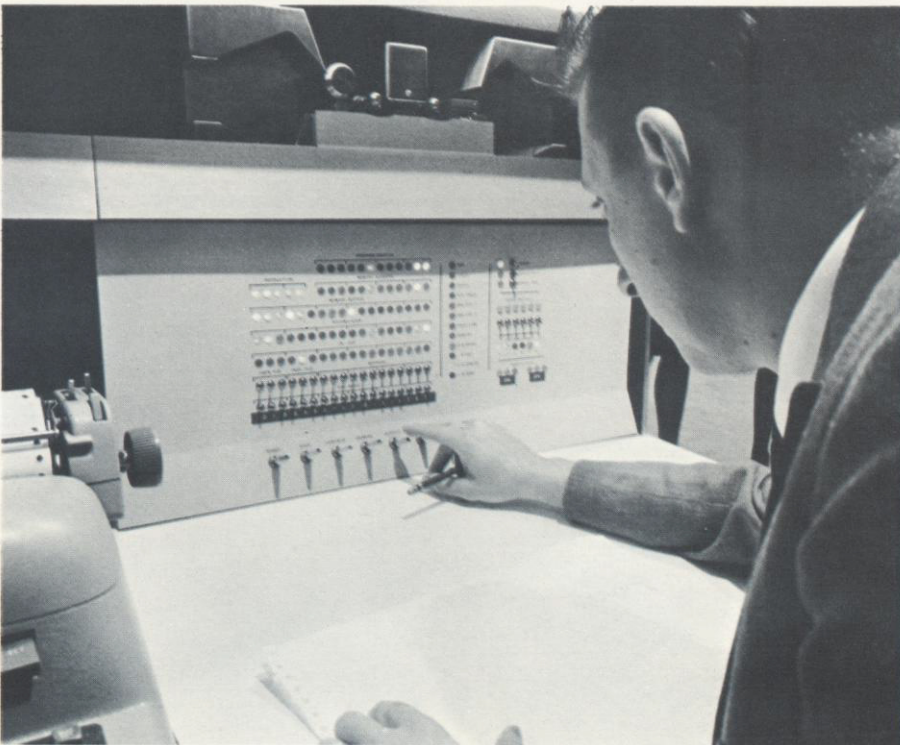


used on the ground and in the air for this feat were designed and built by STC. With the airport completely fogbound, and no other aircraft able to land under these conditions, the plane made a perfect landing using only STC instrument landing system receivers and STC radio altimeters to feed accurate guidance information to the automatic pilot. STC radio altimeters have been used in all 12,000 successful automatic landings at the Ministry of Aviation's Blind Landing Experimental Unit.

In Scandinavia, our Standard Telefon og Kabelfabrik, Oslo, supplied single sideband radiotelephone equipment to the Norwegian merchant fleet, and obtained a maintenance contract covering 44 vessels from the largest shipowner. Our Standard Electric Aktieselskab, Copenhagen, also developed, in collaboration with our German and French companies, a fully transistorized, transportable radio transceiver, and a 95 per cent transistorized mobile set.

Mobile radio equipment produced by our Le Matériel Téléphonique, Paris, has been widely ordered by numerous customers in France, including the Ministry of the Interior, the first-aid department of the Red Cross, the French national electricity company, and various fire brigades. A notable customer was the 7,000-member Paris taxidrivers' association, which signed a five-year contract with the company for a new radio network.

In the United States, the ITT Industrial Products Division (IPD), San Fernando, Calif., took major steps to develop its share of the mobile communications market. It intro-



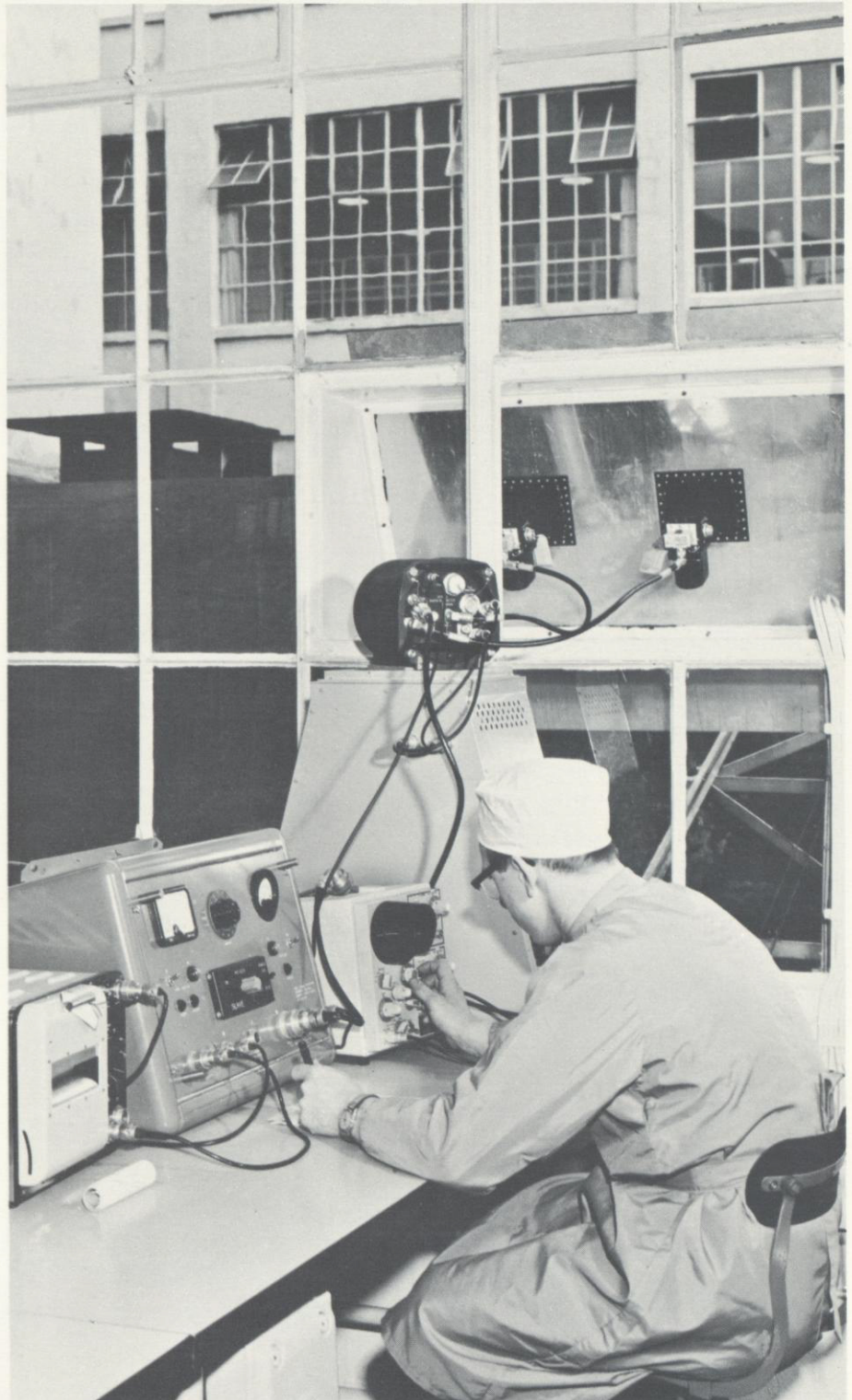
*One of our companies in the United Kingdom supplied the supervisory control and indicator equipment shown above in control room of Berkeley nuclear power station. Below, control board of ITT's ADX (Automatic Data Exchange) System. Operator is shown "instructing" the multiplexed message processor.*

duced a new mobile radiotelephone under the trade name of ITT Auto-com, and concentrated efforts to expand sales of mobile telephone equipment and services to primary market segments. During the year, orders were received from independent telephone companies in Wisconsin, Texas, and Iowa for ITT Auto-com equipment marketed by ITT Kellogg, Chicago. IPD also increased its instrument sales by introducing new equipment of advanced design, including a new model large-screen sampling oscilloscope which, with its 14-inch rectangular screen, offers a new measuring instrument for development engineers.

#### Air Navigation Aids

Our ITT Federal Laboratories (ITTFL) began production of its new transistorized distance measuring equipment (DME-100) at the Clifton, N. J. plant. Models are currently being test-flown by major airlines, and orders have been received from American, National, and Braniff, with others anticipated. The Loran-C airborne receiver met with immediate acceptance and units were ordered by the U. S. Coast and Geodetic Survey, and the Federal Aviation Agency. An air-traffic-control-system design contract, aimed at increasing safety and cutting down on landing delays, was conducted for FAA.

The world's first ADX (Automatic Data Exchange) System was installed and put into operation at the American Embassy in Paris in September. Inaugurated by the Hon. Dean Rusk, Secretary of State, the new ADX System links Washington and Paris with American embassies



*An inspection and test bench for altimeters in the special "clean" area of one of our English companies. Shown here is an altimeter on test and connected to transmitter and receiver aerials. A movable reflector on an outside gantry provides a surface for accurate checking and calibration of altimeters.*

and legations in Europe, Asia, and Africa. Developed and marketed by ITT Information Systems Division (ISD), the ADX System has been commercially available little more than a year. It is now being installed in a wide range of applications, including the new global weather alarm system, "Met-Watch", of the Air Weather Service, and as a multi-purpose digital communications integrator for a major U. S. airline. Also in this field, ITT Canada Limited, Montreal, began installation of an ADX System for the Aluminium Company of Canada.

The commercial division of our Federal Electric Corporation, Paramus, N. J., ended its second year of operation with a coast-to-coast network of service centers. The division has placed increasing emphasis on large-scale projects within industrial and commercial areas such as maintenance of the communication system of New Jersey's Garden State Parkway, nationwide service of various computer and data processing systems and subsystems, and installation of private communication systems.

The ITT Data Processing Center, managed by our International Electric Corporation, Paramus, closed out a successful first year of operation in 1962. Serving government, science, and business, the center has acquired an impressive list of clients. In addition to modern computers, the center is also equipped with data link transmission hardware.

In Latin America, our manufacturing company in Argentina, Compañía Standard Electric Argentina, S. A. I. C., Buenos Aires, engineered and supplied a complete lighting sys-



*An ITT engineer conducts one of many performance tests of an explosion-proof communications panel for the launch maintenance conference network in an Atlas "F" series missile silo in Oklahoma. ITT is the prime contractor to the U. S. Air Force for ground communications in the Atlas program.*



tem for the international airport at Mendoza. Marine radio equipment for large ships was produced and delivered by our Brazilian manufacturing company, Standard Eléctrica, S.A., Rio de Janeiro.

In the Far East, ITT Philippines, Inc., was engaged in supervising the installation of electronic navigational aids, lighting, and other equipment supplied by ITT Export Corporation under a multimillion-dollar contract for Manila International Airport.

#### DEFENSE EQUIPMENT AND SYSTEMS

The Company increased its share of the military market in 1962, as reported in official government tabulations. With the realignment and strengthening of our U. S. Defense Group, we look to further progress in 1963.

Early in the year, we were awarded a Department of Defense contract to provide engineering and technical assistance for global military communication satellite systems. A new company, ITT Intelcom, Inc., was formed to assist the Defense Communications Agency in furnishing staff planning to insure not only the compatibility of the spaceborne and ground electronics, but also the integration of the complete system with existing military communication networks.

The ITT Information Systems Division (ISD) and ITT Kellogg's Communications Systems Division (CSD) were transferred to the original four companies of the U. S. Defense Group to combine all our skill in the field of military electronics. Our overseas companies also sharply

increased their activities in the growing European markets for defense systems and equipment.

International Electric Corporation (IEC) made substantial progress in the production phase of Project 465L, the new automated command control system for the Strategic Air Command. Equipment was delivered to SAC bases, and similar equipment was delivered to the Air Training Command for instruction of Air Force personnel.

IEC's role in the information systems field was further strengthened by receipt of a contract from the U. S. Air Force to conduct a missile-range implementation planning study. IEC is also finding applications of information-handling systems in other segments of government, such as its contract with the U. S. Forest Service to provide a command control simulator to be used in training fire-fighting personnel.

During the year, several Atlas bases communication systems were made operational for SAC by Kellogg's CSD.

At Vandenberg Air Force Base, California, part of the Pacific Missile Range, CSD's responsibilities continued to grow. In addition to our work on the Atlas and Titan installations at the base, CSD was awarded a multimillion-dollar contract for the installation of Minuteman communication systems. From complex terminal facilities to intricate interface devices, the vast transmission networks installed by CSD provide 90 per cent of the communications in support of Vandenberg's launch operations.

Our ITT Communication Systems, Inc. (ICS) became increasingly active in the planning, design, and management of military communication systems. As principal contractor for SPACECOM, ICS continued to play a major role in this worldwide communication network for the U. S. Air Force. The project, formerly designated 480L, includes support for all mission and operational elements of the U. S. Air Force.

Work is also in progress to furnish the Defense Communications Agency with a computer simulation model of the entire Defense Communications System. This model will simulate the behavior of the system under a variety of environmental and traffic conditions and will be used as a working tool to solve communication-systems design and management problems.

A number of multimillion-dollar contracts to build major military communication systems in Europe have been awarded to our ITT Federal Laboratories (ITTFL), Nutley, N. J. As prime contractor, ITTFL is responsible for the systems engineering, manufacturing, installation, operation, and maintenance of equipment, and of personnel training, and complete logistic support.

Our service company, Federal Electric Corporation in Paramus, N. J., also received several large system contracts for military communication networks in Europe.

The several new Polaris fleet ballistic missile submarines commissioned during the year all carry communications and other electronic gear supplied by ITTFL. During the year, ITTFL was commended by the Navy



for its part in developing this mighty deterrent force.

Under a U. S. Air Force Military Assistance Pact, ITTFL is currently building a South Korean radio communication system employing both line-of-sight and tropospheric scatter microwave techniques to provide voice and teleprinter facilities. Ultimately the system will serve as a separate military communication system for the Republic of Korea Air Force.

In the field of electronic long-range navigation, ITTFL Loran-C ground and airborne equipment is being manufactured for a variety of customers including the U. S. Coast Guard, U. S. Air Force, NATO, and the Military Air Transport Service. The division's medium-range air navigation equipment (TACAN) continues to be produced in quantity for the U. S. military forces as well as those of Allied nations.

#### **Mobile Radio Equipment**

Under a contract with the West German Ministry of Defense, our Standard Elektrik Lorenz AG, Stuttgart, developed mobile radio equipment which was selected for the West German armed forces.

Le Matériel Téléphonique, Paris, has been awarded a contract for the design and manufacture of a flight simulator for the French Navy. The same company also delivered several Pentaconta exchanges to the French Air Ministry, the French Air Force, and various French military air bases.

In Sweden, our Standard Radio & Telefon AB was named principal contractor by the Swedish Royal Air Force for automation of Sweden's

*Our military activities during the year included a contract to supply exploding bridgewire firing modules for service on the U. S. Army's Pershing missile. Inspection of one of these modules is shown here. They are used for stage ignition and separation, thrust termination, and spin-motor initiation.*

national air defense system. The contract calls for providing the Swedish Air Defense System with equipment for radar information gathering, data handling, and automated transmission of the processed results to military aircraft in flight.

In late autumn, our Belgian subsidiary, Bell Telephone Manufacturing Company, Antwerp, received its first order for a light field telephone system of an entirely new concept, incorporating considerable reductions in weight and size. The company also delivered components for the Hawk missile, the F104G fighter, and various equipment for several NATO armed forces.

In Holland, our Nederlandsche Standard Electric Maatschappij N. V., The Hague, ranks high among suppliers to the Royal Netherlands Defense Services as well as to industrial enterprises active in the military field.

During the year, our Portuguese company, Standard Eléctrica, S. A. R. L., Lisbon, participated in the joint European production of the Sidewinder missile for NATO. And in England, Standard Telephones and Cables Limited, London, continued to supply telecommunication, radio, and special electronic equipment for the United Kingdom and Commonwealth armed services.

ITTFL units in Palo Alto and San Fernando, Calif. were consolidated into a single location at San Fernando for greater operational efficiency. Also, to meet expanding requirements of our U. S. Government and military customers for services in the European area, International Standard Engineering, Inc., with offices in Paris, Rome,

and Wiesbaden, became a subsidiary of Federal Electric Corporation (FEC) on January 1, 1962. A new communications project was awarded to FEC in Turkey, and still others were added in the Far East and central Pacific areas. The newest of these calls for a 600-channel microwave system extending through the major centers of South Vietnam. FEC's operation, maintenance, and support of NORAD's Distant Early Warning System continued at the same high level of reliability, and the company has been awarded a contract to continue its operations through the fiscal year 1963.

#### CONSUMER PRODUCTS

We made sizeable gains in our consumer business in 1962. We increased our share of existing markets for consumer products manufactured by our companies in Europe and Latin America, and we took strong steps to improve our capacity to supply expanding demand in new and developing markets.

Contributing to these gains were sharply increased sales of our radio and television sets resulting from improved manufacturing and marketing techniques now in force throughout the ITT System.

In France, our Le Matériel Téléphonique increased its radio and television sales 35 per cent over 1961. This gain was due in part to the distribution of radio receivers imported from our Standard Elektrik Lorenz AG (SEL), West Germany, which manufactures sets under its Schaub-Lorenz trademark, and in part to the local manufacture of television sets using the Schaub-Lorenz design.

In West Germany, demand continued at a high level for SEL's Schaub-Lorenz radio, television, and phonograph equipment. SEL's dominant position in the portable radio field was further consolidated with the introduction of an improved version of the popular "Touring" set. Another addition to the company's line is the new "Weekend" portable which has met with wide public acceptance. Like the "Touring" model, this new set can also be used as a car radio.

Gains in domestic sales of television sets were reported by our Bell Telephone Manufacturing Company of Belgium, which also increased its sales of refrigeration products. In Norway, our Standard Telefon og Kabelfabrik A/S, Oslo, had similar increases in sales of its domestic freezers and introduced new models.

In Switzerland, our Standard Téléphone et Radio S.A., Zurich, acquired the Steiner S.A. organization in Berne, the country's leading television and radio rental company, and looks to a growing share of the market as a result. The manufacture of television receivers was further developed by our Standard Eléctrica, S. A. R. L., in Portugal.

Market prospects in the United Kingdom brightened considerably, following the British government's proposals for new 625-line television standards, new ultra-high-frequency channels, and color transmissions. Kolster-Brandes Limited (K-B), which is now the Consumer Products Division of our Standard Telephones and Cables Limited, was one of the first British manufacturers to concentrate on the dual-standard receivers that will be required during



the next few years. It is expected that the coming changes in transmission standards in the U. K. will maintain the consumer trend there toward rental rather than sale. K-B has two rental companies — Gardners, and Pearl Radio — as outlets in this developing market. In addition to transistor radio sets, K-B also makes and markets tape recorders, record players, and hearing aids.

Two recent acquisitions by STC have significantly strengthened its position in the competitive consumer-electronics field. They are Ace Radio Limited and Regentone Products Limited. Their products include television and radio sets, and radiophonographs.

In Latin America, our Standard Eléctrica S.A. (SESA), Rio de Janeiro, increased its sales of television and radio sets by more than 65 per cent over 1961. During the year, SESA also increased the output capacity of its picture-tube manufacturing facilities. Addition of television tuner production under a licensing agreement with Standard Kollsman Industries makes SESA one of the most highly integrated manufacturers of television and radiophonograph sets in Brazil — producing picture tubes, tuners, coils, transformers, record changers, cabinets, and mechanical parts.

#### CABLE AND WIRE PRODUCTS

Our companies in Europe, North and South America, and the Far East played a leading role during the year in the supply of cable and wire for the world's growing communication and power requirements.

Our Standard Telephones and Ca-

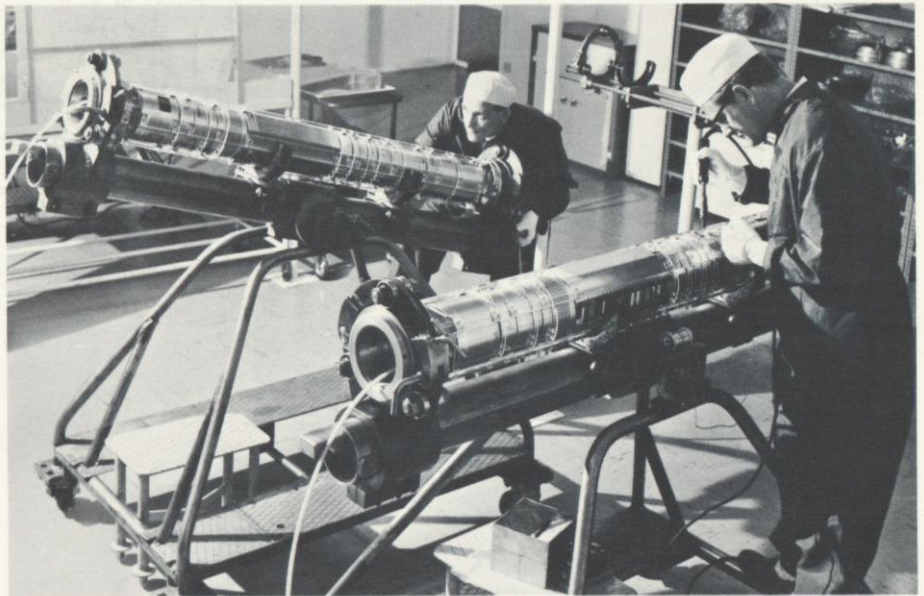
*Our companies in Europe and Latin America made sizeable gains in sales of television and radio sets during 1962. Shown here is the "Weltspiegel 3059 D", one of the successful new models manufactured by our company in West Germany. It features a control panel cover that can be locked.*

bles Limited (STC), London, was a major factor in the successful establishment of new international long-distance communication facilities by means of submarine telephone cables. Its new submarine cable factory at Southampton, completed in 1961, went into production on orders from American Telephone & Telegraph Company for a total of some 4,500 nautical miles of cable for trans-Atlantic and other routes.

The Australia-New Zealand section of the Commonwealth Pacific cable (COMPAC) was completed and inaugurated during the year. STC supplied 37 of the 52 repeaters in this section, and half of the terminal equipment. For the entire Australia-Canada route, which is scheduled for completion by the end of December, 1963, STC's factory at Southampton is supplying 2,800 nautical miles of British Post Office type deep-water lightweight cable, representing a third of the total cable requirement. STC's factory at North Woolwich is responsible for 242 repeaters and 38 equalizers, which constitute 75 per cent of the vital underwater equipment, and a major portion of the shore terminal equipment is being supplied by STC-London.

Further orders were received, against strong international competition, for STC's recently developed 120-circuit, shallow-water system comprising cable and equipment for the United Kingdom-Netherlands routes.

During the year, our West German subsidiary, Standard Elektrik Lorenz AG, Stuttgart, enlarged its capacity to handle the constantly increasing requirements of the West German telecommunications administration for cable and wire products. It also



*Heart of transoceanic voice communications through cables are the submerged repeaters, above, being assembled in one of our English factories. Bottom photo shows operations in the laying of submarine power cables supplied by our company in Oslo to bring electricity to islands off the Norwegian coast.*

inaugurated the manufacture of multiple twin cables.

Our Standard Telefon og Kabelfabrik, Oslo, increased its sales of communication and power cables and is filling a substantial export contract for plastic-insulated cable, including loading coils. Power cables are a specialty of this company, and include oil-filled super-tension types. The company also moved to the forefront with the development of manufacturing techniques involving the sheathing of cables with extruded aluminum.

Another of our companies active in the cable field is Standard Eléctrica, S.A., Madrid. The year saw a substantial increase in the output of telephone cable by its plant in Santander—for export as well as for the Spanish market, again reflecting the growing worldwide demand for telecommunication products.

ITT Surprenant Mfg. Co., of Clinton, Massachusetts, became a member of the System with its acquisition in 1961, and is a leading producer of specialized wire and cable. During the year, plans were agreed upon to introduce to European markets in 1963 the line of specialty wires for commercial and military applications produced by Surprenant.

### New Products

Surprenant continued its leadership in the development of new wire and cable products for the aerospace and electronics industries. It introduced a "water-blocked" cable for use in ships and submarines, so called because the properties of the cable's insulation enable it to resist water seepage encountered deep in the ocean.

Other Surprenant developments included an entirely new abrasion-resistant insulation introduced to the aircraft and missile industry, and molded connectors for highly complicated multiple conductor systems required for pre-launch missile checkouts. New business resulted from hookup wire with improved insulation, coaxial cable with foamed insulation for lightness, and irradiated wire and heat-shrinkable tubing for use as insulation.

Our ITT Royal Electric Corporation of Pawtucket, R. I., a major manufacturer of rubber- and plastic-insulated electric wire and cable and related products, initiated during the year a multimillion-dollar program to improve and expand its productive capacity and to cut costs in this highly competitive market.

### COMPONENTS AND MATERIALS

Our progress in the development of components and materials—the basic units on which performance of all electronic and electromechanical equipment depends—received strong impetus from the launching of new programs of reorganization, manufacturing, marketing, and acquisition.

In the United States, our components activity is now coordinated under its own group executive, a corporate vice president. During the year, we acquired National Computer Products, Inc., of Lawrence, Mass., now renamed ITT Semi-Conductors, Inc. We also established a new unit of our ITT Electron Tube Division in Easton, Pa., where a new facility is being constructed in 1963 for production of special-pur-

pose tubes. This new operation brings to eight the number of our U. S. units concerned primarily with the production of components.

Outstanding products recently developed in the United States include a new high-power traveling-wave tube for use in U. S. Navy electronic countermeasure systems, and a new type of hydrogen thyratron tube for use in Nike-Zeus discrimination and target-tracking radar. These are being manufactured at our components plants in Roanoke, Va., and Newark, N. J.

Meanwhile our new Europe-wide marketing organization expanded European sales of ITT components manufactured throughout the system.

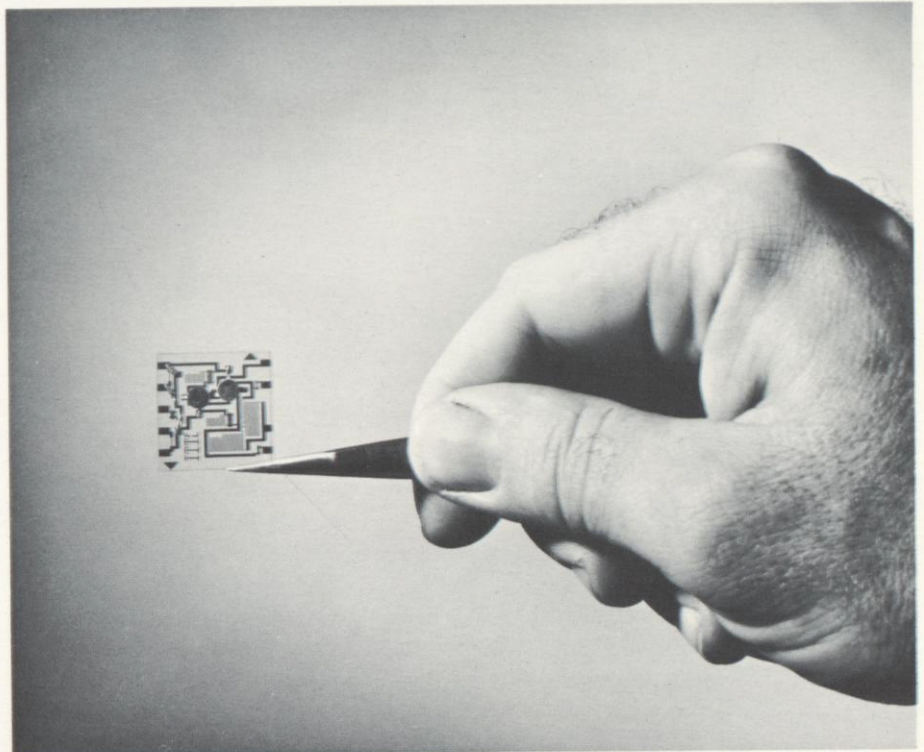
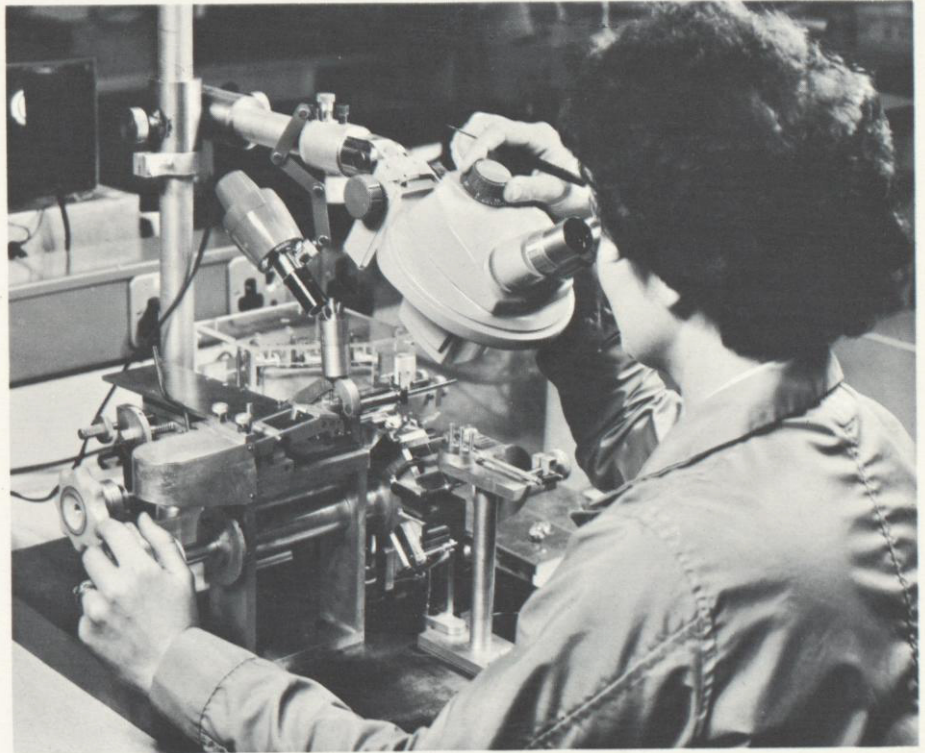
In England, our Standard Telephones and Cables Limited (STC) is one of the larger manufacturers of high-quality electronic components. Among its activities is the new Electro-Mechanical Products Division, established to manufacture microphones and a comprehensive range of relays, both telephone and non-telephone types, for the industrial market.

STC developed a range of silicon controlled rectifiers that will be introduced on a large scale in 1963. The company also developed new devices for the protection of silicon rectifiers from the effect of peak high voltages. High-stability carbon film resistors were chosen for several vital circuits in the British scientific satellite Ariel 1, put into orbit early in 1962. A new line of industrial radio-frequency heating tubes and special long-life tubes for use in submerged repeaters on intercontinental subma-

rine cable systems was successfully exploited. Facilities for quantity manufacture of epitaxial planar transistors and tunnel diodes, both of which were first produced in Britain by STC, were greatly improved. In the capacitor line, synthetic dielectrics have been added, and advanced work is being carried out on thin-film integrated circuitry, which promises to be one of the most significant component technologies of the future.

Our quartz crystal operation — which enjoys acknowledged leadership in Britain in the manufacture of frequency-determining crystals of extreme precision, crystal and electromagnetic filters, and high-stability frequency sources — was moved into a new factory that will give it the capacity to become Europe's largest producer. Also, magnetic material activities were consolidated in a new factory having up-to-date facilities for the production of modern magnetic devices.

In France, our Le Matériel Téléphonique stepped up sales promotion for ITT components and obtained favorable reaction from the French market for our epitaxial planar transistors. In West Germany, our Standard Elektrik Lorenz AG extended the advantage of high-temperature performance to all types of selenium rectifiers. It also introduced special miniature selenium rectifiers sealed in cast resin for application to television receivers, and a silicon power rectifier with unusually high reverse-voltage rating. The company's capacitor program was enlarged in 1962 by the addition of a new series based on metalized plastic foil.



*In 1962 we improved our facilities for quantity production of epitaxial planar transistors. Above, transistor production line in one of our English plants. Below, a closeup look at an ITT integrated micro-miniature circuit developed in the U. S. for resistors, capacitors, and interconnecting wiring.*

The magnetic counters manufactured by our Standard Telephon und Telegraphen AG, Czeija, Nissl & Co., Vienna, have found worldwide acceptance as a component for many types of switching and data-processing equipment. In spite of the growth of electronic techniques, the demand for electromechanical components of modern design remains heavy, especially in counting and parceling operations and in recording and storing of data. Hence our companies in Portugal, Italy, and Sweden emphasized these types of components in their production programs. In 1962 they considerably expanded the manufacture of electromechanical relays for industrial applications.

Our production of components and materials also showed satisfying gains in other parts of the world. Our companies in Latin America and the Far East increasingly supplied their markets with components and materials of their own or other ITT companies' manufacture. Our ITT Canada Limited has recently taken over direct marketing responsibility from manufacturers' agents for all ITT components, and expects a substantial increase in 1963 sales as a result.

Jennings Radio Manufacturing Corporation on the Pacific Coast is the world leader in non-thermionic vacuum components used in communications, radar, industrial electronics, power transmission, and public utilities. Several new products this year meet new needs of the missile-tracking and satellite fields. The world's first vacuum transfer latching and stepping relays for RF transmitters and antenna switching were marketed. A new plant was completed for

the manufacture of high-power switches.

Over-all, we progressively stepped up our component marketing activity around the world during 1962, implementing various programs designed to take advantage of present and future opportunities in this important field. The prosperous European markets offer great potential for components of high quality. The development of our internationally coordinated activities has already placed us in an excellent competitive position to meet this challenge.

Increasing numbers of specially selected and trained sales personnel are familiarizing the user industries with the range of component types produced in our factories. These contacts are producing encouraging results and are providing valuable information on customer requirements.

### TELECOMMUNICATION OPERATIONS

We continued our efforts in 1962 to meet the pressing need of Latin America for expanded telecommunication services.

Our companies operate 74 per cent of the telephones in Peru (principally in Lima), 84 per cent in the Brazilian state of Paraná, 95 per cent in Puerto Rico, 96 per cent in Chile, and 100 per cent in the Virgin Islands. In addition, we operate radio communication subsidiaries in Argentina, Bolivia, Brazil, Chile, and Puerto Rico — providing international radiotelephone and radiotelegraph service. We also operate radio communication facilities for both telephone and telegraph in Ecuador and Peru.

Expansion and improvement of these services was the keynote of our activities in these countries during 1962, and we made substantial progress in spite of widespread economic and political uncertainties which plagued this part of the world throughout the year.

Our System companies in England and Puerto Rico, in collaboration with American Telephone and Telegraph Company, reached the final planning stage for installation of two new Caribbean submarine cables that will provide vastly improved telecommunication services both within Latin America and between Latin America and the United States, with work to begin in 1963.

The first cable, with 80 circuits, will extend from Florida through Jamaica to Panama and Colombia. This system will permit expansion toward other Central and South American countries, and will provide them with improved connections with the United States. The second cable system will link Puerto Rico with the United States and will be installed in cooperation with American Telephone and Telegraph Company, starting in 1964. This system will be routed through St. Thomas to provide our Virgin Islands Telephone Corporation with a new direct outlet to the United States, and will more than double present facilities available to San Juan. Plans call for later extension to Venezuela.

Our Radio Corporation of Puerto Rico also carried forward its program of expansion and improvement of existing facilities. It increased the number of telephone channels via the twin cables to Florida from 67 to 84, and its radio channels to the

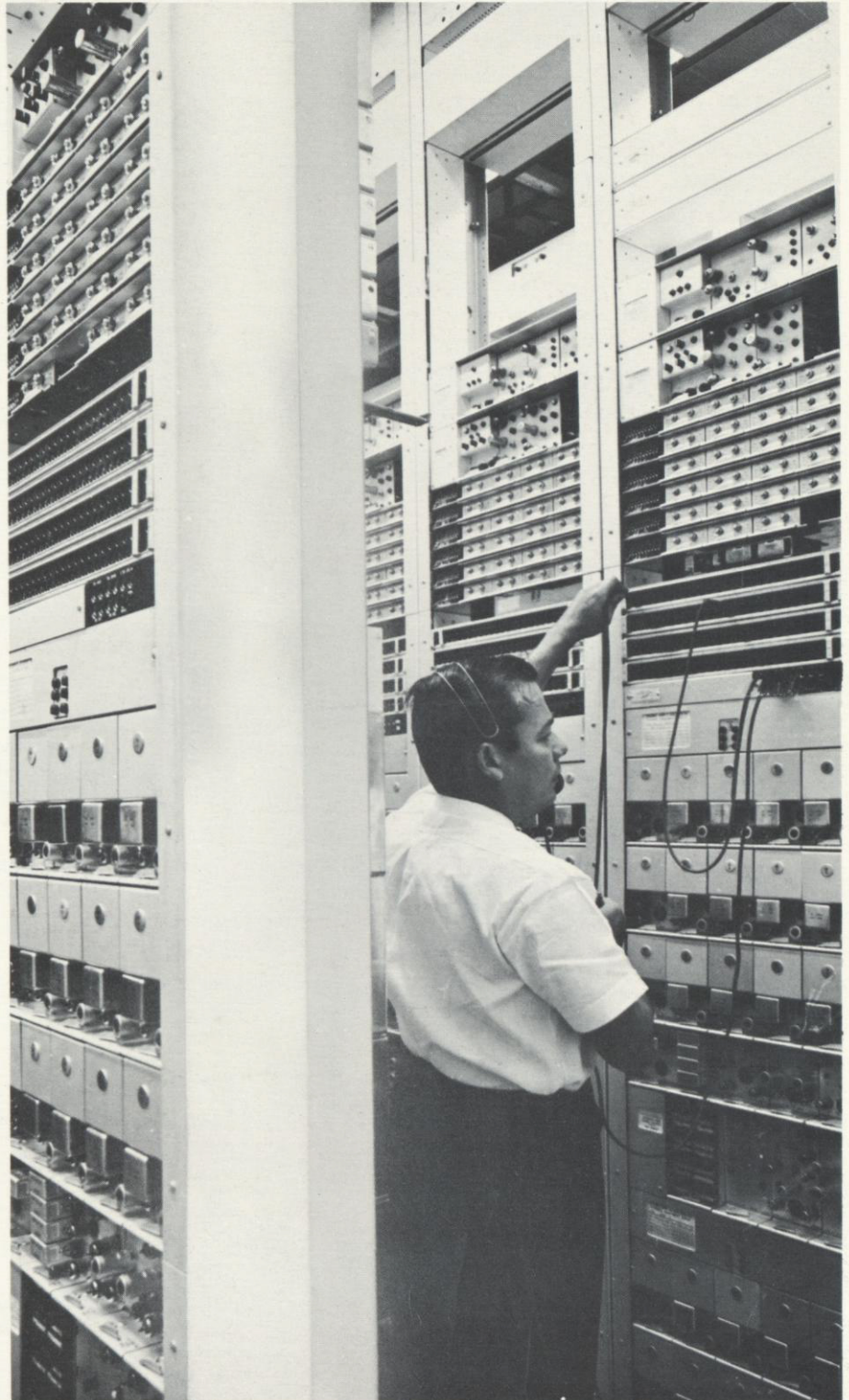


Caribbean Islands and New York from 52 to 57. As a result, the volume of traffic handled during the year rose 33 per cent over 1961.

In Chile, our Compañia Internacional de Radio, S. A., Santiago, achieved a major expansion of its telex service. The establishment of multi-channel, error-protected circuits with Rio de Janeiro completed a planned intra-Latin American telex network linking Lima, Santiago, Buenos Aires, and Rio de Janeiro, connecting each of these points with the United States over our worldwide telex network. In Argentina, our Compañia Internacional de Radio, S. A., Buenos Aires, continued its improvement program with a number of new equipment installations and the establishment of 4 new circuits, 2 to Lima, Peru, and 2 to New York.

As mentioned in the President's Summary of this report, the Company early in 1963 reached an interim arrangement in the matter of payment for its expropriated Brazilian telephone operating subsidiary in the State of Rio Grande do Sul. This arrangement provides for total advances to the Company of \$7,300,000 and is based largely on a proposal made by the Company in March, 1962, following expropriation of the properties.

Under terms of the arrangement, \$3,650,000 has been repatriated to the Company, and an additional sum of \$3,650,000 will be reinvested in our Standard Eléctrica, S. A., Rio de Janeiro, for expansion of its manufacturing capacity. Any obligations incurred by ITT under terms of the interim agreement will only be repayable and offset at the time of the



*We made substantial progress during the year in the improvement and expansion of our communications facilities in Latin America, and one of our major expansion programs continued to move forward in Puerto Rico. Shown here is some of the new microwave equipment in Puerto Rico's Santurce exchange.*

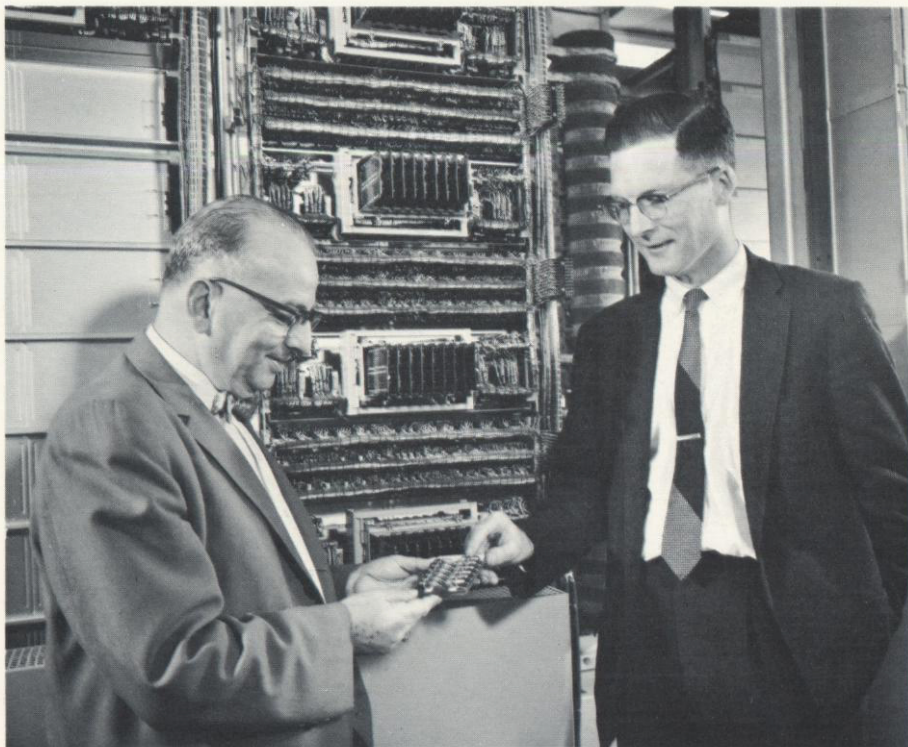
final Brazilian court settlement of legal actions now pending as a consequence of the expropriation. These may extend over a period of years.

### 34,000 New Telephones

Our Puerto Rico Telephone Company invested \$35,438,000 in expansion and improvement during the year. It increased the number of telephones by more than 34,000. It also added 74 microwave circuits to its long-distance service, bringing its long-distance microwave capacity to a total of 608 circuits. Increases in overseas and inter-island calls were reported by our Virgin Islands Telephone Corporation, resulting from installation of a new toll board in St. Thomas during August. Installation of Pentaconta switching was completed early in 1963, bringing dial service to St. Thomas, St. John, and St. Croix.

Our subsidiary in Peru, Compañía Peruana de Teléfonos Limitada, embarked on a program of service improvement and expansion, following the granting by the Peruvian government of an increase in rates to produce a net income of 12 per cent on average equity capital. Work went forward on the first stage which includes installation of 5,000 lines of rotary switching equipment in the San Martín Central Office. The equipment was produced by our Belgian subsidiary, Bell Telephone Manufacturing Company.

In Chile, our Compañía de Teléfonos de Chile made substantial service improvements during the year. Three new automatic exchanges were put into service in La Cisterna, San Bernardo, and Antofagasta, and three



Top photo shows part of new automatic switching equipment installed during 1962 in New York headquarters of ITT's worldwide cable and radio communication system. Below, view of radio station aboard a Norwegian cargo ship. ITT equipment includes a combined teleg-raphy-telephony transmitter.

new automatic exchanges were also added in Santiago. Considerable progress was made in the expansion and improvement of long-distance facilities throughout the country. Nineteen new carrier systems went into service. A total of 148 new long-distance circuits were added, and five previously isolated localities were connected to the long-distance network.

#### **AMERICAN CABLE & RADIO CORPORATION**

Overseas communication facilities of our American Cable & Radio Corporation (AC&R) were considerably increased during 1962, both by using new channel capacity in the modern multichannel submarine telephone cables and by the expansion of existing point-to-point radio systems. These added facilities make it possible to continue to meet the growing demand for telex and leased channel customer-to-customer services, and to provide improved handling of regular message traffic.

Installation of automatic switching equipment in AC&R's operating centers at New York and San Francisco was completed in September. These installations supply the capacity to meet the demand of telex growth. They increase the speed of service, and they provide more efficient operation at lower cost.

In 1963, AC&R will add further automatic techniques in its main operating center in New York. Of prime importance is the installation, started in 1962, of a stored-program message-switching center for automatic switching of international telegraph messages. Known as ITT's 7300 ADX (Automatic Data Exchange), it is

being installed by our ITT Information Systems Division.

#### **MARINE RADIO**

The Marine Division of AC&R's Mackay Radio subsidiary, with headquarters in Clark, N. J., obtained a number of sales contracts for complete ship-borne radio stations and substantial orders for electronic equipment.

Our International Marine Radio Company Limited, of Croydon, England, installed complete marine radio systems in 44 vessels. Orders on hand at the end of the business year called for major installations in 18 vessels. The company also received orders for 149 portable lifeboat radio systems known as "Solus". Our marine radio company in Spain, Compañía Radio Aérea Marítima Española, S.A., Madrid, obtained a large proportion of orders from private shipowners during 1962 for the supply and installation of radiotelegraph stations and echo sounders manufactured by our Standard Eléctrica S.A., Madrid.

#### **SPACE EQUIPMENT AND SYSTEMS**

The Company enlarged the scope of its U. S. operations during the year in the rapidly developing market created by the aerospace industry.

We designed, engineered, and proved out a portable space-communications ground station. We established a new electronics manufacturing division to meet expanding aerospace demands. Also, as a result of our growing capabilities in this field, a contract to build a geodetic satellite designed to gather information on the contour

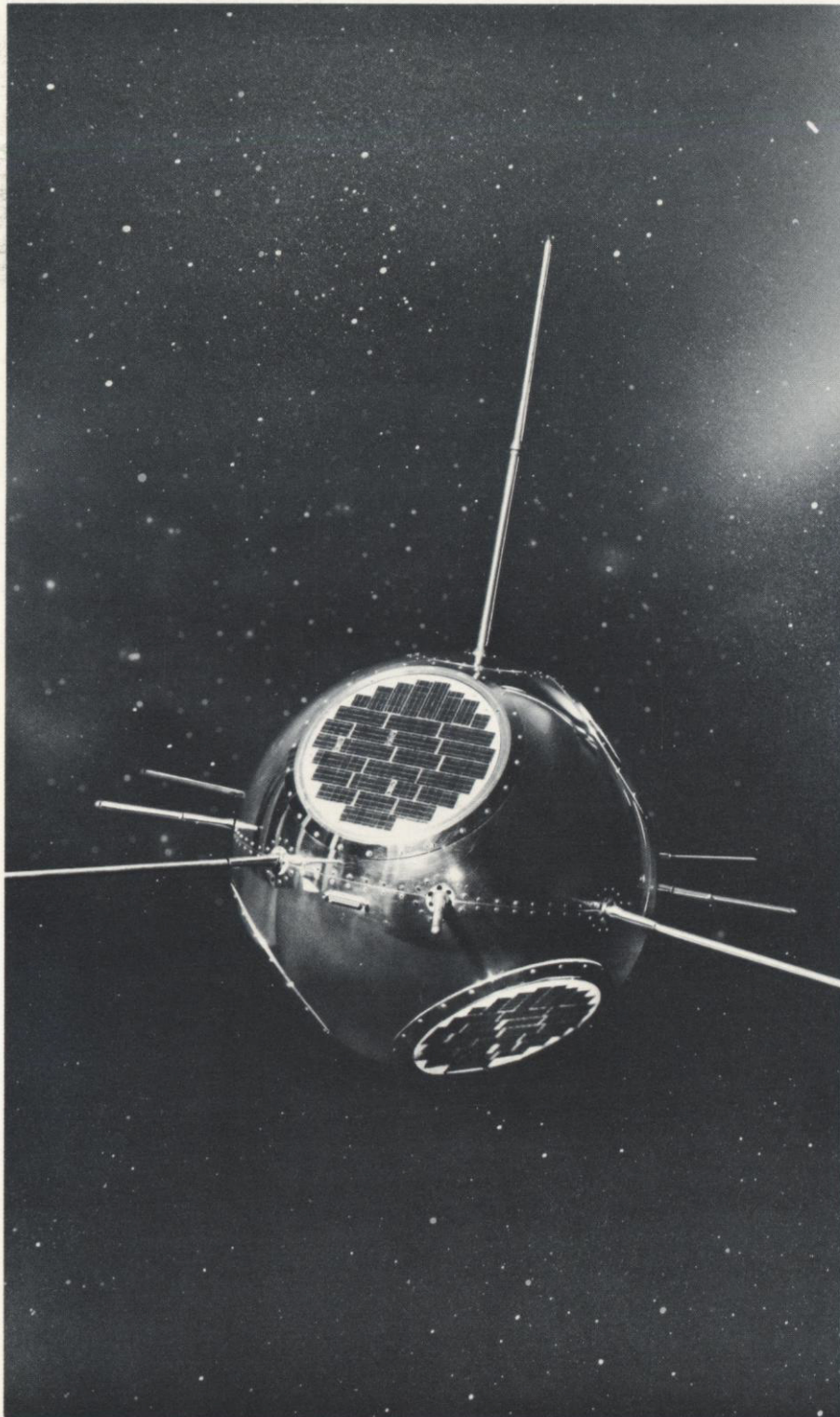
and surface of the earth was awarded to ITT Federal Laboratories (ITTFL) by the U. S. Army. Resulting studies are expected to provide information that will determine with greater accuracy the size and shape of the earth, and reveal any deviations from previously accepted geodetic theories.

A recent outstanding result of our space research is the new ITT transportable space-communications ground station designed and built entirely by ITTFL. During the year, one of these stations was flown to Brazil for communication experiments with the Relay satellite. Its successful operation in transmitting and receiving both voice and code via this satellite in January 1963 has opened up new market potentials. This will help make it possible to build economical and effective communication systems for developing areas throughout the world.

The Company's new electronics manufacturing installation, known as the ITT Arkansas Division, is located in Camden, Ark., in the center of the Southwestern region's expanding aerospace industry. The new division began assembly-type production of electronic equipment near the end of the year.

Our Industrial Products Division (IPD) is working on strategic power equipment for Project Apollo, the three-man spacecraft being readied for exploration of the moon.

Federal Electric Corporation (FEC) continued its strong participation in the national space program. Its contract with the National Aeronautics and Space Administration (NASA) to study, evaluate, and check out Project Mercury's telemetry systems



was renewed, and its prime contract to operate and maintain instrumentation and communications at the Pacific Missile Range's Naval Missile Facility was extended to include a remote tracking site at Point Pillar near San Francisco.

During his six-orbit Mercury Flight in 1962, Astronaut Walter M. Schirra, Jr., carried a unique Kel-O-Rad ultra-high-frequency transceiver installed in his survival kit. Developed by ITT Kellogg Communications Systems Division (CSD), this unique instrument is no larger than a package of cigarettes. It was available to keep the astronaut in constant voice communication with search aircraft and surface ships, if he had been forced to leave the spacecraft in the sea on landing. Aboard the recovery aircraft, a CSD-developed homing receiver pinpointed the Mercury spacecraft as it re-entered the earth's atmosphere. More than 100 of these receivers have been installed by CSD engineers in support of the Mercury recovery operations.

#### Special Space Study

ITT units in both the Fort Wayne and the California areas are deeply involved in space-age developments. Work at Fort Wayne includes a study contract from the NASA Marshall Space Flight Center to design, fabricate, and test hardware capable of properly aligning a vehicle prior to its launch from an earth orbit to a lunar orbit. This contract will make use of ITTFL's recently announced boresighted star tracker being developed for NASA's Orbiting Astronomical Observatory satellite program.

For weather satellites, ITT is de-

*ITT marked another milestone in its progress in space activity during 1962 when it was awarded a prime contract to construct a geodetic satellite (S-1) for the U. S. Army. The S-1, shown here as it would appear in operation, is to be used for gathering information that will result in more accurate maps.*

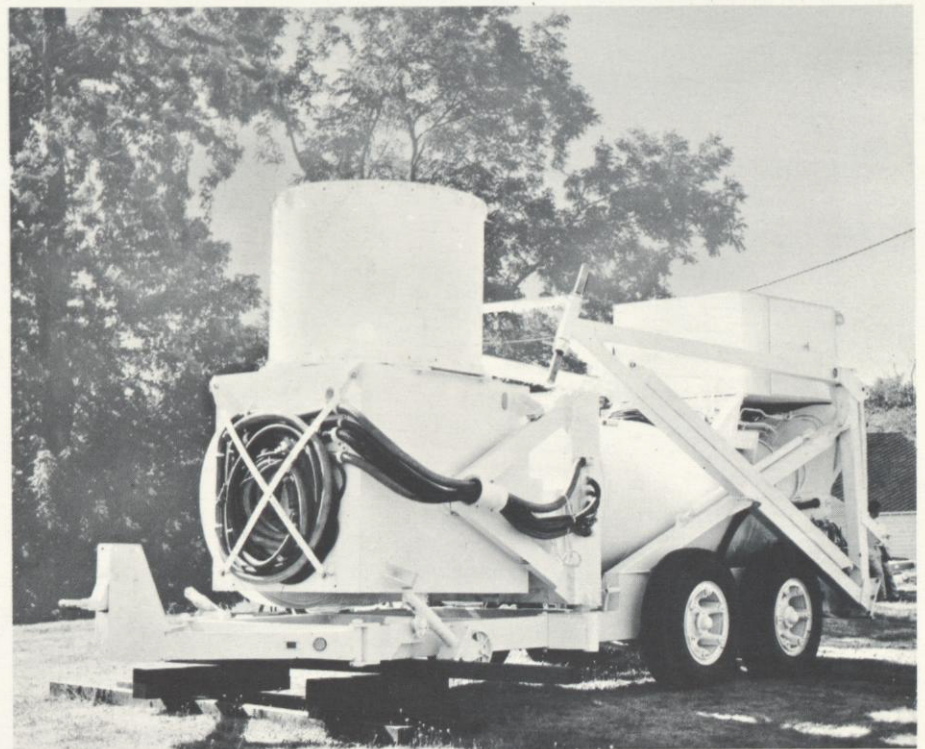
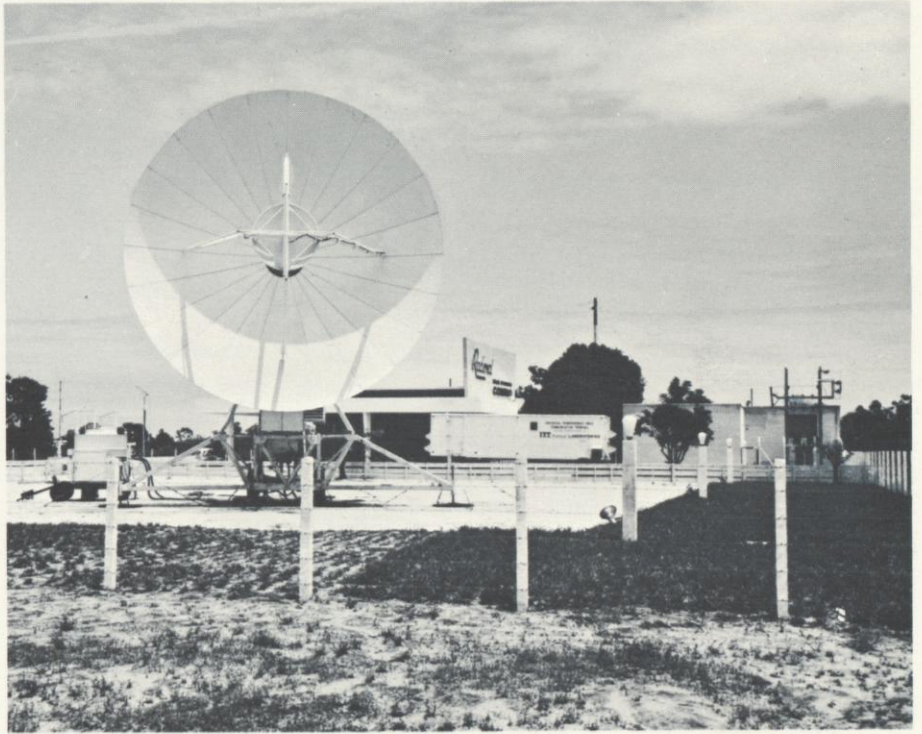
veloping an essential part of the payload, the high-resolution infrared radiometer that maps the night-time cloud formations all over the world and reports the amount of cloud cover and the temperature difference between the clouds and the earth—essential information for weather prediction.

In order to pre-test properly its equipment and components for space applications, ITT Industrial Laboratories (ITTIL), Fort Wayne, has recently constructed a small space simulator in the U. S. Designed to simulate, so far as is possible on the ground, the peculiar environments found 150 miles out in space, the ITT simulator will be used to check and improve operability of equipment that will later be installed in satellites.

Equipment developed by ITTIL was used by NASA to monitor the test performance of engines and other strategic parts of the Saturn, America's future man-to-moon rocket. Television cameras view the operating engines and record pictures that can be studied later a frame at a time to analyze performance.

Under contract to the Defense Communications Agency, our American Cable & Radio Corporation and ITTFL's Space Communications Laboratory are training military personnel in the operation of transportable space-communications terminals, such as the one successfully used in Brazil early in 1963 with the Relay satellite.

For the Navy Transit navigational satellite program, our ITTFL Astrionics Laboratory at Fort Wayne has furnished eight solid-state receivers



*Our space research in the United States led to the introduction in 1962 of a new transportable space-communications ground station that served as part of Project Relay's southern Terminal in Brazil, above. The station's support tower and antenna mount, retracted for shipment, are pictured below.*

for the ground tracking network. For NASA, the Astrionics Laboratory also prepared delivery of eight completely transistorized antenna auto-track receiver subsystems for use with large 85-foot-dish tracking installations.

To probe the secrets of the moon, ITTFL in Nutley has built a lunar seismometer, a super-sensitive device to detect quakes and other disturbances there. The unit will be part of the instrumentation for the Surveyor lunar vehicle, scheduled to be landed on the moon in 1963. The scientific data transmitted back to earth by the vehicle will become an essential part of the planning for future explorations of the moon.

### RESEARCH AND DEVELOPMENT

*"Underlying the achievements and continued growth of the ITT System is our work in research and development, which ensures this corporation's future . . ."*

From its beginning as a worldwide system of telephone operating and manufacturing companies, ITT has profited from its extraordinarily deep and widespread technical strength.

We now have approximately 25,000 scientists, engineers, laboratory technicians, draftsmen, and other specialists at work in all parts of the world. In 1962, the Company's System-wide expenditures for research and development, including contract engineering, amounted to \$150-million, compared with approximately \$130-million in 1961. More important, a major management program in recent years to improve the coordination of this worldwide activity has

begun to pay dividends in increased technical achievement without corresponding increase of cost.

In recent years we have steadily expanded our research on components, and on improvement of the materials and technologies that determine their properties and quality. We have placed special emphasis on "integrated circuits", in which the wiring is closely interrelated with some or all of the components. Such micro-circuits have required intensified research in materials, structure of matter, and processes for deposition of dielectric, metallic, and semiconductor films.

### INTEGRATED CIRCUITS, MATERIALS AND COMPONENTS

A new method of packaging components, known as "Ministack", has been developed in England through the cooperative efforts of Standard Telecommunication Laboratories (STL) and Standard Telephones and Cables Limited (STC), with the advice and cooperation of our French laboratory and our Belgian and West German manufacturing houses. This technology accommodates both today's components and integrated circuits in one standard package form. The keynote is flexibility that permits either manual or automatic assembly of small or large quantities.

#### Integrated Circuits

A very promising process for producing integrated circuits of the passive thin-film type has been developed by STC. A multistage vacuum apparatus used in this process comprises a series of rectangular vacuum chambers joined by high-vacuum locks. A "trolley" running

on rails carries a workload of units being processed from chamber to chamber. A succession of metal and dielectric films are sputtered and vacuum-evaporated to produce many circuits at a time, each including 5 to 10 resistors and capacitors, together with all necessary interconnections. By merely inserting the active elements, such as transistors and diodes, these circuits become complex working units.

In addition, development of the active-slab type of integrated circuit was started at the semiconductor division of STC, and functioning circuits were experimentally produced.

The high speeds of circuit operation resulting from such technology will sharply reduce the amount of equipment needed to perform any given electronic function.

#### Epitaxial Deposition of Materials

This term signifies the deposition of a thin film of crystalline material on a foundation plate made from a single crystal, in such a way that the atoms of the deposited layer line up with the atoms of the foundation plate. At STL in England, careful studies are being made of the exact nature of the epitaxial gas-deposition process. New significant facts have been observed, which may ultimately provide the fundamental knowledge necessary to permit better control and exploitation of the epitaxial deposition process. Also, a new kind of process for epitaxial deposition is under investigation at ITTFL.

#### Purification of Materials

Because the properties of components and integrated circuits, their quality, and their reliability, depend

mostly on the purity of the materials used, ITT is continuously seeking methods of attaining purer materials.

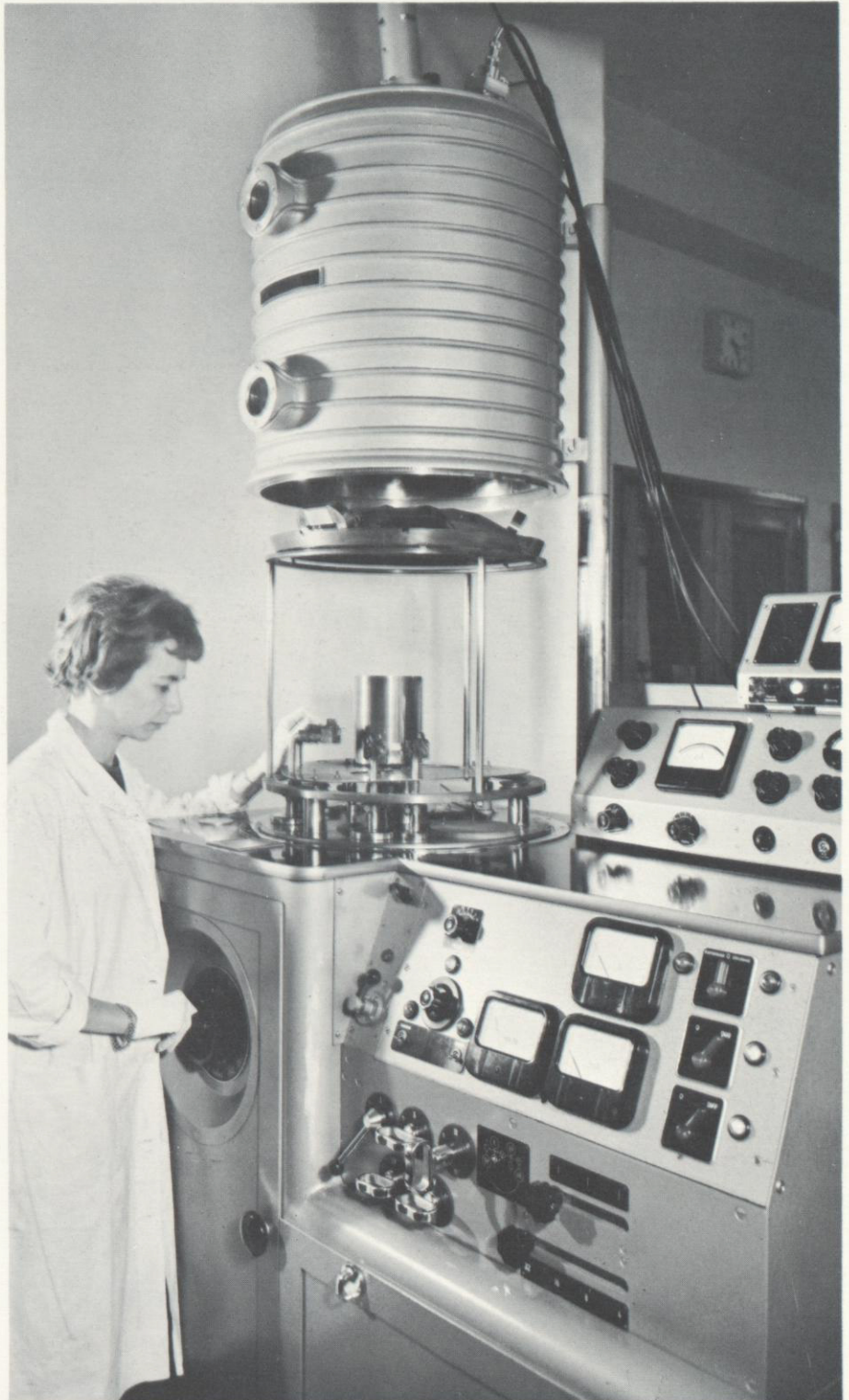
A vapor-phase ultra-purification process at ITTFL may ultimately provide the key to better yields or higher reliability of integrated circuits and key components. High purity is guaranteed by use of a new ionization measurement method sensitive to 1/100 of 1 millionth of a gram of impurity.

At this same laboratory a new process has been developed for quantity production of highly uniform, ultra-pure, sub-micron powder ceramic materials having important electronic characteristics.

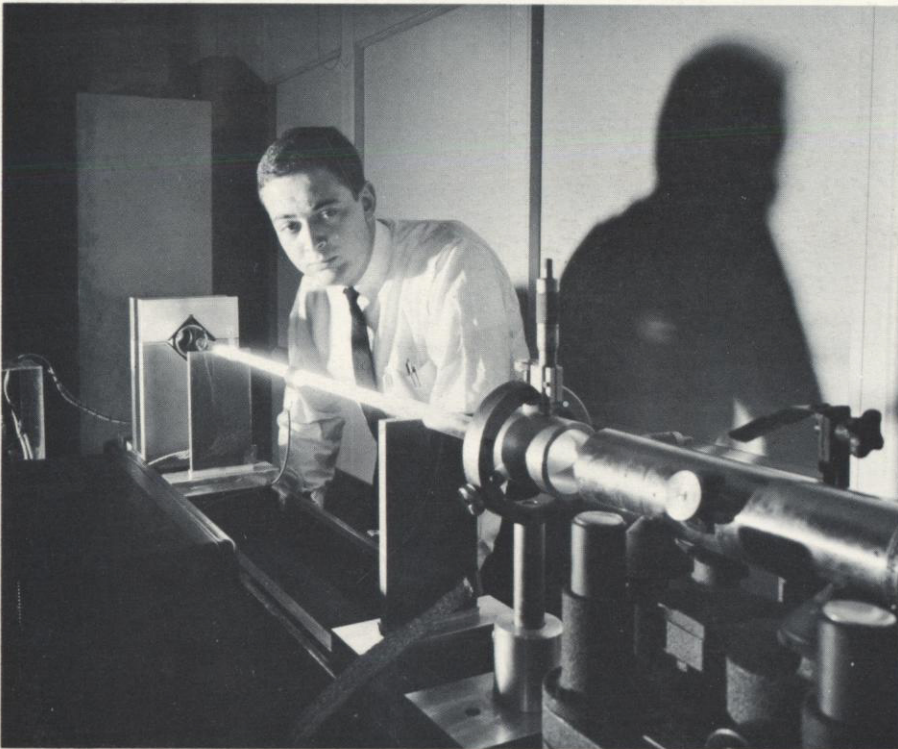
#### Magnetic Materials

In order to improve our understanding of the magnetic materials that are important in so many fields of our activity—for example, “memories” in telephone switching and transmission—STL has designed and produced an experimental apparatus that employs the Kerr magnetic optic effect to examine the dynamic magnetic changes taking place in one very tiny spot (150 microns in diameter) of the magnetic core when the magnetism of the core is rapidly reversed.

In 1962, ITT's Laboratoire Central de Télécommunications (LCT), Paris, after completing a theoretical and experimental study of electroplated magnetic films, started work on vacuum deposition of such magnetic films for memories. The objective is to develop a process that will permit a thousand or more memory elements to be produced at one time on one metal or ceramic sheet, complete with “read”, “write”,



*An important part of ITT's continuing research program is concerned with studies of magnetic materials important in many areas of the Company's activity, such as telephone switching and transmission. This is a view of one of our laboratories in England where these studies are under way.*



and "drive" wiring for these memories.

### Capacitors

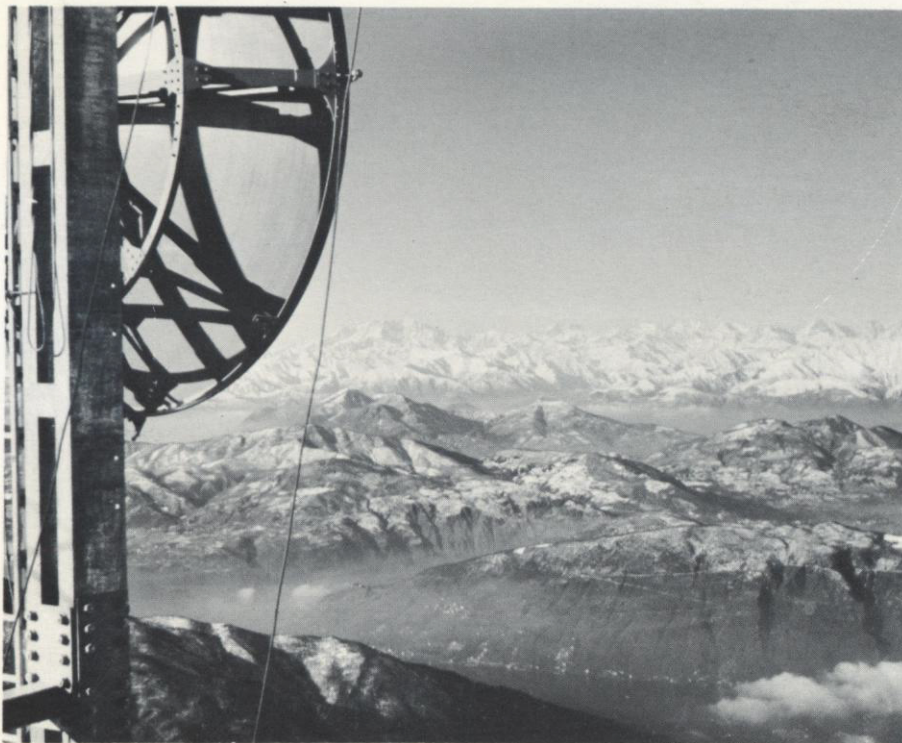
The Redox capacitor process developed at STC offers a hundred-fold increase in the capacity per unit volume of a ceramic capacitor. The process involves chemically reducing a normally insulating barium titanate ceramic to a conducting state and then re-oxidizing the surface.

The processes for producing capacitors with deposited thin-film dielectrics, developed by our Italian company, Fabbrica Apparecchiature per Comunicazioni Elettriche Standard S. p. A., Milan, are highly promising. Both the method of high vacuum and the method of evaporation and sputtering in a partial vacuum have been found to give useful products with good yields. It is expected that the capacitors made by these thin-film deposition processes will be added to our line of components because of their particular applicability to highly compact and low-voltage transistor circuitry.

### TELECOMMUNICATION

#### Lasers and Light Pipes

An alternative to the waveguide pipe for transmission of millimeter waves that STL has completed may prove cheaper and provide even larger communication capabilities. This is an underground telecommunication transmission system using light pipes that carry signals modulated on infrared or visible light waves produced by lasers developed in our laboratories. Preliminary studies by STL led to experiments on a new



*Above, ITT research in 1962 continued on the laser, a device for communicating by light beams on earth and in outer space. Below, reflector aerial supplied by our company in Zurich, Switzerland, for the Monte Generoso radio link terminal of the Zurich-Jungfrau-Lugano microwave radiotelephone system.*



form of underground light pipe, essentially different in principle from the light transmission ducts studied by other workers in this field and possibly useful for providing a lower-cost, narrower-band underground transmission system. The STL research also covered several different methods of externally modulating a beam of light from a laser so as to transmit many television channels and a very large number of telephone channels.

#### **Electronic Switching Systems**

A very successful development program on fully electronic telephone switching resulted in 1962 in ITT Kellogg's being the first U.S. company to announce a fully electronic PAX (private automatic exchange) and PABX (private automatic branch exchange).

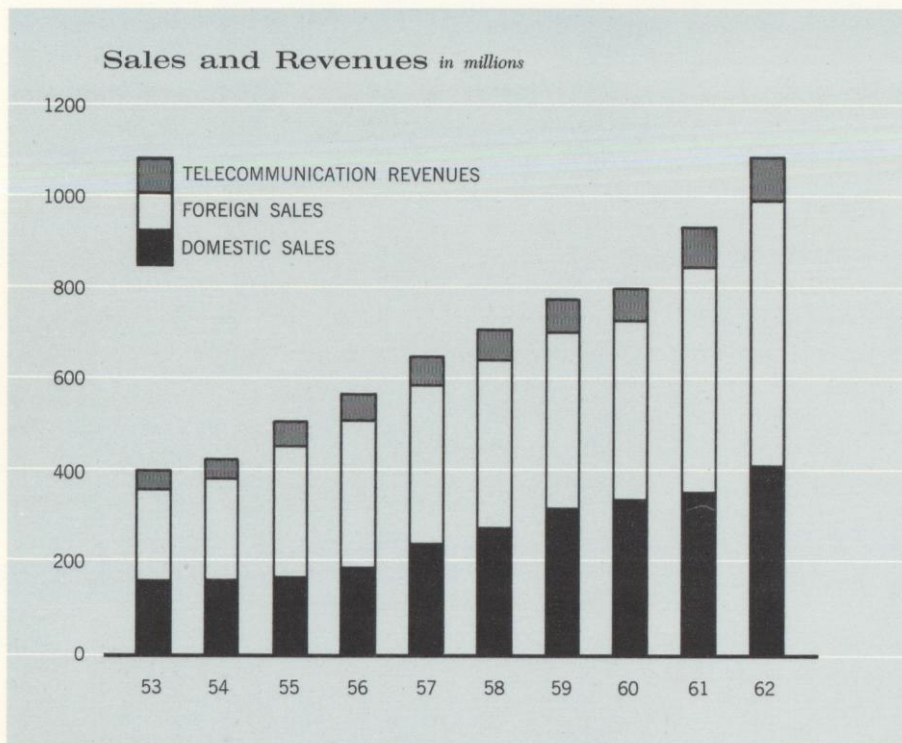
For still larger telephone exchanges, development continued in Germany and France on ITT's "semi-electronic" and "quasi-electronic" switching systems that will solve the problems and requirements of vastly expanding telephone networks and provide subscribers with many desirable new features and facilities. These ITT switching systems are essentially electronic, but employ electromechanical contacts for the actual speech paths. One system, which uses ITT's Pentaconta crossbar switch for closing the actual speech paths, is undergoing final engineering, design, and construction with a view to early field trials. Another similar system uses reeds hermetically sealed in glass capsules so that the only electromechanical part of the exchange is completely free of the effects of atmospheric humidity and dirt.

#### **Data Transmission**

The transmission of data through adapters of varying capacities, connected to the telephone network, is growing rapidly. To provide the facilities required for this in many parts of the world, ITT has developed in its Swedish company a considerable line of such adapters, often referred to as transmission modems.

In order to lay a proper foundation for the design of data detection and correction systems, studies and experiments were conducted by ITT in West Germany and England, and internationally between England and France, over different types of telephone circuits using different types of telephone equipment, in order to analyze the various forms of noise and their frequency and statistical distribution.

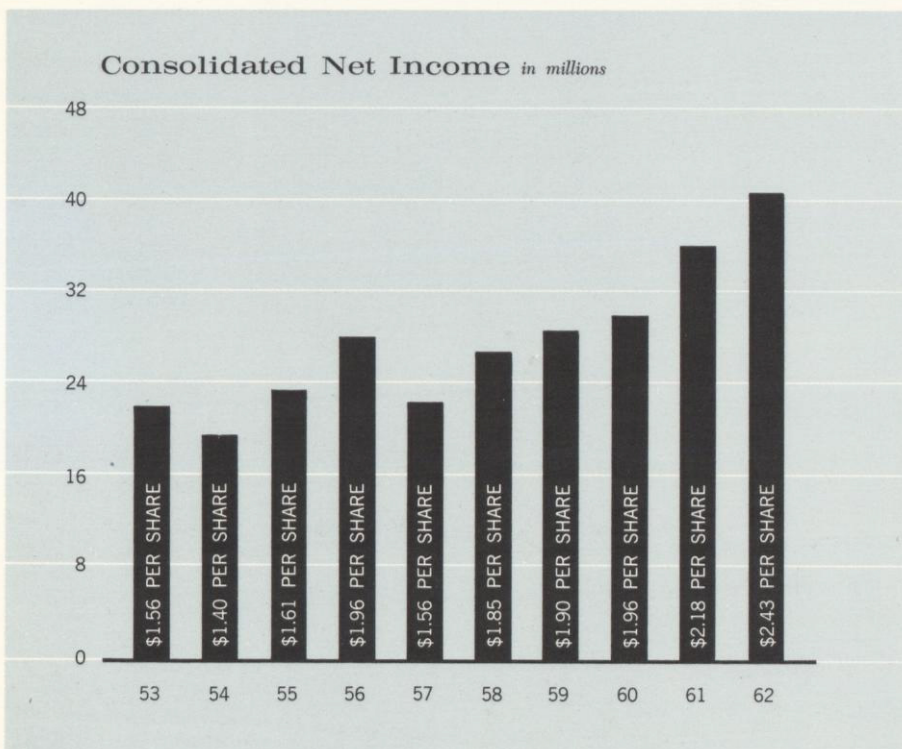
## Financial Summary



“... 1962 marked the third successive year in which our sales, under the present growth program, have risen to planned new highs . . . our earnings in 1962 paralleled this increase.”

Worldwide net income in 1962 again reached a new high for the Corporation on sales and revenues that for the first time exceeded one billion dollars. Consolidated net income of \$40,693,850 or \$2.43 per common share was \$4,634,816 or 12.9% higher than for 1961, excluding the effect of special items in that year.

Consolidated sales and revenues of \$1,090,198,359 exceeded those of the previous year by \$159,698,428 or 17.2%. Sales of the manufacturing subsidiaries and divisions for 1962 were \$995,527,825, an increase of \$155,674,552 or 18.5% over 1961. Revenues from utility operations of \$94,670,534 were \$4,023,876 or 4.4% higher than the preceding year.



### Sales and Revenues

The increase in sales and revenues was achieved in virtually all parts of the world in which we operate. Sales in the United States showed a particularly significant increase, accelerating the improvement in that area which has occurred in the last three years. European sales, 19.6% higher than last year, reflected an improved rate of our expansion in those markets. In Latin America, our operation was hampered by adverse economic and financial developments in certain countries. Nevertheless, sales and revenues increased by 6.7%. With the expansion of development aid

programs helped by the United States and others, we are optimistic concerning our continued growth in this area. In the Far East, we have emphasized the development of a stronger base of operations in the growing markets of that area.

### **Improvement in Net Income**

The largest percentage improvement in net income occurred in our United States commercial operations, which now contribute a much higher share of total earnings to the Corporation than in many years.

Despite the starting costs of new ventures, and other expenditures required to take better advantage of our opportunities in Europe, our earnings there continued to improve. As a result of the actions taken, we have strengthened our expectation of satisfactory profits from our growing participation in the expanding European economy.

In Latin America, notwithstanding weaknesses in several currencies and disturbed operating circumstances, we were able to maintain our net income at a relatively high level.

### **Dividend Payments**

In addition to fixed dividends on preferred stock, dividend payments totaling \$1.00 per common share were made during the year, the same as in 1961.

### **Plant Expansions**

During 1962, outlays of \$115,000,000 were made for plant and equipment,

approximately 10% higher than in 1961. Requirements for utility operations continued at a high level and accounted for \$64,000,000 of these expenditures. The latter are measured against revenues and included in our rate bases.

### **Financial Condition**

Cash and short-term investments at December 31, 1962 amounted to \$58,018,149 an increase of \$14,192,544 over the same date in 1961. Concentrated efforts were made during the year to achieve more effective use of working capital. Inventory and accounts receivable were brought into a better relationship with current and prospective sales.

So far as possible we have provided for future capital requirements from generated earnings. We shall continue to do so. However, it was considered desirable to take advantage of the long-term investment market existing in early 1962 to convert our large borrowings under lines of credit to long-term financing. Accordingly, an issue of \$50,000,000 of sinking fund debentures was sold at a very favorable interest rate. The proceeds were used in part to reduce short-term indebtedness. The balance was used for investment in required plant and facilities and to provide the higher working capital needed by a growing company.

Other major financing programs accomplished during the year were:

The Corporation, through a wholly owned subsidiary, was successful in selling on the Swiss financial market

in May 1962 Swiss Franc debentures in the total amount of SF 60,000,000, equivalent to approximately \$13,886,000. These debentures were sold at an interest rate of 4 $\frac{1}{4}$ % with an 18-year term. The proceeds of this issue were used to finance the Corporation's manufacturing subsidiaries abroad for increased plant expenditures and additional working capital.

Standard Elektrik Lorenz AG, our West German subsidiary, also sold, in the West German capital market in September 1962, debentures aggregating DM 35,000,000, equivalent to approximately \$8,750,000. Interest rate on these debentures was 6% with a 20-year term. The proceeds of the issue were used to finance the continued expansion of our operations in West Germany.

The financing by your Corporation through the issuance of debentures abroad relieves the U. S. financial market of the need to raise such funds and thereby assists the U. S. Government in its continued attempts to reduce the deficit in the balance of payments.

### **Financial Statements**

The consolidated financial statements of the Corporation and its subsidiaries consolidated and the opinion of our independent public accountants are presented on the following pages. A ten-year summary of the financial highlights of the Corporation and its subsidiaries consolidated follows the financial statements.

## Consolidated Balance Sheets

Assets	1962	1961
CURRENT ASSETS		
Cash, including temporary U. S. cash investments and \$21,575,391 and \$15,106,167 in foreign currencies	\$ 58,018,149	\$ 43,825,605
Accounts and notes receivable, less reserves	262,509,685	251,679,605
Inventories	332,895,647	302,713,374
	<u>653,423,481</u>	<u>598,218,584</u>
INVESTMENTS, DEFERRED RECEIVABLES AND OTHER ASSETS		
Finance subsidiaries	13,639,679	13,158,145
Nationalized companies \$33,182,391 and \$33,296,039 fully reserved	—	—
Other investments, at cost, less reserves of \$2,607,371 and \$2,588,528	61,936,593	43,654,926
Accounts receivable due subsequent to one year, less reserves	12,986,930	13,303,087
Other assets	31,471,644	28,628,352
	<u>120,034,846</u>	<u>98,744,510</u>
PLANT, PROPERTY AND EQUIPMENT, at cost	717,936,012	631,469,985
Less — Reserves for depreciation	255,613,385	240,122,757
	<u>462,322,627</u>	<u>391,347,228</u>
	<u>\$1,235,780,954</u>	<u>\$1,088,310,322</u>

*The accompanying notes to the financial statements are an integral part of the above balance sheets.*

as at December 31, 1962 and 1961

Liabilities and Stockholders' Equity	1962	1961
<b>CURRENT LIABILITIES</b>		
Bank loans and current maturities of long-term debt	\$ 98,372,126	\$ 115,978,563
Accounts payable and accrued charges	229,753,650	183,971,887
Accrued taxes	29,142,514	29,845,866
	<u>357,268,290</u>	<u>329,796,316</u>
<b>DEFERRED LIABILITIES, ETC.</b>	86,268,631	75,901,152
<b>LONG-TERM DEBT (Page 37)</b>	<u>266,815,281</u>	<u>182,508,530</u>
<b>MINORITY EQUITY IN SUBSIDIARIES CONSOLIDATED (Page 38)</b>	<u>41,898,110</u>	<u>35,043,370</u>
<b>STOCKHOLDERS' EQUITY</b>		
Cumulative Preferred Stock —		
Authorized — 300,000 shares, par value \$100 per share		
Outstanding — 5.25% Series, 40,000 shares	4,000,000	4,000,000
— 4% Convertible Series, 40,000 shares	4,000,000	4,000,000
— 4% Convertible Series B, 62,252 and 62,278 shares	6,225,200	6,227,800
Capital (common) Stock —		
Authorized — 30,000,000 shares, without par value (stated value \$10 per share)		
Outstanding — 16,628,853 and 16,375,060 shares	166,288,530	163,750,600
Capital surplus	102,310,801	102,230,969
Retained earnings invested in the business	200,706,111	184,851,585
	<u>483,530,642</u>	<u>465,060,954</u>
	<u>\$1,235,780,954</u>	<u>\$1,088,310,322</u>

**Consolidated Income** for the years ended December 31, 1962 and 1961

	<u>1962</u>	<u>1961</u>
Net Sales	\$ 995,527,825	\$839,853,273
Telecommunication Operating Revenues	94,670,534	90,646,658
	<u>1,090,198,359</u>	<u>930,499,931</u>
Cost of Sales and Operating Expenses	948,179,498	801,835,321
Provision for Depreciation	30,763,425	31,340,862
	<u>978,942,923</u>	<u>833,176,183</u>
Income from Operations	111,255,436	97,323,748
Other Income and (Deductions) —		
Dividends, Interest, Royalties and Other Income	21,012,677	12,972,168
Interest and Other Financial Charges	(22,206,781)	(17,338,197)
Net Income before Taxes and Minority Equity	<u>110,061,332</u>	<u>92,957,719</u>
U.S. and Foreign Taxes	65,812,323	54,133,285
Minority Common Stockholders' Equity in Net Income	3,555,159	2,765,400
	<u>69,367,482</u>	<u>56,898,685</u>
NET INCOME	40,693,850	36,059,034
SPECIAL CREDITS (CHARGES) (net of applicable income taxes)		
Profit on sale of investment in Nippon Electric Company, Limited	—	8,917,000
Settlement of Japanese war claims	—	3,683,000
Provisions for —		
Abandonment of North Atlantic cable facilities	—	(2,600,000)
Discontinuance of "Strad" data processing product line in England	—	(2,380,000)
NET INCOME AND SPECIAL ITEMS	<u>\$ 40,693,850</u>	<u>\$ 43,679,034</u>

**Consolidated Retained Earnings  
Invested in the Business**

BALANCE — Beginning of Year	\$ 184,851,585	\$168,698,325
ADD (DEDUCT) —		
Net income and special items	40,693,850	43,679,034
Dividends of the Corporation —		
Preferred stock	(619,039)	(209,048)
Common stock — \$1.00 per share	(16,512,228)	(15,968,337)
Undistributed earnings of the Brazilian telephone subsidiary	(7,708,057)	—
Adjustment of cost of previous investment in American Cable & Radio Corporation in connection with pooling of interests in 1961	—	(11,348,389)
BALANCE — End of Year	<u>\$ 200,706,111</u>	<u>\$184,851,585</u>

## Long-Term Debt – December 31, 1962

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION		
4.90% Sinking Fund Debentures, due April 1, 1987	\$50,000,000	
5½% Promissory Notes, due May 15, 1976	15,000,000	
4% Convertible Subordinated Debentures, due 1983 (convertible into capital (common) stock at \$18.50 per share)	5,244,200	\$ 70,244,200
UNITED STATES SUBSIDIARIES CONSOLIDATED		
INTELEX SYSTEMS INCORPORATED –		
5½% First Mortgage Notes, Series A, due monthly to 1980, on plant and property leased to U. S. Post Office		13,579,512
		<u>83,823,712</u>
TELECOMMUNICATION SUBSIDIARIES CONSOLIDATED		
AMERICAN CABLE & RADIO CORPORATION –		
5% long-term bank loans, due 1965-68	5,000,000	
INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION, SUD AMERICA –		
7½% Debentures, Series due 1977	10,000,000	
COMPANIA DE TELEFONOS DE CHILE –		
5% to 6% Installment Purchase Obligations, due 1964-67 – Held by finance subsidiary – BF 13,341,850; £ 457,683; U. S. \$701,630	2,249,980	
COMPANIA PERUANA DE TELEFONOS LIMITADA (Peru) –		
Held by finance subsidiaries –		
8% U. S. dollar Debentures, Series A, due annually 1964-75	2,490,000	
8% U. S. dollar Debentures, Series B, due annually 1964-76	1,305,000	
5½% to 8% Installment Purchase Obligations, due 1964-68	916,476	
PUERTO RICO TELEPHONE COMPANY –		
Twenty-Five Year 4¼% Sinking Fund Debentures, Series A, due 1978	4,400,000	
Twenty-Five Year 4¼% Sinking Fund Debentures, Series B, due 1981	4,700,000	
Twenty-Four Year 6% Sinking Fund Debentures, Series C, due 1984	8,000,000	
Twenty-Five Year 5¼% Sinking Fund Debentures, Series D, due 1986	12,500,000	
RADIO CORPORATION OF PUERTO RICO –		
Twenty-Five Year 5½% Sinking Fund Debentures, Series A, due 1984	5,000,000	
OTHER	315,696	56,877,152
FOREIGN MANUFACTURING SUBSIDIARIES CONSOLIDATED		
INTERNATIONAL STANDARD ELECTRIC CORPORATION –		
Eighteen Year 4¼% Swiss franc Debentures, due 1980 – SF 60,000,000	13,886,400	
Eighteen Year 4½% Swiss franc Debentures, due 1970-78 – SF 50,000,000	11,610,000	
Sixteen Year 4% Swiss franc Debentures, due 1964-70 – SF 60,000,000 (guaranteed by the Parent Company)	13,932,000	
Fifteen Year 4% Swiss franc Debentures, due 1974 – SF 50,000,000	11,610,000	
Five Year 4¼% Swiss franc Debentures, due 1965 – SF 18,000,000	4,179,600	
BELL TELEPHONE MANUFACTURING COMPANY (Belgium) –		
2% to 4% long-term bank loans, due 1964-70 – BF 54,750,000	1,095,000	
FABBRICA APPARECCHIATURE PER COMUNICAZIONI		
ELETTICHE STANDARD S.p.A. (Italy) –		
3% to 7½% long-term bank loans, due 1964-75 – IL 2,949,100,000	4,718,560	
LE MATERIEL TELEPHONIQUE (France) –		
3¾% to 6% Debentures, to be retired in annual lots to 1981 – FF 19,267,373	3,930,544	
6.65% long-term loan, due 1974 – FF 500,000	102,000	
STANDARD ELECTRICA, S.A. (Brazil) –		
27% (effective) long-term bank loans, due 1965 – CR 276,000,000	579,600	
6% Promissory Notes, due 1964-66 – CR 274,175,567	575,769	
5% Installment Purchase Obligations, due 1964-65 – Held by finance subsidiary – BF 17,376,550	347,531	
STANDARD ELEKTRIK LORENZ AG (Germany) –		
Twenty Year 6½% Debentures, due 1964-78 – DM 35,000,000	8,750,000	
Twenty Year 6% Debentures, due 1968-82 – DM 35,000,000	8,750,000	
4% to 7¼% long-term bank loans, due 1964-70 – DM 109,430,570	27,357,643	
STANDARD TELEPHON UND TELEGRAPHEN A.G. CZEIJA, NISSE & Co. (Austria) –		
4¼% to 8% Mortgage and bank loans, due 1964-82 – AS 42,096,745	1,633,354	
STANDARD TELEPHONES AND CABLES LIMITED (England) –		
6¼% Twenty Year Note, due 1978 – £ 1,500,000	4,200,000	
6½% Twenty Year Note, due 1978 – £ 1,500,000	4,200,000	
STANDARD TELEPHONES AND CABLES PTY. LIMITED (Australia) –		
5½% to 6½% Mortgage Loans, due 1964-76 – A £ 1,563,295	3,501,781	
OTHER	1,154,635	126,114,417
TOTAL LONG-TERM DEBT (excluding amounts due within one year included in current liabilities)		<u>\$266,815,281</u>

## Minority Equity in Subsidiaries Consolidated – December 31, 1962

### PREFERRED STOCK

#### PUERTO RICO TELEPHONE COMPANY –

6½% Cumulative Preferred Stock, Series A, of \$100 par value per share –  
40,000 shares \$ 4,000,000

6¼% Cumulative Preferred Stock, Series B, of \$100 par value per share –  
50,000 shares 5,000,000

#### STANDARD TELEFON OG KABELFABRIK A/S (Norway) –

4%-6% Non-cumulative Preferred Stock of NK 1,000 par value per share –  
6,000 shares 970,055      \$ 9,970,055

### COMMON STOCK AND SURPLUS

FOREIGN MANUFACTURING SUBSIDIARIES CONSOLIDATED 19,402,677

TELECOMMUNICATION SUBSIDIARIES CONSOLIDATED 12,525,378

#### TOTAL MINORITY EQUITY IN SUBSIDIARIES CONSOLIDATED

31,928,055

\$41,898,110

*The accompanying notes to the financial statements are an integral part of the above statement.*

## Auditors' Opinion

### ARTHUR ANDERSEN & Co.

80 Pine Street  
New York 5

*To The Stockholders,*

*International Telephone and Telegraph Corporation:*

*We have examined the consolidated balance sheets of International Telephone and Telegraph Corporation (a Maryland corporation) and its subsidiaries consolidated as of December 31, 1962 and 1961, and the related statements of consolidated income and consolidated retained earnings invested in the business for the years then ended. Our examinations were 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. It was not practicable to confirm receivables from certain governments, as to which, however, we have satisfied ourselves by other auditing procedures. Financial statements of certain foreign subsidiaries included in the consolidated statements were not examined by us but we were furnished with reports of other auditors thereon.*

*In our opinion, based upon our examinations and upon the reports of other auditors, the accompanying consolidated balance sheets and related statements of consolidated income and consolidated retained earnings invested in the business present fairly the financial position of International Telephone and Telegraph Corporation and its subsidiaries consolidated as of December 31, 1962 and 1961, and the results of their operations for the years then ended, in conformity with generally accepted accounting principles consistently applied during the period.*

*Arthur Andersen & Co.*

New York, N. Y.  
February 25, 1963



# Notes to Financial Statements

## 1. PRINCIPLES OF CONSOLIDATION

The financial statements include the accounts of all significant majority-owned subsidiaries except for the Brazilian telephone subsidiary and the finance subsidiaries. The accounts of the Brazilian telephone subsidiary have been excluded from the consolidated financial statements effective January 1, 1962 as a result of the governmental expropriation in 1962, of a substantial portion of such subsidiary's properties. The investments in finance subsidiaries are carried at amounts equivalent to the equity in their underlying net assets. The earnings of these subsidiaries (\$1,766,825 in 1962 and \$1,288,390 in 1961) are included in "Dividends, Interest and Other Income" in the consolidated statement of income. A summary of the combined financial position of these subsidiaries as at December 31, 1962 and 1961 is shown on page 40.

The net income of the Parent Company alone amounted to \$20,910,181 and \$17,780,504 for the years 1962 and 1961, respectively, and its retained earnings at December 31, 1962 amounted to \$68,408,815, of which \$35,291,288 was available for payment of dividends on capital stock of the Corporation.

The undistributed earnings of foreign subsidiaries included in consolidated retained earnings should not be understood to represent U. S. dollars immediately available, since the retained earnings of some foreign subsidiaries are subject to certain restrictions on the amount of dividends that may be paid and to taxes payable on declaration of dividends.

Procedures followed in translating accounts of foreign subsidiaries into terms of U. S. dollars were consistent with those of preceding years. Net assets are translated, generally, at the applicable rates of exchange in effect at the year end, except for property and investment accounts which are translated at historic cost; and the income accounts are translated, generally, at the average rates of exchange prevailing during the year, except for provisions for depreciation which are translated on the basis of the U. S. dollar equivalents of the related net asset accounts. Foreign exchange gains or losses, including those arising from translation of net assets at year end, have been included in consolidated net income.

A general grouping of net assets as at December 31, 1962, and net income for the year 1962 by location and by principal operations is shown below:

	CONSOLIDATED	DOMESTIC	FOREIGN MANUFACTURING	TELECOM- MUNICATIONS	OTHER FOREIGN INVESTMENTS
<i>Thousands of Dollars</i>					
<b>NET ASSETS AT DECEMBER 31, 1962</b>					
Net current assets .....	\$296,155	\$112,395	\$190,186	\$(16,504)	\$10,078
Investments, deferred receivables and other assets ..	120,035	22,673	51,848	13,453	32,061
Plant, property and equipment—net .....	462,323	59,790	146,447	256,086	—
	<u>878,513</u>	<u>194,858</u>	<u>388,481</u>	<u>253,035</u>	<u>42,139</u>
Deduct—					
Deferred liabilities, etc. ....	86,269	5,706	63,545	17,018	—
Long-term debt .....	266,815	83,824	126,114	56,877	—
Minority equity in subsidiaries consolidated .....	41,898	—	20,373	21,525	—
	<u>394,982</u>	<u>89,530</u>	<u>210,032</u>	<u>95,420</u>	<u>—</u>
Consolidated net assets .....	<u>\$483,531</u>	<u>\$105,328</u>	<u>\$178,449</u>	<u>\$157,615</u>	<u>\$42,139</u>
<b>NET INCOME for the year (after allocation of parent company interest and taxes) .....</b>	<u>\$ 40,694</u>	<u>\$ 6,031</u>	<u>\$ 20,105</u>	<u>\$ 11,689</u>	<u>\$ 2,869</u>

## 2. INVENTORIES

Inventories at December 31, 1962 and 1961, are detailed below:

	1962	1961
<b>Manufacturing:</b>		
Finished goods	\$100,493,824	\$100,085,839
Work in process	187,354,121	149,514,399
Raw materials and supplies	73,041,401	66,895,235
	<u>360,889,346</u>	<u>316,495,473</u>
Less progress payments	40,177,300	27,129,524
Net	<u>320,712,046</u>	<u>289,365,949</u>
<b>Telecommunications:</b>		
Maintenance and construction materials and supplies, generally at average cost	12,183,601	13,347,425
	<u>\$332,895,647</u>	<u>\$302,713,374</u>

Finished goods, raw materials and supplies are stated, generally, at the lower of cost or market. Work in process includes substantial amounts of costs accumulated under firm electronic equipment orders

and defense contracts. Under the companies' accounting policies for recording profits on these orders and contracts, the inventory amounts are at or below realizable value.

## 3. CAPITAL STOCK

Under the Corporation's several Stock Option Incentive Plans and a Restricted Stock Option, as approved by the Stockholders, a total of 908,000 shares (net of 22,000 shares for which the authority to grant options has expired) of the present capital stock of the Corporation were made available for options to employees of the Corporation and its subsidiaries. Options granted to September 1, 1959 were generally made exercisable in whole or in part by such employees after two years, but not later than seven years after date of grant. Options granted subsequent to September 1, 1959 are exercisable to the extent of one-third of the optioned shares after two years, to the extent of two-thirds after three years and in full after four years, but not after five years from date of grant. The price for the shares covered by each option prior to June 14, 1961 was 95% of the fair market value of the stock on the date such option was granted. The price for the shares covered by each option granted from June 14, 1961 is 100% of the fair market value on the date such option is granted. As at December 31, 1962, 304,447 shares have been

## Notes to Financial Statements

issued on exercise of options since the inception of the Plans. A summary of shares subject to options during the year 1962 is shown below:

Balance, January 1, 1962	289,035
Add — Options granted at \$37.25 to \$56.75 per share	145,500
	<u>434,535</u>
Deduct —	
Options exercised at \$14.875 to \$38.125 per share	27,232
Options cancelled	48,502
	<u>75,734</u>
Balance, December 31, 1962	<u>358,801</u>

At December 31, 1962, 244,752 shares were available for future options.

Under the conversion provisions of the 4 $\frac{3}{8}$ % Convertible Subordinated Debentures, 286,092 shares of the unissued capital stock of the Corporation were reserved for conversion of such Debentures at December 31, 1962. In connection with the conversion of \$1,588,300 principal amount of these Debentures, 85,779 shares of capital stock were issued during 1962.

Under the conversion provisions applicable to the Cumulative Preferred Stock 4% Convertible Series and 4% Convertible Series B, 170,425 shares of the unissued capital stock of the Corporation were reserved for conversion of such preferred stock at December 31, 1962. In connection with the conversion of 26 shares of such preferred stock, 41 shares of capital stock were issued during 1962.

As a part of the exchange for substantially all of the business and net assets of Jennings Radio Manufacturing Corporation in 1961, the Corporation issued non-transferable Certificates of Contingent Interest representing rights to receive in annual installments, over a period ending not later than March 15, 1966, shares of the Corporation's capital stock having an aggregate value of as much as \$8,000,000 if certain increasing annual net earnings goals of Jennings operations after January 1, 1961 are met. The number of shares to be issued pursuant to the Certificates of Contingent Interest are determined by the average market price for the Corporation's capital stock for specified periods and within certain limits. If all earnings goals are achieved, after giving effect to shares issued in 1962 and to be issued in 1963, the minimum number of shares remaining issuable under the Certificates is 48,000 shares and the maximum is 192,000 shares. Pursuant to such provisions, 28,741 shares of capital stock having an aggregate market value of \$1,600,000 were issued in 1962 and 34,652 shares of capital stock having a comparable aggregate market value (representing the maximum amount deliverable in respect of 1962 earnings of Jennings), will be delivered to holders of Certificates of Contingent Interest by March 15, 1963.

#### 4. CAPITAL SURPLUS

Changes in capital surplus during the year are shown below:

Balance — January 1, 1962	\$102,230,969
Add (Deduct) —	
Credits arising from —	
Conversions of debentures and preferred stock	707,620
Exercise of stock options	263,148
Excess of stated value of 112,000 shares of capital stock of Corporation over net assets of National Computer Products, Inc. acquired in 1962	(966,800)
Stated value of 28,741 shares of capital stock of Corporation issued pursuant to Certificates of Contingent Interest	(287,410)
Amount applicable to Brazilian telephone subsidiary	363,274
Balance — December 31, 1962	<u>\$102,310,801</u>

#### 5. DEPRECIATION POLICY

Substantially all new property constructed or acquired by the Corporation and its domestic subsidiaries, other than American Cable & Radio Corporation and its domestic subsidiaries, subsequent to 1954 is being depreciated on the books in accordance with the declining balance method. All such depreciation is allowable under the Revenue Code of 1954. American Cable & Radio Corporation and its domestic subsidiaries provide depreciation on a straight-line basis in their accounts as required by the Federal Communications Commission but claim liberalized depreciation under the declining balance method for income tax purposes.

The European manufacturing subsidiaries, as a requirement for taking maximum allowable depreciation deductions for tax purposes, have been providing book depreciation on a variety of accelerated bases under methods allowed by the tax laws of their individual countries. As of December 31, 1962, the gross plant of these subsidiaries aggregated \$259 million and the depreciation reserve thereon amounted to \$131 million or approximately 54% of the depreciable property contained therein.

As of January 1, 1962 the Corporation, in view of the multiplicity of depreciation methods in use and the heavily increased capital investment program, which commenced in Europe in 1961 and which will continue, adopted a policy of restating in consolidation, depreciation on a uniform straight-line basis for all European manufacturing subsidiaries (providing book reserves for any deferred foreign income taxes), using approximately the same periods of useful life as heretofore. If the various tax bases of depreciation were applied to the year 1962 in place of the uniform book depreciation policy, net income would have been reduced by approximately \$2-million after applicable income taxes.

#### 6. COMMITMENTS AND CONTINGENCIES

Reference is made to "Telecommunication Operations" in this report with respect to the interim arrangement made for the settlement relating to the properties of the telephone subsidiary in Brazil, expropriated in February, 1962.

A U. S. Government Agency, has indicated that under the terms of a contract with such agency, the Corporation may be liable for liquidated damages of a substantial amount for failure to meet delivery schedules specified in the contract. The Corporation believes that negotiations presently in progress will not result in the assessment of any significant amount of damages.

The ultimate liability with respect to guarantees, pending lawsuits, taxes, claims, etc., is not considered to be material in relation to the consolidated financial position.

The Corporation has entered into an agreement for the merger of General Controls Co. into the Corporation, subject to the approval of the stockholders of the respective companies.

## ITT Finance Subsidiaries

### COMBINED FINANCIAL POSITION

	December 31	
	1962	1961
Cash	\$ 1,707,683	\$10,806,538
Receivables, less unearned income—		
Affiliated companies	30,837,842	8,981,494
Other customers	32,411,300	32,823,312
Net investment in rental contracts	11,594,183	10,462,544
Plant, property and equipment, less reserves	8,779,056	4,859,228
Deferred charges and prepayments	705,508	476,548
Total assets	<u>86,035,572</u>	<u>68,409,664</u>
Long-term debt	48,198,876	38,442,308
Short-term bank borrowings	20,993,798	14,383,063
Accounts payable and accrued charges	3,203,219	2,426,148
Total liabilities	<u>72,395,893</u>	<u>55,251,519</u>
ITT equity in net assets	<u>\$13,639,679</u>	<u>\$13,158,145</u>
ITT equity represented by —		
Common stock	\$12,566,793	\$12,566,559
Reinvested earnings	1,072,886	591,586
	<u>\$13,639,679</u>	<u>\$13,158,145</u>

## Ten-Year Summary\*

	<u>1962</u>	<u>1961</u>	<u>1960</u>	<u>1959</u>	<u>1958</u>	<u>1957</u>	<u>1956</u>	<u>1955</u>	<u>1954</u>	<u>1953</u>
	<i>(In thousands of dollars)</i>									
<b>Results for Year</b>										
Sales and revenues	1,090,198	930,500	811,449	765,640	687,451	638,669	544,834	489,746	412,619	397,297
U. S. and foreign taxes	65,812	54,133	50,266	45,343	42,410	41,458	45,237	39,781	31,795	32,960
Provision for depreciation	30,763	31,341	25,066	27,433	24,516	23,048	19,203	17,908	15,688	14,652
Net income	40,694	36,059	30,570	29,036	26,600	22,413	28,110	23,070	20,069	22,378
Special credits**	—	7,620	7,902	—	—	—	—	—	—	—
<b>Year-End Position</b>										
Net current assets	296,155	268,422	269,324	222,269	233,963	200,828	203,945	199,986	180,567	156,294
Plant, property and equipment — net	462,323	391,347	288,461	355,115	303,609	260,250	229,842	208,021	190,489	186,529
Total assets	1,235,781	1,088,310	923,944	932,269	869,006	799,873	760,838	687,452	636,970	602,761
Long-term debt	266,815	182,509	148,478	165,512	158,963	97,293	87,841	78,156	72,324	55,904
Stockholders' equity	483,531	465,061	415,814	415,088	395,739	375,440	365,939	350,747	336,971	324,079
<b>Per Share</b>										
	<i>(In dollars)</i>									
Net income (average shares)	2.43	2.18	1.96	1.90	1.85	1.56	1.96	1.61	1.40	1.56
Special credits (average shares)**	—	.47	.51	—	—	—	—	—	—	—
Dividends	1.00	1.00	1.00	1.00	.90	.90	.90	.65	.50	.50
Common stockholders' equity	28.22	27.53	26.52	26.73	26.87	26.16	25.50	24.44	23.48	22.58
<b>Other Data</b>										
Number of shares (in thousands)	16,629	16,375	15,681	15,530	14,726	14,353	14,353	14,353	14,353	14,353
Number of stockholders	92,362	94,719	87,818	88,230	67,112	65,642	62,486	58,889	56,937	57,437
Number of employees	157,000	149,000	132,000	136,000	130,000	128,000	122,000	111,000	102,000	96,000

\* The above data are as reported for the respective years, including Cuban operations for all years prior to 1960, and excluding operations for prior periods of companies acquired in 1961, except that per-share amounts have been adjusted for 2-for-1 stock split effective February 5, 1959.

\*\* Net profit on sale of investments, etc.

# International Telephone and Telegraph Corporation

## Principal Divisions and Subsidiaries

### NORTH AMERICA

#### U.S.A.

Federal Electric Corporation, Paramus, N. J.  
Industrial Products Division, San Fernando, Calif.  
International Electric Corporation, Paramus, N. J.  
International Standard Electric Corporation, New York, N. Y.  
ITT Arkansas Division, Camden, Ark.  
ITT Communication Systems, Inc., Paramus, N. J.  
ITT Credit Corporation, New York, N. Y.  
ITT Distributor Products Division, Lodi, N. J.  
ITT Electron Tube Division, Clifton, N. J.  
Kuthe Laboratories, Inc., Newark, N. J.  
ITT Export Corporation, New York, N. Y.  
ITT Farnsworth Research Corporation, Fort Wayne, Ind.  
ITT Federal Laboratories, Nutley, N. J.  
ITT Industrial Laboratories Division, Fort Wayne, Ind.  
ITT Information Systems Division, Paramus, N. J.  
Airmatic Systems Corporation, Saddle Brook, N. J.  
Intelx Systems Incorporated, New York, N. Y.  
ITT Intelcom Inc., Bailey's Cross Roads, Va.  
ITT Kellogg Communications Systems Division, Chicago, Ill.  
ITT Kellogg Telecommunications Division, Chicago, Ill.  
ITT Semi-Conductors, Inc., Lawrence, Mass.  
National Transistor, Lawrence, Mass.  
International Telephone and Telegraph Corporation,  
Sud America, New York, N. Y.  
Jennings Radio Manufacturing Corporation, San Jose, Calif.  
Kellogg Credit Corporation, New York, N. Y.  
Royal Electric Corporation, Pawtucket, R. I.  
Surprenant Mfg. Co., Clinton, Mass.

#### Canada

ITT Canada Limited, Montreal  
Royal Electric Company (Quebec) Ltd., Pointe Claire, P. Q.

### EUROPE, MIDDLE EAST, AFRICA

#### Algeria

Société Algérienne de Constructions Téléphoniques, Algiers

#### Austria

Standard Telephon und Telegraphen Aktiengesellschaft,  
Czeija, Nissl & Co., Vienna

#### Belgium

Bell Telephone Manufacturing Company, Antwerp  
ITT Europe, Inc., Brussels

#### Denmark

Standard Electric Aktieselskab, Copenhagen

#### Finland

Standard Electric Puhelinteollisuus Oy, Helsinki

#### France

Compagnie Générale de Constructions Téléphoniques, Paris  
Les Téléimprimeurs, Paris  
International Standard Engineering, Inc., Paris  
Laboratoire Central de Télécommunications, Paris  
Le Matériel Téléphonique, Paris

#### Germany (West)

Standard Elektrik Lorenz Aktiengesellschaft, Stuttgart  
Eduard Winkler Apparatebau G.m.b.H., Nuremberg  
SEL Feinmechanik G.m.b.H., Kaufbeuren  
SEL Finanz G.m.b.H., Stuttgart

#### Iran

Standard Electric Iran AG, Tehran

#### Italy

Fabbrica Apparecchiature per Comunicazioni Elettriche  
Standard S.p.A., Milan  
Società Impianti Elettrici Telefonici Telegrafici Edili, Milan

#### Netherlands

Nederlandsche Standard Electric Maatschappij N.V.  
The Hague

#### Norway

Standard Telefon og Kabelfabrik A/S, Oslo

#### Portugal

Standard Eléctrica, S.A.R.L., Lisbon

#### Republic of South Africa

Standard Telephones and Cables (South Africa) (Proprietary) Limited, Boksburg East, Transvaal

#### Spain

Compañía Internacional de Telecomunicación y Electrónica, S.A., Madrid  
Compañía Radio Aérea Marítima Española, S.A., Madrid  
Standard Eléctrica, S.A., Madrid

#### Sweden

Standard Radio & Telefon AB, Stockholm

#### Switzerland

ITT Standard S.A., Basle  
Standard Téléphone et Radio S.A., Zurich  
Steiner S.A., Berne

#### Turkey

Standard Elektrik ve Telekomünikasyon Limited Şirketi, Ankara

#### United Kingdom

Creed & Company Limited, Croydon  
International Marine Radio Company, Croydon  
Standard Telephones and Cables Limited, London  
Kolster-Brandes Limited, Sidcup  
Standard Telecommunication Laboratories Limited, London  
Ace Radio Limited, Rhyl (Wales)  
Robert Maclaren & Co. Ltd., Glasgow  
Regentone Products Limited, London

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## LATIN AMERICA

### MANUFACTURING AND SALES

#### Argentina

Compañía Standard Electric Argentina, S.A.I.C., Buenos Aires

#### Brazil

Standard Eléctrica, S.A., Rio de Janeiro

#### Chile

Compañía Standard Electric, S.A.C., Santiago

#### Mexico

Industria de Telecomunicación, S.A. de C.V. (50% interest),  
Mexico City  
Standard Eléctrica de México, S.A., Mexico City

#### Puerto Rico

ITT Caribbean Manufacturing Inc., Rio Piedras

#### Venezuela

ITT Standard de Venezuela, S.A., Caracas

### TELECOMMUNICATION OPERATIONS

#### Argentina

Compañía Internacional de Radio, S.A., Buenos Aires

#### Bolivia

Compañía Internacional de Radio Boliviana, La Paz

#### Brazil

Companhia Rádio Internacional do Brasil, Rio de Janeiro  
Companhia Telefônica Nacional, Curitiba

#### Chile

Compañía de Teléfonos de Chile, Santiago  
Compañía Internacional de Radio, S.A., Santiago

#### Cuba

Cuban American Telephone and Telegraph Company  
(50% interest), Havana  
Radio Corporation of Cuba, Havana

#### Peru

Compañía Peruana de Teléfonos Limitada, Lima

#### Puerto Rico

Puerto Rico Telephone Company, San Juan  
Radio Corporation of Puerto Rico, San Juan

## Virgin Islands

Virgin Islands Telephone Corporation, Charlotte Amalie

## FAR EAST AND PACIFIC

### Australia

Standard Telephones and Cables Pty. Limited, Sydney

### Hong Kong

ITT Far East and Pacific, Inc., Hong Kong

### Japan

ITT Far East and Pacific, Inc. (branch), Tokyo

### New Zealand

Standard Telephones and Cables Pty. Limited (branch),  
Upper Hutt, Wellington

### Philippines

ITT Philippines, Inc., Makati, Rizal

## WORLDWIDE CABLE AND RADIO TELEGRAPH OPERATIONS

American Cable & Radio Corporation, New York  
All America Cables and Radio, Inc., New York  
Commercial Cable Company, The, New York  
Globe Wireless Ltd., New York  
Mackay Radio and Telegraph Company, New York  
Sociedad Anónima Radio Argentina, Buenos Aires

## ASSOCIATE LICENSEES FOR MANUFACTURING

(Minority Interest)

### Australia

Austral Standard Cables Pty. Limited, Melbourne

### France

Lignes Télégraphiques et Téléphoniques, Paris

### Italy

Società Italiana Reti Telefoniche Interurbane, Milan

### Japan

Nippon Electric Company, Limited, Tokyo  
Sumitomo Electric Industries, Limited, Osaka

### Spain

Marconi Española, S.A., Madrid

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## The World of ITT

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### North America

26,000 employees  
6,115,000 square feet of floor space

### Europe, Middle East, Africa

110,000 employees  
16,770,000 square feet of floor space

### Latin America

18,000 employees  
1,020,000 square feet of floor space (manufacturing only)

### Far East and Pacific

3,000 employees  
770,000 square feet of floor space

### Totals

157,000 employees  
24,675,000 square feet of floor space

Sales representatives in most countries

# Principal ITT System Products

## Telecommunication Equipment and Systems

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Automatic telephone and telegraph central office switching systems  
Private telephone and telegraph exchanges – PABX and PAX, electromechanical and electronic  
Carrier systems: telephone, telegraph, power-line  
Long-distance dialing and signaling equipment  
Automatic message accounting and ticketing equipment  
Switchboards: manual (local, toll), dial-assistance  
Test boards and desks

Telephones: desk, wall, pay-station  
Automatic answering and recording equipment  
Microwave radio systems: line-of-sight, over-the-horizon  
Radio multiplex equipment  
Coaxial cable systems  
Submarine cable systems, including repeaters  
Data-transmission systems  
Teleprinters and facsimile equipment

## Military/Space Equipment and Systems

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Aircraft weapon systems  
Missile fuzing, launching, guidance, tracking, recording, and control systems  
Missile-range control and instrumentation  
Electronic countermeasures  
Electronic navigation  
Power systems: ground-support, aircraft, spacecraft, missile  
Radar

Simulators: missile, aircraft, radar  
Ground and environmental test equipment  
Programmers, automatic  
Infrared detection and guidance equipment  
Global and space communication, control, and data systems  
Nuclear instrumentation  
Antisubmarine warfare systems  
System management: world-wide, local

## Industrial/Commercial Equipment and Systems

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Distance-measuring and bearing systems: Tacan, DMET, Vortac, Loran  
Instrument Landing Systems (ILS)  
Air-traffic control systems  
Direction finders: aircraft, marine  
Ground and airborne communication  
Data-link systems  
Inverters: static, high-power  
Power-supply systems  
Altimeters  
Flight systems  
Railway and power control and signaling systems  
Information-processing and document-handling systems  
Analog-digital converters  
Mail-handling systems  
Pneumatic tube systems  
Broadcast transmitters: AM, FM, TV

Studio equipment  
Point-to-point radio communication  
Marine radio  
Mobile communication: air, ground, marine, portable  
Closed-circuit television: industrial, aircraft, and nuclear radiation  
Slow-scan television  
Instruments: test, measuring  
Oscilloscopes: large-screen, bar-graph  
Vibration test equipment  
Magnetic amplifiers and systems  
Alarm and signaling systems  
Telemetry  
Intercommunication, paging, and public-address systems  
Pumps: centrifugal, circulating (for domestic and industrial heating)

## Consumer Products

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Television and radio receivers  
High-fidelity phonographs and equipment  
Tape recorders  
Microphones and loudspeakers  
Refrigerators and freezers

Air conditioners  
Hearing aids  
Incandescent lamps  
Home intercommunication equipment  
Electrical housewares

## Cable and Wire Products

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Multiconductor telephone cable  
Telephone wire: bridle, distribution, drop  
Switchboard and terminating cable  
Telephone cords  
Submarine cable  
Coaxial cable, air and solid dielectric

Wave guides  
Aircraft cable  
Power cable  
Domestic cord sets  
Fuses and wiring devices  
Wire, general-purpose

## Components and Materials

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Power rectifiers: selenium, silicon  
Transistors  
Diodes: signal, zener, parametric, tunnel  
Semiconductor materials: germanium, silicon, gallium arsenide  
Picture tubes  
Tubes: receiving, transmitting, rectifier, microwave, klystron, magnetron, thyatron, traveling-wave  
Capacitors: paper, metalized paper, electrolytic, mica, plastic film  
Ferrites  
Magnetic cores  
Relays: telephone, industrial, vacuum

Switches: telephone (including crossbar), industrial  
Magnetic counters  
Resistors  
Varistors, thermistors, Silistors  
Quartz crystals  
Filters: mechanical, quartz, optical  
Circuits: printed, thin-film, integrated  
Hermetic seals  
Photocells and photomultipliers  
Infrared detectors  
Antennas  
Motors and turn-tables



International Telephone and Telegraph Corporation

