Annual Report 1997





If you've ever taken a bend too fast on a slippery road, this ad is for you.

Electronic Stability Program (ESP) is a new safety system which guides cars through wet or icy bends with more safety. Developed by Bosch, it's already been installed by eight manufacturers in 16 models.

ESP prevents dangerous lateral movements and also works with the Antilock Braking System (ABS), another Bosch innovation, to avoid wheel lock and a linear skid. The key is a yaw-rate sensor, which detects vehicle movement around its vertical axis, and software which recognises critical driving situations, and responds accordingly. In an instant, instructions are sent to the engine, transmission and brakes, thereby countering a skid at its onset. Of course, the best way of ensuring a safe journey is to drive carefully because we can not rewrite the laws of physics.

Bosch. We bring innovation

BOSCH

Front-page illustration: At the heart of the electronic stability program (ESP) is the yaw-rate sensor which registers all the wehicle's movements around its vertical axis. For the latest generation of this sensor, Bosch pioneered a micromechanical chip which will go into volume production during 1998. The sketch above shows a vehicle's tire forces in the longitudinal and transverse directions as a function of the brake slip at its front left wheel. The above is an example from the current institutional adverticing campaign with which Bosch presente its innovative capabilities. These advertisements appear in 15 countries outside Germany.

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## **Key Figures**

Bosch Group Worldwide	1997	1996	
Sales	46.851	41,146	
Change versus prior year	+ 13.9%	+ 14.8%	
Foreign sales			
as a percentage of sales	65	61	
Research and development expenditures	3,257	2,887	
as a percentage of sales	7.0	7.0	
Additions to tangible fixed assets	2,905	2,419	
as a percentage of depreciation	125	117	
Number of employees			
average for the year	179,719	172,359	
as of January 1, 1998/1997	180,639	176,481	
Total assets	34,906	32,273	
Equity capital	11,377	9,527	
as a percentage of total assets	33	30	
Net income for the year	1,659	500	
Unappropriated earnings	2,209	67.5	

Values in million DM

### Management Report

Growth of the world economy accelerated in 1997; world production increased by 3.5%. The improvement continued above all in North America and Western Europe with growth rates of 3.7% and 2.5%, respectively. In contrast, the economic recovery of Japan again came to a standstill.

The growth process also continued in most of the emerging countries of Latin America and Asia as well as in several Central and East European countries changing over from state economies. The exceptions to this process are the Southeast Asian countries and Korea, whose economies worsened considerably as a result of their financial crises.

### Brisk foreign demand resulted in a strong increase in sales

In this environment the Bosch Group developed satisfactorily; increased business was generated above all by foreign demand. The German economy improved during the second half of the year as well and many of our plants operated at the limit of their capacity. For the first time since 1991, employment in Germany increased again.

Total consolidated Bosch Group sales for 1997 increased by 13.9% to 46.9 billion DM. Approximately four percentage points of the increase are attributable to the inclusion of new acquisitions for the full year. These were included in 1996 results only on a pro-rata basis and comprise primarily the automobile hydraulic-brake business, the French manufacturer of gaspowered heaters e.I.m. Leblanc, and the full take-over of S-B Power Tool Company in the USA. Another four percentage points result from currency exchange-rate movements.

While sales in Germany stagnated at 16.2 billion DM, foreign sales increased by 22.8% to 30.7 billion DM. The growth rates in Turkey, Mexico, Brazil and India were especially high. Foreign sales as a portion of total sales further increased to 65% (1996: 61%).

### Strongest growth in consumer goods

Of the four business sectors, the strongest growth took place in consumer goods – power tools, thermo-technical equipment, and household appliances; their sales increased by 19.5% to 11.1 billion DM. Foreign demand in this area was especially strong.

Double-digit growth also occurred in the automotive equipment area. Sales here grew by 17.5% to 28.7 billion DM. Particularly large increases took place in the areas of antilock braking systems and brakes, and in injection equipment for diesel engines.

In the Capital Goods Business Sector – automation technology and packaging machinery – sales increased by 5.1% to 2.1 billion DM due to renewed economic activity in the mechanical-engineering industry.

### Sales Progress 1993 – 1997 (billion DM)



### Sales per employee Progress 1993-1997

(thousand DM)





Sales only declined in the Communications Technology Business Sector, with a drop of 8.7 % to 5.0 billion DM. This was primarily caused by the disposal of the private mobile radio business. The decrease is largely offset by the acquisition of the Danish manufacturer of mobile telephones, Dancall Telecom A/S, Pandrup (now: Bosch Telecom Danmark A/S). This company had 1997 sales of nearly 300 million DM, which however have not yet been included in the consolidated financial statements.

### Integration supports new business development

The integration of the acquisitions made in 1996 and 1997 has significantly contributed to the development of our business. Integration took place according to plan and was well received by our customers.

In particular, the integration of the automobile hydraulic-brake business with 24 additional locations worldwide was a demanding challenge for the company and its employees. We not only achieved entry into an additional market, but our broad product offering in the braking-equipment area also created additional demand for our antilock braking systems.

### Great challenges in automotive equipment

We pioneered development of an Electronic Stability Program (ESP) which we brought to market in 1995. Wide application of this system is emerging, even in the entire range of mid-size cars. In order to be able to supply our customers rapidly with the desired quantities, we are significantly expanding our development and production capacities for this system.

A new market for our gasoline-injection technology is opening up in Europe. The transition from intakemanifold injection to gasoline direct injection is imminent. We expect that from the year 2000 onward European gasoline engines will be equipped more and more with direct injection. We are developing systems for gasoline direct injection in joint projects with nearly all European car manufacturers (see also page 10).

In the diesel injection area we have launched three new electronically controlled high-pressure injection systems during the past two years. We thus have available an optimal solution for every engine concept. Here too, we are creating the necessary conditions to be able to produce the high volumes demanded by our customers.

### New markets for communications technology

We have further expanded our foreign activities in communications technology. The acquisition of Dancall strengthens our position in the rapidly growing market for mobile telephones based on the GSM standard (Global System for Mobile Communication). We will quadruple our production capacity in this area by the year 2000 and have started building a new production and development facility in Pandrup (Denmark). We acquired the radio-access-network business from Texas Instruments Inc., Dallas, Texas. This complements our activities in the area of public communication networks and will contribute significantly to opening the North American market for Bosch communications technology (see also page 15).

### Stronger involvement in Asian markets

We acquired additional shares in our long-standing licensee, Zexel Corporation, Tokyo. We are now, with about 30%, the largest shareholder of this Japanese automotive equipment supplier. Together, we want to expand our position in the Asian markets in the area of new diesel-injection systems.

To that purpose, together with Zexel, we have founded a company in Korea for the application engineering and marketing of electronically controlled high-pressure injection systems. We hold 55% of the shares of Korea Advanced Diesel Equipment Co Ltd, Seoul. The Korean automobile manufacturers are currently developing a new generation of diesel engines to meet the coming emission standards in Korea and Europe. To do so, they will need electronically-controlled injection systems.

### Sale of kitchen furniture business

In November 1997 we sold our subsidiary Hans Feierabend GmbH, Einbeck. The purchaser will continue to produce kitchen furniture under the Bosch name.

### Marketing reorganization

We are orienting our marketing structures in Europe more and more towards its growing single market. After having formed a common marketing organization for Scandinavia in 1996, we also united our trade activities in the Benelux countries in 1997.

Our marketing activities outside Europe were also expanded. We founded our own sales companies in China and New Zealand and opened a liaison office in Indonesia.

We are in the process of reorganizing our cooperation with Bosch wholesalers in Germany. The marketing of automotive equipment products is to be given a broader base.

### Nearly 60 suppliers recognized for their quality

More and more, we combine our requirements for production material across business sectors and national borders. Total worldwide purchases in the Bosch Group, including services, trade goods and capital investments, came to 24.2 billion DM in 1997 (1996: 20.9 billion DM).

Investments in tangible fixed assets Progress 1993–1997



### Investments in tangible fixed assets Progress as a percentage of sales 1993–1997





Selectively, we supported European suppliers in the planning of their overseas production activities. In order to intensify utilization of purchasing opportunities in Far East markets, we brought together our purchasing offices in Asia in one organization.

An essential component of our activities remains the search, together with our suppliers, for solutions which further improve the quality of parts and subassemblies for our products, and which reduce costs.

Since 1987 we have honored our suppliers every two years for quality and exceptional achievements. In 1997, 56 suppliers received an award, three of them for the sixth time.

### Initiative to reduce complexity

As part of our CIP (Continuous Improvement Process) we have started an initiative to reduce complexity. Its goal is to further simplify products and processes, and to make them even more customer-oriented. To achieve this, pilot projects were conducted in four areas: Variance management, supplier logistics, product development, and application engineering. At present we are preparing to expand these projects to all business divisions.

We further focused on the intensification of the CIP-activities of our companies outside Germany.

### Higher expenditures for research and development

In order to protect our competitiveness, it is essential that we increase our innovative power and further develop our products so that we can produce them more cost-efficiently with similar or expanded functionality. In our work, special emphasis is being placed upon ESP, high-pressure diesel injection systems, gasoline direct injection, and mobile telephones.

We increased the financial commitment to research and development in 1997 by 12.8% to 3.3 billion DM. As a percentage of sales, R&D expenditures during the past ten years rose from 5.9% in 1988 to 7.0% in 1997. In the area of automotive equipment, that percentage considerably exceeds the industry average.

### Increased investments in tangible fixed assets.

Investments in tangible fixed assets increased 20.1% to 2.9 billion DM or 125% of depreciation on tangible fixed assets. Approximately 47% (1996: 53%) of these investments were made in Germany.

The portion for machinery and equipment was 93% (1996: 93%). In land and buildings we invested 205 (1996: 174) million DM, of which 44 (1996: 57) million DM were invested domestically and 161 (1996: 117) million DM abroad. The construction started in 1996 at the vehicle proving grounds at Boxberg (Baden-Württemberg) was largely finished. In India we commenced construction of another plant for the manufacture of injection equipment for diesel engines.

### The number of employees increased further

The expansion of business had a noticeable effect on the number of employees. On annual average, the number of employees worldwide increased in 1997 by 7,360 to 179,719.

New jobs were created especially in the Automotive Equipment Business Sector.

### Improvement in profitability

Our profitability has improved continuously since its low point in 1993. The increase in income from ordinary business activities in the years 1994 to 1996 was primarily the result of persistent cost reduction activities. In 1997, stronger measures for the improvement and, if necessary, discontinuance of money-losing products showed positive effects.

### Outlook for current year

In April 1998, the shareholders of Robert Bosch GmbH decided to increase the company's capital stock from 1,500 million DM to 1,800 million DM by applying the "pay-outand-reinvest" method. The respective interests of the shareholders in Robert Bosch GmbH remain unchanged. We do not expect changes in the overall economic conditions in comparison to 1997. Economic growth in the industrial countries will continue at the same pace. We expect a weaker development in the developing and emerging countries.

Subsequent effects on the world financial markets of the currency turbulence in Southeast Asia and the banking crisis in Japan are as yet unclear. These risks curb our sales expectations.

Overall we expect a further rise in our sales. Above all, the continued strong foreign demand set the tone for the order inflow during the early months of 1998.



### Expenditures for research and development



### Automotive Equipment Business Sector



The demand for automobile navigation systems is on the uproving worldwide. We are reinforcing our strong position in this area with an extensive range of digital road maps. In 1997 motor-vehicle production rose to 54 (1996: 52) million units worldwide. The highest rates of increase, exceeding 5%, were in Western Europe and Japan. Automobile production in the United States, however, stagnated.

Our Automotive Equipment Business Sector increased worldwide sales by 17.5% to 28.7 billion DM.

### Systems partner for international car makers

In the medium term, above-average increases in automobile production can be expected in Eastern Europe, Latin America, and parts of Asia. In these markets we are also able to offer car makers up-to-date products manufactured regionally. We are present in all important markets with our basic product groups such as antilock braking systems, brakes, injection technology for both gasoline and diesel engines, electronic control units (ECU's), and engine and body electrics.

Our integrated global manufacturing system is supported by a growing network of international research and development facilities. We are represented in all regions of the world by application-engineering centers, where we develop products further and adapt them to the needs of motorvehicle manufacturers. Based on an extensive product line of electronic, electric, precision-mechanical, and hydraulic components, we are fulfilling the growing demand for systems solutions. The core for this is formed by the increasing integration and linkage of functions in the vehicle. In offering systems in partnership with its customers, Bosch contributes worldwide to mastering the technical and business challenges which confront them.

### Broad application of vehicle dynamics control expected

Demand for the vehicle dynamics control ESP (Electronic Stability Program) is growing at an uncommonly strong pace. In 1997, 50,000 high-end vehicles were equipped with this system. In the meantime, broad use all the way into mid-range vehicles is emerging. We are hard at work on simpler and lower-cost systems. To that end, among other things, new micromechanical sensors are being developed.

Since we now also have a complete program available for the basic brake, we developed a total system which is enthusiastically received by our customers. It consists of an antilock braking system (ABS), wheel brake and brake applicator including brakepedal module. Further add-on functions include traction control (TCS), and vehicle dynamics control (ESP).

Important in the further development of both disk and drum brakes is the improvement of comfort in use. Analytic and experimental tests to avoid noise and vibrations are being conducted with high priority.

We developed new wheel-speed sensors, which are now able to register wheel speeds down to zero. Their signals can therefore also be used in other systems, such as vehicle navigation.

### Xenon light also for mid-size cars

In December 1997 we introduced into the market the third generation of our "Litronic" headlight system with gaseous-discharge lamp. Further miniaturization of the control electronics, coupled with the integration of the headlight leveling control, means that the use of xenon light also becomes possible in the lower echelon of mid-size cars.

Another contribution to safety in the area of lighting technology is made by our dynamic headlight leveling control. It reacts by adjusting the headlamp range even if only brief movements of the body take place, such as can occur when braking or accelerating.

As a styling element, the headlamp with clear lens is continuing to gain in importance. In such cases, the light diffusion which otherwise takes place through the lens has to be taken over by the reflector. To this end we further developed the complex reflectorshape calculation methods.

#### New system for engine management

In 1997 we started volume production of the new ME7 engine-management system for gasoline engines. It not only controls fuel injection and ignition, but also the throttle valve operated by an electric motor. With the new computer architecture for open and closed-loop control electronics, additional vehicle functions, such as gearshift control, TCS, or ESP can be more easily implemented. The ME7 system also provides the prerequisites for further reductions in fuel consumption and pollutant emissions.

### Sales of automotive equipment Progress 1993–1997 (billion DM)



From 1994 onwards, including sales of car radios, and automotive display and navigation systems

#### Automotive market

Percentage of ABS-equipped vehicles as compared to passenger-car production in selected markets 1996/1997

1996 1997



 $^{9}$ 

#### Passenger-car market

Percentage of diesel-engine passenger cars in total new-car registrations in selected markets 1996/1997



densey meaning

We started volume production of the "Common Rail" accumulator injection system for diesel engines in 1997.

### Developments in gasoline direct injection

Fuel-injection technology for gasoline engines is on the threshold of a radical change. Future gasoline engines will be increasingly equipped with direct injection. This offers considerable potential for further reductions in fuel consumption.

We developed the control functions and the necessary components, such as the high-pressure pump, the fuel rail with pressure-control valve and pressure sensor, as well as the highpressure injector. The ME7 ECU is expanded by modules for the directinjection functions.

### Diesel injection systems for various engine concepts

Worldwide demand for diesel engines remains strong. The need for highpressure injection systems for directinjection diesel engines in passenger cars and light commercial vehicles is increasing strongly, especially in Western Europe. The demand for the VP44 radial-piston distributor pump continues to rise. In our first year of production we already delivered 100,000 injection systems of this type.

According to plan, we completed preparation for volume production of the VP29/30 solenoid-valve-controlled axial-piston distributor pump for small diesel engines. Preparation began for volume production of unit injectors for passenger cars, a single-cylinder injection system which allows for very high injection pressures.

We commenced full production of "common rail" accumulator injection systems for passenger cars, which for the first time enable the injection pressures to be varied for different engine speeds and loads.

With our solenoid-valve-controlled systems we have optimal injection system solutions for all engine concepts. This creates the conditions necessary for replacing on a broad scale the previously used turbulencechamber engines by direct-injection engines with their even better fuel economy.

In 1997 we also made further progress in diesel-injection equipment for heavy commercial vehicles. Strict emission limits require the introduction of electronically controlled singlecylinder high-pressure injection systems for such vehicles.



We are well prepared for future market demands with our unit pump and unit injector systems.

### Plastics technology in the engine compartment

Since the middle of 1997 we have two new electric plug-connector types available which function reliably even under high vibrational stress and extreme temperatures. These are part of a broad range of products for the electric connections between engine components and safety systems.

State-of-the-art plastics contribute to lowering engine weight. Integration of various components also reduces final-assembly costs. For example, functions such as oil separation, pressure regulation for venting the crankcase, air filtering, exhaust-gas recirculation, or adjustment of intake-manifold lengths can be combined in larger and cost-efficient modules. We supply such modules with various numbers of functions and degrees of integration.

### Use of hybrid technology in transmission controls

For the control of automatic transmissions, we condensed mechanics and electronics into the smallest space possible in order to further lower costs and to reduce weight and volume requirements. The integration of solenoid valves, pressure regulators, and control technology into hydraulic modules opens up new areas of business.

In view of the high temperatures and extreme vibration acceleration, fitting the control electronics into the transmission itself requires that the printed-



circuit technology be replaced by compact hybrid technology. In 1997 we began developments for the first batch production projects.

The increasing employment in vehicles of continuously variable transmissions (CVT) and automatic transmissions, represents a solid basis for the use of our electronic and mechanical transmission components. This enhances our position as an ideally-suited partner in the development of automatic transmissions for small and mid-size cars in a rapidly growing market.

We began volume production of CVT pushbelts for torque levels appropriate to the performance of mid-size cars. In order to expand the utilization of CVT, we began new developments for still higher levels of torque. More and more vehicles are equipped with continuously variable transmissions (CVT). We supply the CVT pushbelts.



We are currently developing a number of components for fuel-efficient gasoline direct-injection. Our photo shows the analysis of air/fuel mixture formation using laser measurement technology.

### Liquid-cooled alternator ready for production

Volume production of the second generation of the proven compact alternator was started simultaneously in the U.K., Brazil and Mexico.

We developed a liquid-cooled alternator to the mass-production stage. It meets the requirements of future vehicle electrical systems. Its performance in excess of 150 amps is practically noiseless. At the same time, the elimination of collector rings increases its service life.

We are working on high-performance vehicle electrical systems, which, when used with two batteries, an ECU, and matching alternators, improve energy management in the vehicle. Also under development are systems which combine the functions of starter and alternator. They are suited for high performance and can be combined with various vehicle electrical systems.

### Power assist for automatic clutching

We took up production of an electricmotor-driven power assist for automatic operation of the clutch. For the automation of conventional manualshift transmissions we are developing power assists for gear selection and shifting.

We introduced a new generation of fans to the market. The output of the air-conditioner blower was increased approximately 30% and energy consumption reduced accordingly.

### Control equipment and sensors for airbag deployment

The development of new ECU's for airbag deployment was brought to a conclusion. Thanks to their modular concept, these are significantly more cost-effective than prior versions.

The ECU's will also incorporate functions to recognize accident severity and for monitoring the safety belt. We are furthermore developing sensors which detect seat occupation and vehicle rollover when this is imminent.

European customers more and more equip their vehicles with side airbags. We offer side-impact ECU's and sensors.

### Strong demand for electronic parking aids

Demand for the electronic parking aid "Parkpilot" is rising steeply. We were able to attract new customers in European countries and in the United States.

### First Blaupunkt car radio for TMC radio traffic service

The market volume for car radios in Europe rose little in 1997. However, the business with car makers rose disproportionally more. Weak consumer demand had a negative influence on the aftermarket. Our subsidiary Blaupunkt-Werke GmbH was able to maintain its overall market position.

A new era in public radio traffic services started in Germany with the Traffic Message Channel (TMC). We contributed by launching the first TMCcompatible car radio. It offers the possibility to select specific traffic information for individual regions, expressways or motorways, and other long-distance routes. During the early summer of 1997 we started delivering the radiophone. With this world innovation we integrated a GSM mobile telephone into a car radio. We are in the process of expanding this instrument with a voice controller.

### Strong commitment to vehicle navigation

Demand for vehicle-navigation systems is growing worldwide. We are among the most significant European suppliers in this area. Important components of the new Travelpilot generation – an electronic yaw-rate sensor and a complete satellite receiver – were integrated into the computer housing. This simplified installation in the vehicle.

During 1997 we supplied six European automobile manufacturers with eight different navigation systems. The spectrum of products ranges from simple devices with monochrome displays all the way to complex driverinformation systems with color monitors for the display of maps, and with the capability to receive television broadcasts. We have meanwhile produced a large number of digital road maps for vehicle navigation. In addition, for our systems, car drivers have at their disposal more than 20 travel guides in specific fields or regions.

### Position in the international aftermarkets enhanced

Our position in the replacement-parts market for European car makers was strengthened, especially by offering an extended range of services. We increased European sales of aftermarket products, especially of spark plugs, wiper blades, starters, alternators, and glow plugs.

In North America we further improved our market position. Especially high sales increases were achieved in Asia and Australia. The range of spare parts offered for American and Asian vehicles was broadened.

An important basis for the worldwide expansion of our aftermarket activities is our service organization with about 10,000 Bosch service centers and 100,000 employees in 132 countries.

### Automotive market

Motor-vehicle production in selected markets 1996/1997 (in million units)

1996 1997



Germany Western Europe USA J

### Automotive Equipment - 1997 Highlights

Sales	28.7 billion DM
Investments	2.2 billion DM
Research and Development	2.3 billion DM

### Communications Technology Business Sector



In 1997, we made a major breakthrough with radio-relay technology in the rapidly growing Chinese market. As a first, we established a radio-relay network for a network operator in China. The turnkey installation comprises eleven digital radio-relay stations and was handed over in late 1997. The market for communications technology also grew rapidly in 1997. Growth rates were high, especially in mobile communications.

Sales of the Communications Technology Business Sector decreased however to 5.0 (1996: 5.4) billion DM. This resulted primarily from the sale of the private mobile radio business. Sales of Dancall Telecom A/S (now Bosch Telecom Danmark A/S), which we acquired towards the end of April, 1997, more or less offset the overall decline in sales. These sales have not yet been included. The company will be consolidated for the first time in the 1998 financial statements.

### Activities in mobile communications boosted

With the take-over of Dancall, we acquired development and manufacturing know-how in the rapidly growing market for mobile telephones based on the GSM standard (Global System for Mobile Communication). We also gained access to business with network operators and service providers. We have a competitive product line of state-of-the-art equipment for all GSM frequencies.

At the International Radio and TV Exhibition in Berlin, we introduced dual-band telephones. They enable selective access to several different networks and can switch frequency bands automatically (seamless handover). Connections remain intact even after changing networks.

The business in cordless telephones using the DECT standard (Digital Enhanced Cordless Telecommunication) grew strongly. We launched a user-friendly model with integrated answering machine. New is the "direct dial-in" feature for such equipment. This permits outside callers to dial-up subscribers within the reach of a base station directly.

### Many new developments for public networks

The liberalization of telecommunications in Western Europe and the opening of markets in fast-growing industrialized and emerging countries have heated up the competition for the best and most economically efficient network concept.

We have thoroughly prepared ourselves for the change in market conditions with many new developments. The core product in the field of access networks is our Bosch Access Network, the first version of which we launched in 1997. It is based on active optical transmission technology. Several regional network operators in Germany placed orders with us for pilot projects. The first regular operation of the Bosch Access Network started at year-end.

The new DMS (Digital Multipoint System) radio access system is aimed at network operators without their own subscriber network. It works without expensive and time-consuming cabling to the subscribers. The development of a basic version in the 10.5 gigahertz frequency band was completed and volume production started.

In support of the DMS-technology business in the United States we acquired the radio access network product line of Texas Instruments Inc., Dallas, Texas. Another important step in the North American market was represented by a large order from AT&T Wireless Inc., Redmond, Washington, for wireless components for an RLL system (Radio in the Local Loop, a regional access network).

The network management system NSU found wide application at several network operators. We introduced an open version in 1997, which makes it possible to interconnect with other management systems within the same network.

We completed installation of broadband communication with the Diamant feeder system in five German metropolitan areas.

For our own networks which provide television signals to about a million private households, we tried out new transmission technologies. As the first cable network operator in Germany, we prepared a complete local network for the reception of digital television programs.

### Continued brisk demand in space technology

Demand for satellite-supported transmission capacity has increased rapidly worldwide. Besides being used for transmitting television programs, satellites are more and more in use for mobile communications. We further improved our strong position in the area of traveling-wave tube amplifiers, several of which are used in each satellite

### Sales of communications technology products Progress 1993-1997 (billion DM)



Sales for 1993 adjusted for comparability.
From 1994 onwards, excluding sales of car radios, and automotive display and navigation systems.
Including sales of Bosch Telecom Dammark A/S.

Our new DMS radio access system (Digital Multipoint System) for public networks does not require expensive cabling. Volume production of base stations was started in 1997. Our photo shows the DMS radio unit. As a result of long-term general agreements with American and European satellite manufacturers, the sales of repeater equipment in communication satellites grew at a better than average pace.



### Subdued development in private networks

Business with private networks and in-house systems was subdued. After a high volume of investments in ISDN private branch exchanges in Germany in the previous year, 1997 demand was slightly lower. In other European countries our sales of the new Integral-3 system showed robust growth.

Our mobile product line was broadened: Cordless telephony based on the DECT standard can be combined with our telecommunication systems, so that the entire performance range of hard-wired telephone digital exchanges is achieved.

Demand for private CTI solutions (Computer Telephony Integration) which merge telecommunications with data processing continues at a strong pace. This is especially true for callcenter systems which forward customer telephone enquiries to the appropriate employee with the help of computer technology. Our technology is distinguished by the caller's voice and data control, and rapid access to computer networks and databases at the workplace. In 1997 we received a number of large orders from German and American firms.

Our service business showed aboveaverage growth in 1997. We offer a comprehensive range of services, from systems installation to network operation. At the Frankfurt banking center we obtained an order to install a trading system which banks can fall back on in case of malfunction or disaster. Strong impulses for the integration of voice and data traffic in business-related communication networks result from the increased use of the internet. We received several orders to install corporate networks.

### Complete security systems for property surveillance

The market for security technology has grown further. We received orders for the delivery of complete security systems for property surveillance, especially from large companies and public institutions in Germany. One large order came from the Netherlands.

The basic element of surveillance and reporting systems is LSN (Local Security Network) bus technology, which has become the industry norm in Germany. Our self-learning video sensor reduces the number of false alarms considerably.

### Declining business in traffic control technology

Demand by German municipalities for traffic signals and traffic control computers declined. We were able to partially reduce the impact of the weakness in German business by intensified efforts in European and Asian markets.

For the Munich Trade Fair we are installing a traffic-management system along the highway to the exhibition center in Riem. We are also installing a large-area parking guidance system.



Communications Technology - 1997 Highlights

Sales	5.0 billion DM	
Investments	142 million DM	
Research and Development	560 million DM	

We strengthened our position in GSM mobile communications in 1997. By acquiring the Danish mobile-telephone producer Dancall, we can now offer a wide range of state-of-the-art equipment for all GSM frequencies from our own factories.

### Consumer Goods Business Sector



As producer of high-grade power tools, Bosch enjoys a good reputation worldwide. With the new variable grinder, a small, compact belt grinder for corners and edges, we opened a promising market niche in 1997. In most western industrial economies including Germany, private consumption in 1997 generated only weak economic stimuli. In contrast, consumption in the U.K. and the USA developed dynamically.

Sales of the Consumer Goods Business Sector increased overall by 19.5% to 11.1 billion DM. This includes 50% of sales by Bosch-Siemens Hausgeräte GmbH (BSHG).

### Three additional plants for electric household appliances

The BSHG Group further expanded its worldwide business in 1997. New plants commenced operations in Brazil, Poland and the United States. A new sales organization was started in India.

Once again, BSHG outperformed the industry in 1997. Sales increased by 9.4% to 9.6 billion DM. Growth resulted exclusively from export.

### Innovations stimulate the powertools business

In 1997 a total of 93 million power tools with a value of 13 billion DM were sold worldwide. In terms of volume the market increased by 5% and in value by 13% compared to 1996.

The power tools division was able to further increase its sales. The foreign share, which grew to 82% (1996: 77%), underscores the increased globalization.

Growth was decisively the result of new product introductions. Important among these was the variable grinder, a small, handy belt grinder with high performance at corners, edges and other difficult-to-reach places. This product gave the belt-grinder market new impetus.

A further innovation is a system for simple and fast change of tools for mid-range percussion drills.

Sales of power-tool accessories grew at an above-average pace. An important contribution was made by the introduction of a new type of compass saw blades, high-grade diamond-bit tools, and extensive accessories for the variable grinder.

With a new series of lawnmowers made in the U.K., we enhanced our position as supplier of power gardening tools.

### New burner for low-pollution thermotechnology

We were able to further increase our thermotechnology sales in 1997. Growth came from abroad. Demand in Germany weakened.

The internationalization course on which we embarked ten years ago has proven successful. With our brands Bosch, Junkers, Vulcano, Worcester, Radson, e.l.m. Leblanc and Geminox we are among the most important suppliers of heating technology in Europe.

We are well prepared with our equipment program for the new European Union laws and regulations which went into force on January 1, 1998. We increased the use of our newlydeveloped electronic controller "Heatronic" in our gas-fired equipment. It controls setting and operation, and permits easy service.

For our gas-fired heating equipment, we developed a new type of burner with flame cooling and resulting lowpollutant emissions. It is also very quiet and simple to maintain.

### Sales of consumer goods Progress 1993-1997 (billion DM)



#### Consumer Goods - 1997 Highlights

Sales	11.1 billion DM
Investments	379 million DM
Research and Development	268 million DM



Bosch is among the most important European suppliers of energy-saving and environmentally friendly gas-fired equipment in the area of thermotechnology. The photo shows manufacture in our plant in Houthalen (Belgium) of state-of-the-art gas-fired hotwater boilers featuring calorificvalue technology.

### Capital Goods Business Sector

Investment activity in the western industrial countries resumed its upward trend. Order inflow and production in the German mechanicalengineering industry increased. Sales by our Capital Goods Business Sector rose in 1997 to 2.1 (1996: 2.0) billion DM.

### Export stimulated automation technology business

Our Automation Technology Division was able to increase incoming orders and sales significantly. This resulted from greater demand in our most important markets, more favorable currency exchange rates and additional customer projects. The greatest rates of growth were again found outside Germany, where sales did not take off until the second half of the year.

In the area of mobile hydraulics we introduced electronic-hydraulic valves with an interface to the CAN bus system usual in the automotive industry. We added further car makers to our customer base for gear pumps.

The range of industrial hydraulic pumps was supplemented by a new series of vane pumps and by internal gear pumps. We further developed a generation of digital controllers for proportional valves with CAN bus interfaces.

We introduced a new series of compact pneumatic cylinders. Manufacture of pneumatic valves was concentrated at our French Bonneville facility.

The mechanical base elements for assembly technology were expanded by us with an economical and easy-touse safety-partition system. Our product range in transfer technology was expanded by a program for rapid movement of very small parts. We restructured our product range in tightening and press-fit technologies.

The training we offer was expanded and reorganized. We concentrated training across all divisions at our Erbach facility.

### Foreign manufacturing of packaging machinery expanded

Increased worldwide demand also led to a rise in order inflow and sales at our Packaging Machinery Division. We were able to reinforce our position as a technically competent and innovative manufacturer of packaging machinery for the pharmaceutical, food and confectionery industries.

We strengthened our position in the packaging-machinery markets of Western Europe and the United States with a new machine for hard gelatine capsules. The equipment is distinguished by its high output, and fills and seals 150,000 capsules per hour.





Components of Bosch transfer technology are used worldwide in production and assembly. Individual elements can be combined into simple machines or installed in systems consisting of interlinked modules.

In order to strengthen our international position, we expanded activities outside Germany. In addition to our factories in the Netherlands, the United States, Brazil, India and Japan, we started the low-cost production of components and basic machines at Jihlava in the Czech Republic.

The filling system developed by us, which meters dosages according to time and pressure, to be used in the processing of highly sensitive pharmaceutical products is finding good acceptance. It combines cost-saving operation with precise filling and careful handling of the product. More than half of our filling machines are now based on this method. We supported our customers in providing the documentation on the filling process for liquid pharmaceuticals as necessary in order to obtain government approval for their facilities.

For the food industry we developed a deep-drawing machine for sterile filling and packaging of milk products.

We expanded the range of products for confectionery machinery with extruders and cooling tunnels for the manufacture of soft candy products.

### Sales of capital goods Progress 1993–1997 (billion DM)



### Capital Goods - 1997 Highlights

Sales	2.1	billion	DM
Investments	41	million	DM
Research and Development	133	million	DM

21

### International Business



Borders between countries continue to lose their significance for internationally active companies. Worldwide competition requires that a product's added value be created above all near to customers and at low cost.

### Centers of proficiency with worldwide responsibilities

In further expanding our international business, we travel various paths: We set up our own manufacturing facilities, form joint ventures, acquire shareholdings or even whole companies, or we enter into cooperative agreements. In order to realize our goal of uniform quality standards worldwide, and to lower production costs, we further expanded our international manufacturing and development integration.

Capabilities and know-how are concentrated in proficiency centers, which we charge with the responsibility worldwide for continued development of process technology, product development, and application engineering for our products.

Cross-border structures are also being created in marketing, which is organized more and more to deal with large economic areas of the world, as well as in purchasing, which is responsible for worldwide concentration of material procurement in order to take full advantage of further savings potentials. We formed international project teams for special development and manufacturing assignments.

The Bosch Group has 175 manufacturing sites in 32 countries, of which 133 are outside Germany. The Bosch Group also participates in 40 joint ventures worldwide.

#### Our major foreign markets

Sales 1997	Billion DM
USA	6.4
France	3.7
U.K.	2.5
Italy	2.2
Brazil	2.0
Spain	1.9
Sweden	1.0
Japan	1.0
Austria	0,9
Netherlands	0.8



### Employees and production outside Germany

Country	Employees	Automotive equipment	Communications technology	Consumer goods	Capital goods
Brazil	13,170				0
USA	13,090				
India	11,220	•			
France	9,860	0		•	0
Spain	6,960			•	
Malaysia	3,630	•			
Mexico	3,610	•			
U.K.	3,520				
Portugal	3,110	•	A CONTRACTOR OF	•	
Switzerland	2,270				

### International Operations - 1997 Highlights

Sales	30.7	billion	DM
Investments	1,529	million	DM
Research and Development	827	million	DM

# Research and Development



As yet, the most effective exhaust-gas cleaning system in gasoline engines is the combination of a catalytic converter and the lambda oxygen sensor which we developed for the measurement of exhaust-gas oxygen content. The new generation of sensors uses ceramic composites which allow for rapid heating. A fundamental part of management philosophy is the continuous improvement of innovative forces within the Group. Approximately 14,700 scientists, engineers and technicians worldwide work to develop new products and systems and to improve the functionality and reliability of existing products.

These efforts can be illustrated by some examples from our Corporate Research and Advanced Engineering Departments.

### Switching optical signals using polymer technology

The rapidly growing need for broadband services in telecommunications has led to capacity bottlenecks worldwide. They can be relieved by the use of optical transmission technologies. We developed polymer-based digital switches as key components for transparent optical networks which continuously transmit data. They forward optical signals, which they may have received via fiber-optic cable, selectively to one of several exits.

### Cogeneration of power and heat in the household

An important goal in the further development of thermal energy systems for the household is to optimize energy conversion. A positive solution is to combine the generation of power (electric energy) and heat. We are researching systems and technologies to combine heat and power in the household.

### Increased use of laser technology in material processing

The use of laser technology in material processing has proven itself in our manufacturing, especially in welding of components which tend to warp or are heat-sensitive.

That is why we make great efforts to further develop this technology for new applications, such as welding copper contacts.

A further focus of our development work is laser-microstructuring for precise drilling and material removal in a wide variety of applications in fluid and fuel-injection technology.

### Detailed analysis of fuel-injection processes

State-of-the-art combustion engines are being subjected to ever greater demands. In order to further reduce fuel consumption, emissions and noise, increasingly detailed knowledge of fuel-injection and combustion processes is required. To this end, we examine steps which aid fuel-metering accuracy and the atomization of fuel with state-of-the-art measurement methods. We employ laser measurement technology, high-speed recording, and simulation programs to analyze the internal flow in nozzles and the dispersion of fuel.

### Smallest DAB module in the world

For the digital radio transmission method DAB (Digital Audio Broadcasting) we developed integrated circuits and modules for the direct feedin of high-frequency signals. The digital circuit contains more than seven million transistors on a chip and encompasses the entire digital signal processing of the DAB radio reception. This module was unveiled at the 1997 International Radio and TV Exhibition in Berlin as the smallest and at the same time most highly integrated DAB receiver in existence.

### Sensors for recognition of vehicle surroundings

We developed optical sensor systems to register the surroundings of a vehicle as the eyes of the driver would see them. Such systems require vehicle-compatible cameras, high-performance electronics, and reliable methods of image interpretation. We are already testing a new kind of video-sensor system which is insensitive to glare, for the recognition of the road's course and objects outside the vehicle. This system is being developed further for new driving functions, such as vehicle-speed control.

### Total expenditures for research and development<sup>10</sup>

As a percentage of sales 1993-1997



<sup>9</sup> Approximately 10% thereof is spent for corporate research and advanced engineering.

### Employees of the Bosch Group



Bosch's low-voltage magneto ignition first started the gasoline engine of an automobile in 1897. Apprentices used its centennial as an occasion to build a true-to-the-original copy of the legendary De Dion Bouton three-wheeler with the same ignition. On January 1, 1998 the Bosch Group had a worldwide workforce of 180,639 employees, 4,158 more than the year before. Employment in Germany rose by 1,640 to 91,526. Of these, approximately 58% were hourly-paid workers, 38% were salaried, and 4% apprentices. Employment outside Germany rose by 2,518 to 89,113.

### Labor costs continued to increase

Labor costs in 1997 rose to 14.4 (1996 : 13.0) billion DM worldwide. In Germany they increased to 9.3 (1996: 8.9) billion DM, or by 5% per employee in the new German States and 8% in the old German States. Employee benefit costs in Germany reached 4.6 (1996: 4.2) billion DM; for each 100 DM in pay for work performed, there were approximately 93 DM additional mandatory, contractual and other social contributions.

#### Upstream evaluation system

In order to improve cooperation, we developed a method under the title "Leadership Dialogue" in which employees can give their supervisors a distinctive feedback about their leadership behavior. The results are then discussed in a joint round of talks chaired by an impartial moderator, and conclusions agreed upon.

### Discussion with political representatives

In order to intensify communication between company executive personnel and opinion-makers in business and politics, we created a series of presentations and discussions under the title "Political Forum". With this we encourage and support the sociopolitical involvement of our executive employees.

### International human resources

To intensify the international exchange of personnel, we established an employment market on the internal company intranet. We provide our companies worldwide with support in designing employment conditions, pay structures, and in implementing the "Employee Dialogue" assessment system.

#### More apprentices hired

On January 1, 1998, the Bosch Group in Germany had 3,355 apprentices in training. Of these, 1,052 young people, 3.2% more than the year before, enrolled in 1997 in courses preparing them for technical or commercial careers. In many plants we trained more apprentices than we needed ourselves, again making a community contribution. At some locations, we had difficulty filling the available apprentice slots, since not enough qualified applicants were available. We hired approximately 92% of the apprentices after they completed their training.

We also strengthened our internal training activities at locations outside Germany with country-specific apprentice systems.

### Expansion of flexible working hours

Frequently, sudden fluctuations in demand require further flexibility in the time worked. In order to better coordinate order backlog and working hours, we further separated the times machinery and equipment are used from individual working hours. Together with the shop councils we developed flexible shift arrangements at many locations. They provide for between nine and eighteen shifts a week on a three-shift daily basis or three to six shifts weekly where one daily shift is worked.

Flexible work-time models in manufacturing lead to a reduction in overtime and therefore make employment of additional workers possible.

### Expression of appreciation to our employees

Strong demand for our products led to strained employment situations at many locations. Meeting delivery deadlines required a high degree of commitment and performance from our employees. We want to thank them for these efforts. We also want to express our appreciation to labor representatives with whom, even in difficult situations, we were able to find solutions to ensure our future competitiveness and ability to deliver.

### Number of employees Trend 1993-1997





At nearly all locations, our employees have formed leisuretime sports groups in order to promote physical fitness as compensation for their daily work.

# Financial Statements of the Bosch Group Worldwide Consolidated Balance Sheet as of December 31, 1997

### Assets

Fixed assets	Appendix (6)	December 31, 1997 million DM	December 31, 1996 million DM
rixed assets	(0)		
Intangible fixed assets		1,872	2,077
Tangible fixed assets		8,861	8,125
Financial investments		1,280	582
		12,013	10,784
Current assets			
Leased products		492	577
Inventories	(7)	5,639	4,752
Accounts receivable and other assets	(8)		
Trade accounts receivable		7,522	6,908
Other receivables and assets		1,876	1,619
Marketable securities		5,828	5,970
Liquid assets		1,484	1,612
		22,841	21,438
Deferred expenses		52	51

34,906

32,273

### Liabilities

	Appendix	December 31, 1997 million DM	December 31, 1996 million DM
Equity capital	(9)		This of Law
Capital stock		1,500	1,500
Capital surplus		2,895	2,895
Earned surplus		4,228	4,589
Unappropriated earnings		2,209	68
Minority interests		545	475
		11,377	9,527
Accruals with valuation reserve portion	(10)	55	68
Accruais			
Accruals for pensions and similar obligations		6,227	5,784
Other accruals	(11)	9,596	9,946
		15,823	15,730
Liabilities	(12)		
Liabilities with banks		1,713	1,622
Accounts payable trade		3,419	2,810
Other liabilities		2,476	2,453
		7,608	6,885
Deferred income		43	63

34,906	32,273
04,000	Main 1 M

### Financial Statements of the Bosch Group Worldwide

### Consolidated Statement of Income for the period from January 1 to December 31, 1997

	Appendix	1997 million DM	1996 million DM
Sales	(15)	46.851	41,146
Changes in finished goods and work-in-progress	(10)	40,001	41,140
inventories and other capitalized costs	(16)	653	225
Total operating performance	(10)	47.504	41,371
total operating performance		47,004	41,071
Other operating income	(17)	3,349	2,293
Costs of materials	(18)	- 21,835	- 18,937
Personnel costs	(19)	- 14,359	-13,017
Depreciation of intangible and tangible fixed assets		- 2,927	- 2,698
Other operating expenses	(17)	- 8,926	- 7,570
Income (-loss) from investments	(20)	- 70	95
Amortization of financial investments and securities include	d		
with current assets		- 186	- 220
Interest income net of expenses	(21)	245	356
Income from ordinary business activities		2,795	1,673
Taxes on income	(22)	- 1,136	- 1,173
Net income for the year		1,659	500
Including profit and loss of minority shareholders	(23)	105	83

### Financial Statements of the Bosch Group Worldwide Capital Flow Statement

	1997	1996
	million DM	million DM
Net income for the year	1,659	500
Depreciation of fixed assets	3,351	2,917
Change in long-term accruals and accruals with valuation reserve portion	209	122
Cash flow	5,219	3,539
Change in inventories and leased products	- 802	370
Increase of receivables	- 872	- 251
Change in short-term accruals	- 129	61
Change in liabilities	612	- 1,093
Additions to funds from business activities (1)	4,028	2,626
Additions to fixed assets	- 4,076	- 3,099
Retirements of fixed assets	126	196
Changes in the composition of the consolidated group		- 2,067
Application of funds to investment activities (2)	- 3,950	- 4,970
Dividends 1996/1995	- 68	- 68
Increase of liabilities with banks	91	475
Other changes in balance-sheet items	- 208	- 119
Change in funds from financial activities (3)	- 185	288
Change in liquidity (1) + (2) + (3)	- 107	- 2,056
Liquidity at the beginning of the year	7,582	9,584
Reclassification of financial investments/Changes in the composition	and the second	
of the consolidated group (1996)	- 163	54
Liquidity at the end of the year	7,312	7,582

### Financial Statements of the Bosch Group Worldwide 1997 Development of Fixed Assets

	Cost of acquisit	tion or manufacture		
	Jan. 1, 1997	Changes in the consolidated group	Additions	Transferr
	million DM	million DM	million DM	milion DM
ntangible fixed assets				
Concessions, patents, trademarks and similar rights				
and assets as well as licenses to such rights and assets	638	1	198	1
Goodwill	2,390	24	46	
Advance payments	2		1	-1
	3,030	25	245	
Tangible fixed assets				
Land, lessehold rights and buildings,				
including buildings on land owned by others	5,764	74	137	84
Production equipment and machinery	11,143	79	1,359	329
Other equipment, fixtures and furniture	8,858		719	8
Advance payments and construction in progress	668	42	690	- 49-
	26,433	195	2,905	
Financial investments				
Investments in affiliated companies	362	- 133	353	29
Loans to affiliated companies	80	- 8	23	
investments in associated companies	497		673	
Other financial investments	402	2	30	- 29
Other loans	89	1	10	
	1,430	- 138	1,089	
Total fixed assets	30,893	82	4,239	

Retirements	Dec.31, 1997	Depreciation cumulative to Dec. 31, 1997	Net book value as of Dec. 31, 1997	Net book value as of Dec. 31, 1996	Depreciation current year
million DM	million DM	million DM	million DM	million DM	million DM
184	654	283	371	339	189
20	2,440	940	1,500	1,737	416
	2	1	1	1	1
204	3,096	1,224	1,872	2,077	606
72	5,987	3,216	2,771	2.700	219
588	12,322	8,741	3,581	3,207	1,388
746	8,912	7,278	1,634	1,581	709
15	891	16	875	637	5
1,421	28,112	19,251	8,861	8,125	2,321
66	545	224	321	129	144
6	89		89	73	
58	1,112	476	636	146	272
29	376	223	153	147	8
18	82	1	81	87	
177	2,204	924	1,280	582	424
1,802	33,412	21,399	12,013	10,784	3,351

### Financial Statements of the Bosch Group Worldwide Balance Sheet Structure 1993–1997

Assets					34,906
				32,273	
		27,373	28,504	10.794	12,013 34%
Total assets	25,447	25,447 6,650	6,957	10,784 33%	80.87
Fixed assets	7,003	24%	24%		
	27%	4,971	5,173	5,329	6,131 18%
inventories, leased products	4,796 19%	18%	18%	17%	
		6,780 25%	6,790 24%	8,578	9,450 27%
Receivables	6,887 27%			27%	21 90
Marketable securities, liquid assets		8,972	9,584	7,582	7,312
	6,761 27%	33%	34%	2396	21 %

### Liabilities

				32,273	
		27,373	28,504	9,527	11,377 33%
Total liabilities and equity	25,447		0000000	30%	
Equity capital	8,304 33%	8,563 31%	9,038 32%		
Long-term liabilities	10,569 41%	11,385 42%	11,388 40%	12,928 40%	13,149 37%
Current liabilities	6,574 26%	7,425 27%	8,078 28%	9,818 30%	10,380 30%
Values in million DM	1993	1994	1995	1996	1997

34,906

34
## Financial Statements of the Bosch Group Worldwide Appendix 1997

#### (1) General remarks

The consolidated statements of the Bosch Group Worldwide conform to the Regulations of the Commercial Code.

In order to ensure better understanding of these financial statements, we combined a number of individual balance sheet and statement of income items into key groupings. These items are stated separately in this Appendix. Required comments for individual items are also contained in this Appendix. The consolidated statement of income follows the format of the total cost method.

#### (2) Consolidated group

The consolidated statements include Robert Bosch GmbH and 24 domestic as well as 113 foreign subsidiaries. For the first time, we consolidated the following foreign subsidiaries:

- Tecnologie Diesel Italia SpA, Modugno (Italy)
- Bosch Diesel spol. s r.o., Jihlava (Czech Republic)
- Bosch Fren Sistemleri Sanayi ve Ticaret AS, Bursa (Turkey)
- Bosch Telecom Inc, Dallas, Texas
- Bosch Korea Ltd, Seoul (Korea)
- Korea Bosch Mechanics and Elec-
- tronics Co Ltd, Chonan (Korea)
  Bosch Hydraulic Systems Pty Ltd, Thomastown (Australia)

Several businesses were integrated into other companies in the consolidated group by way of legal restructuring. These were primarily, Bosch Télécom SA, Louveciennes (France), Telenorma SA, Brussels (Belgium), Bosch Automotive Motor Systems Corporation, Hendersonville (Tennessee), and Robert Bosch Freios Ltda, Campinas (Brazil). Three previously consolidated companies were deleted because of their relative unimportance. Radiocom AG, Solothurn (Switzerland), was sold in 1997.

The consolidated statements of Bosch-Siemens Hausgeräte GmbH were included pro rata pursuant to Section 310 of the Commercial Code.

In accordance with Section 296, Paragraph 2 of the Commercial Code, companies lacking operations or having insignificant business volume, were not included with the consolidated financial statements.

The equity valuation of specific interests in associated companies was applied in accordance with the bookvalue method. This valuation pertained to four domestic and nine foreign companies.

#### (3) Principles of classification and evaluation

The financial statements of Bosch Group Worldwide include the individual statements of our subsidiaries which conform to uniform principles of classification and valuation.

We adhered to the valuation at lower of cost or market and imparity of gain or loss recognition.

Financial statements of foreign associated companies were not modified to comply with the uniform accounting principles of the consolidated group.

Intangible assets including goodwill resulting from first-time consolidations as well as tangible and financial assets were valued at acquisition cost or cost of manufacture subject to depreciation.

We applied straight-line as well as accelerated depreciation methods. Items of minor value were fully depreciated during the year of acquisition. In addition we applied all special depreciation allowances according to tax regulations in all host countries.

Interest-free and low-interest loans were adjusted to reflect present values by application of a uniform discount rate domestically, and prevailing rates in foreign countries.

Additions to interests in associated companies include shares purchased as well as capital contributions and prorated profits. The costs at dates of acquisition exceeded underlying book values by 261 million DM. Retirements include prorated losses and dividends paid.

We valued inventories at the lower of average purchase or manufacturing cost or market. Manufacturing costs include costs of materials and reasonable overhead.

At domestic companies, the Lifo valuation method was used exclusively. We used this method also at foreign subsidiaries when accepted by the taxing authorities.

We provided for risks inherent in warehousing and distribution through appropriate deductions. Additional depreciation was taken in cases of unfavorable returns. Accounts receivable and other current assets were stated at face values less write-downs for individual risks and for general credit risks. Interestfree or low-interest receivables with maturities of more than one year were discounted.

We valued marketable securities included in current assets at the lower of acquisition cost or market.

Special write-downs of marketable securities of 14 million DM were taken on account of expected price fluctuations.

In determining the size of accruals we provided for all identifiable risks.

Pension accruals and similar liabilities were determined by the application of actuarial principles and were discounted to reflect present values. For domestic companies, we used a 6% discount rate, while foreign subsidiaries used discount rates prevailing in their respective countries.

In determining the amounts accrued for pending transactions with expected losses, we basically took account of prices and costs expected at the time these transactions would close.

Liabilities were stated at the amounts owed.

#### (4) Currency translation

Accounts receivable and accounts payable stated in the respective foreign currencies were translated to DM equivalents at the less favorable of the exchange rate at the date of origin, or at the balance-sheet date.

For the translation to DM of the financial statements in foreign currencies and the related profits and losses, we applied, in principle, average exchange rates at the balance-sheet date. Transactions pertaining to fixed assets were translated at average annual DM equivalents. Resulting differences were included with beginning balances of cost of acquisition or manufacture as well as in cumulative depreciation.

Tangible fixed assets of our subsidiaries in Brazil were valued at their original carried-forward DM equivalents of cost of acquisition or manufacture. Depreciation was based on historic values.

Income and expenses were translated at average exchange rates. Differences resulting from the application of average exchange rates versus yearend exchange rates were included with other income.

#### (5) Consolidation principles

For capital consolidation of companies or for newly acquired capital shares, we applied the book-value method at the date of acquisition or at the date of first-time consolidation. As far as possible, we allocated amounts subject to capitalization to the respective assets. Remaining amounts were included with goodwill. Negative goodwill resulting from capital consolidation was included with earned surplus.

	Receivables and payables, sales, expenses, and income, as well as results within the consolidated group were eliminated. Profits from sales to the consoli- dated group by associated companies	were not eliminated since they were insignificant. Deferred tax assets resulting from consolidation measures in the amount of 81 million DM were included with other assets.			
(6) Fixed assets	Extraordinary depreciation amounting to 590 million DM pertained mostly to goodwill upon first-time consolida- tion and to financial investments. In accordance with tax regulations, we deducted an extra 51 million DM directly from the acquisition costs of tangible fixed assets. The depreciation was taken pursuant to Section 6b of	the Income Tax Law, Section the Income Tax Implementati Regulations, Section 4 of the 1 ment Area Law, and pursuant tax laws at our foreign subsidi The development of fixed a presented on pages 32 and 33 report.	ion Develop- t to local iaries. assets is		
(7) Inventories	Included with the stated value of inventories, in the amount of 5,639 million DM, are our advance payments of 41 million DM (1996:	53 million DM). On the other advance payments received in amount of 302 million DM (I 475 million DM) were deduct	i the 996:		
(8) Accounts receivable	Million DM	1997	1996		
and other assets	Accounts receivable	7,522	6,908		
	including maturities of more than one yea	r 30	41		
	Other receivables and assets	247	253		
	Receivables from affiliated companies		200		
	including maturities of more than one yea	15			
	Receivables from companies in which				
	interests are held	95	89		
	including maturities of more than one yea		12		
	Other assets	1,534	1,277		
	including maturities of more than one yea		180		
		1,876	1,619		
	Receivables and other assets	9,398	8,527		
(9) Equity capital	The subscribed capital stock of 1,500	Revenue surplus accounts c	onsist of		
	million DM and the capital surplus of 2,895 million DM correspond to the respective balance-sheet items of Robert Bosch GmbH.	the following:			
	Million DM	1997	1996		
	Earned surplus of Robert Bosch GmbH	150	950		
	Other earned surplus	4,078	3,639		
	Construction and Construction	4,228	4,589		
	For the capital increase at Robert Bosch GmbH, which is planned for 1998, 800 million DM was taken out of earned surplus and added to the company's unappropriated earnings.	Unappropriated earnings of th solidated group are identical t of Robert Bosch GmbH.			
			37		

#### (10) Accruals with valuation reserve portion

Accruals with valuation reserve portion were formed pursuant to Section 6b of the Income Tax Law, Paragraph 34 of the Income Tax Regulations, Section 12 of the Reorganization Tax

Million DM

Accrued taxes

Other accruals

Law and Section 1 of the DDR Investment Law. Our foreign subsidiaries followed local regulations with respect to such items.

1997

410

9,186

9,596

1996

292

9,654

9,946

(11)	04	2000	10000	in the later.
1117	UU	101	accri	uais

(12)	 	 a.e.
1121	 	 10.31

	l m u		Including maturities up to one		
Million DM	1997	year	1996	year	
Liabilities with banks	1,713	548	1,622	564	
Accounts payable trade	3,419	3,418	2,810	2,805	
Other liabilities					
Liabilities from acceptances					
and drafts	190	190	174	174	
Liabilities with affiliated companies	53	53	65	65	
Liabilities with companies in which					
interests are held	154	154	165	165	
Other liabilities	2,079	1,752	2,049	1,631	
	2,476	2,149	2,453	2,035	
Total liabilities	7,608	6,115	6,885	5,404	

Of the liabilities with banks, 90 million DM were secured by mortgages and another 57 million DM by other liens. Of other liabilities, 9 million DM were secured by mortgages and one million by other liens.

Other liabilities contain tax liabilities in the amount of 515 million DM (1996: 359 million DM) and liabilities pertaining to social obligations in the amount of 373 million DM (1996: 250 million DM). Liabilities with shareholders in the amount of 19 million DM pertain to Robert Bosch Stiftung GmbH.

Liabilities with maturities of more than 5 years amounting to 940 million DM included 915 million DM of liabilities with banks and 25 million DM of other liabilities.

(13) Contingent liabilities	Million DM	
	Contingent liabilities from the issuance or transfer of note	5 281
	including affiliated companies	5
	Contingent liabilities from guarantees	253
	including affiliated companies	3
	Contingent liabilities from warranties	29
	including affiliated companies	6
	Contingent liabilities from collateral given for third-party lia	abilities 10
	including mortgages	7
	As a partner in two foreign private ally liable i companies, we are jointly and sever-requirement	in accordance with legal

(14) Other financial obligations

Other financial obligations of significance for an opinion on the financial condition of the company did not exist.

(15) Breakdown of sales	Million DM	1997	96	1996	9
	Sales by business sectors				
	Automotive equipment	28,736	61.3	24,461	59.
	Communications technology	4,964	10.6	5,436	13.
	Consumer goods	11,054	23.6	9,253	22.
	Capital goods	2,097	4.5	1,996	4.
		46,851	100.0	41,146	100.
	Sales by regions				
	EU countries	31,109	66.4	29,115	70.
	Other European countries	2,241	4.8	1,753	4.
	America	9,791	20.9	7,026	17.
	Asia, Africa, Australia	3,710	7.9	3,252	7.
		46,851	100.0	41,146	100.
16) Changes in finished goods and	Million DM	1	997	199	
work-in-progress inventories	Change in finished goods and	_			
and other capitalized costs	work-in-progress inventories		334	- 2	
	Other capitalized costs 319				24
				653	22
17) Other operating expenses and income	Expenses resulting from additions to accruals with valuation reserve portion in the amount of 8 million DM are included in other operating expenses.	with valu amount o	ation reserv	versal of acc ve portion in a DM are in come.	a the
18) Costs of materials	Million DM		19	97	199
to) costs of materials	Costs of raw materials, supplies and merch	andise	20,3		17,69
	Purchased services	No. Contraction	1,4		1.24
			21,8		18,93
			- 10		10,00
(0) December and	Million DM		19	97	199
19) Personnel costs	Million DM Wages and salaries			97 79	
19) Personnel costs	Wages and salaries	naumonte	11,2	79	10,39
19) Personnel costs	Wages and salaries Social security, pension plans, and support	payments	11,2 3,0	79 80	199 10,39 2,62
19) Personnel costs	Wages and salaries	payments	11,2 3,0	79 80 77	10,39

### Average numbers of employees during the year:

		1997	Including	1996	Including	
		Total	BSHG	Total	BSHG	
			prorated)		(prorated)	
	Hourly-paid workers	112,052	10,097	108,104	10,177	
	Salaried employees	62,899	5,861	59,619	5,454	
	Apprentices	4,768	200	4,636	240	
		179,719	16,158	172,359	15,871	
(20) Income (- loss)	Million DM			1997	1996	
from investments	Income from investme	ents		22	25	
from investments	including affiliated			6	(	
	Result from associate	and the second se		- 92	73	
	Contraction of the Annual Statement			- 70	95	
(21) Interest income net	Million DM	www		1997	1996	
of expenses	Multi bar ber an de la secte d	Interest from loans included				
	with financial inve	9	1			
	including affiliated	6				
	Other interest and sit			515	538	
	including affiliated			6		
	Interest and similar e			- 279	- 18	
	including affiliated	companies		- 2	- 1	
				245	356	
	Million DM			1997	1996	
(22) Taxes	Taxes on income			- 1,136	-1,173	
	An and we will be a state of a state of a			- 288	- 273	
	Other taxes			- 1,424	-1,44	
				- 1/424	-1,440	
	"pay-out-and-reinvo at Robert Bosch Gr sated by additional	treduction as a result of the at-and-reinvest" method used ert Bosch GmbH was compen- y additional taxes from the par- ersal of accruals for expected The impact of tax allowances the profit for the fiscal year a in former years, and the size burdens from the resulting va are of secondary significance.				

(23) Profit and loss of<br/>minority shareholdersMillion DM19971996ProfitsProfits11190Losses-6-710583

Other taxes are included in other

losses as mandated by tax law.

operating expenses.

Accruals at Robert Bosch GmbH for (24) Compensation of the members During 1997, the aggregate compensapension liabilities for former memof the Board of Management tion of the members of the Board of bers of the Board of Management and and of the Supervisory Council Management of Robert Bosch GmbH their dependents amounted to 83 milamounted to 8 million DM. Former members of the Board of Managelion DM. ment and their dependents received The members of the Supervisory Council and the Board of Manage-11 million DM, and the members of ment of Robert Bosch GmbH are the Supervisory Council one million DM. listed on page 47. A listing of the shareholdings of the deposited with the commercial (25) Shareholdings of **Bosch Group Worldwide** registry of the Stuttgart Court. consolidated Bosch Group will be

Stuttgart, March 5, 1998

Robert Bosch GmbH The Board of Management

Auditor's opinion

The accounting and the consolidated financial statements of Robert Bosch GmbH as of December 31, 1997, which we have audited in accordance with professional standards, comply with legal provisions. With due regard to generally accepted accounting prin-

Stuttgart, March 5, 1998

ciples the consolidated financial statements give a true and fair view of the company's assets, liabilities, financial position and profit and loss. The management report to the consolidated financial statements is consistent with the contents thereof.

Schitag Ernst & Young Deutsche Allgemeine Treuhand AG Wirtschaftsprüfungsgesellschaft

Dörner Wirtschaftsprüfer Dr. Pfitzer Wirtschaftsprüfer

# Major Companies of the Bosch Group (as of December 31, 1997)

Name	Location	Equity Capital	Equity Capital "	Sales	Profit or loss <sup>3</sup>
	9	6 owned "	million DM	million DM	million DM
Germany					
Blaupunkt-Werke GmbH	Hildesheim	100	183	1,304	PLT"
Bosch-Siemens Hausgeräte GmbH"	Munich	50	1,206	9,595	96
Bosch Telecom GmbH	Stuttgart	100	539	4,213	PLT
Bosch Telecom Leipzig GmbH	Leipzig	100	44	208	PLT
BT Magnet-Technologie GmbH	Herne	50	41	133	7
Hawera Probst GmbH	Ravensburg	100	34	116	11
MotoMeter GmbH	Leonberg	100	25	201	PLT
Robert Bosch Elektronik GmbH	Salzgitter	100	23	748	PLT
Robert Bosch Fahrzeugelektrik Eisenach GmbH	Eisenach	100	77	635	16
Signalbau Huber AG	Munich	100"	71	135	-4
VB Autobatterie GmbH	Hannover	35	99	406	- 11
Foreign Countries					
Europe					
NV Robert Bosch SA	Anderlecht/Belgium	100	43	307	4
Robert Bosch Produktie NV	Tienen/Belgium	100	121	408	39
Robert Bosch A/S	Ballerup/Denmark	100	55	286	10
Robert Bosch (France) SA®	Saint-Ouen (Paris)/France	100	598	3,127	- 75
Robert Bosch Ltd	Denham/U.K.	100	221	1.029	73
Worcester Group plc <sup>4</sup>	Worcester/U.K.	100	60	343	24
Robert Bosch SpA"	Milan/Italy	100	128	529	9
Robert Bosch Sistemi Frenanti SpA	Crema/Italy	100	101	369	- 19
Robert Bosch BV	Hoofddorp/Netherlands	100	36	197	1
Van Doorne's Transmissie BV	Tilburg/Netherlands	100	23	52	1
Robert Bosch A/S	Trollaasen (Oslo)/Norway	100	27	140	6
Robert Bosch AG	Vienna/Austria	100	112	596	27
Blaupunkt Auto-Rádio Portugal Lda	Braga/Portugal	100	42	301	5
Vulcano Termo-Domésticos SA	Aveiro/Portugal	100	94	211	22
Robert Bosch AB	Kista (Stockholm)/Sweden	100	23	176	7
Robert Bosch Internationale Beteiligungen AG	Zurich/Switzerland	90	702		74
Robert Bosch AG	Zurich/Switzerland	100	30	219	10
Scintilla AG	Solothum/Switzerland	85	505	1,109	74
Robert Bosch España SA®	Madrid/Spain	100	386	2.022	17
Robert Bosch spol. s r.o.	České Budějovice/Czech Reput		47	142	3
Bosch Diesel spol. s r.o.	Jihlava/Czech Republic	100	21	78	4
Bosch Sanayi ve Ticaret AS	Bursa/Turkey	100	75	253	34

Name	Location	Equity Capital	Equity Capital <sup>®</sup>	Sales <sup>11</sup>	Profit or loss <sup>a</sup>
		% owned "	million DM	million DM	million DM
America					
Robert Bosch Ltda"	Campinas/Brazil	100	457	2,048	125
Robert Bosch SA de CV	Toluca/Mexico	100	175	456	16
Robert Bosch Corporation*	Broadview (Chicago)/USA	100	1,674	5,932	- 33
S-B Power Tool Company®	Chicago/USA	100	331	1,249	110
Vermont American Corporation®	Louisville/USA	50	334	745	48
Diesel Technology Company	Wyoming/USA	50	48	312	- 21
Asia, Australia					
Motor Industries Co Ltd	Bangalore/India	51	160	656	36
Bosch KK	Yokohama/Japan	100	112	576	5
Nippon ABS Ltd	Yokosuka-shi/Japan	50	208	481	12
Zexel Corporation	Shibuya-ku (Tokyo)/Japan	30	1,166	3,478	54
Nippon Injector Corporation	Odawara-shi/Japan	35	60	128	14
Doowon Precision Industry Co Ltd	Seoul/South Korea	20	27	387	5
KEFICO Corporation	Kunpo-Si/South Korea	25	37	317	- 14
Robert Bosch (Malaysia) Sdn Bhd	Penang/Malaysia	100	28	211	- 4
Robert Bosch (South East Asia) Pte Ltd	Singapore/Singapore	100	39	296	1
Robert Bosch (Australia) Pty Ltd <sup>41</sup>	Clayton (Melbourne)/Australia		133	553	8

- Shares held directly and indirectly by Robert Bosch GmbH
- <sup>20</sup> Translation of foreign currencies pertaining to equity capital and profit and loss stated at average exchange rates at the balance-sheet date; sales stated at average exchange rates of the year
- <sup>31</sup> Profit and loss transfer agreement (PLT)
- 4 Represents a consolidated sub-group
- F Refers to shares with voting rights

## Financial Statements of Robert Bosch GmbH Balance Sheet as of December 31, 1997

Assets	December 31, 1997 million DM	December 31, 1996 million DM
Fixed assets		
Tangible fixed assets	2,497	2,290
Financial investments	4,233	3,880
	6,730	6,170
Current assets		
	Thinks	(class
nventories	1,890	1,553
Accounts receivable and other assets	4,736	4,015
Marketable securities, liquid assets	5,731	5,853
	12,357	11,421
Deferred expenses	7	10
	19,094	17,601
Liabilities		
Equity capital		
Capital stock	1,500	1,500
Capital surplus	2,895	2,895
Earned surplus	150	950
Unappropriated earnings	2,209	68
	6,754	5,413
Accruals with valuation reserve portion	1	1
Accruals		
Accruals for pensions and similar obligations	4,100	3,823
Other accruals	5,472	5,914
	9,572	9,737
Liabilities	2,767	2,449
Deferred income		1
	19,094	17,601

## Financial Statements of Robert Bosch GmbH

## Statement of Income for the period from January 1 to December 31, 1997

	1997 million DM	1996 million DM
	minoritow	transfer Gran
Sales	23,174	20,515
Changes in finished goods and work-in-progress inventories		
and other capitalized costs	185	109
Total operating performance	23,359	20,624
Other operating income	2,278	1,555
Costs of materials	- 13,215	- 11,624
Personnel costs	- 5,800	- 5,392
Depreciation of intangible and tangible fixed assets	- 871	- 821
Other operating expenses	- 3,978	- 3,528
Income from investments	398	197
Amortization of financial investments and securities included		
with current assets	- 363	- 313
Interest income net of expenses	280	348
Income from ordinary business activities	2,088	1,046
Taxes on income	- 679	- 746
Net income for the year	1,409	300
Removals from surplus accounts	800	
Additions to surplus accounts		- 232
Unappropriated earnings	2,209	68

# Supervisory Council Report

In its sessions and using written monthly reports, the Supervisory Council of Robert Bosch GmbH kept itself regularly informed about the progress of business and the company's situation. Business developments, financial situation, investment plans, as well as new technical developments were presented and discussed extensively. Reporting and discussion included all important companies of the Bosch Group.

Schitag Ernst & Young Deutsche Allgemeine Treuhand AG, Stuttgart, audited the accounting records and financial statements of Robert Bosch GmbH and the Bosch Group. The auditors in all cases gave their unqualified opinion. The Supervisory Council concurs with the audit findings, and recommends that the shareholders approve the financial statements of Robert Bosch GmbH and follow the disposition of net income proposed by the Board of Management.

As of April 30, 1997, Dr. Johan M. Goudswaard left the Supervisory Council, having reached the retirement age. The Council thanks him for his long-time committed work and for his advice which was based on wide experience. As of May 1, 1997 the shareholders elected Dr. Bo Berggren to the Council. As of March 31, 1997, Dr. Clemens Börsig left the Board of Management. The Supervisory Council expresses its appreciation for his long years of work in the enterprise. As of April 1, 1997, Dr. Werner Andexser and Stephan Rojahn became associate members to the Board of Management. Dr. Siegfried Dais is an associate member to the Board of Management since January 1, 1998.

Stuttgart, April 1998

For the Supervisory Council Dr. Marcus Bierich Chairman

### Supervisory Council

- As of April 21, 1998 -

Dr. phil. Dr. rer. oec. h.c. Marcus Bierich, Stuttgart Chairman Former Chairman of the Board of Management of Robert Bosch GmbH

Walter Bauer, Kohlberg Deputy Chairman Chairman of the Joint Shop Council of Robert Bosch GmbH as well as of the Combined Shop Council, and Chairman of the Shop Council of the Reutlingen Plant

Dr. jur. Peter Adolff, Stuttgart, former Member of the Board of Management of Allianz Versicherungs-Aktiengesellschaft

Knut Angstenberger, Stuttgart Department Manager at the Feuerbach Plant of Robert Bosch GmbH, and Chairman of the Joint Speaker Group of Robert Bosch GmbH and of the Group Speaker Committee

Dr. h.c. Bo Erik Berggren, Stockholm Deputy Chairman of the Board of Directors of Investor AB

Dr. Ulrich Cartellieri, Frankfurt Member of the Supervisory Council of Deutsche Bank AG

Dr.-Ing. Wolfgang Eychmüller, Ulm/Donau Chairman of the Board of Management of Wieland-Werke AG

Ruth Fischer-Pusch, Stuttgart Trade Unions of the Metal Industry, District Management Baden-Württemberg

Hans-Henning Funk, Hildesheim Chairman of the Shop Council of the Hildesheim Plant and Member of the Joint Shop Council of Robert Bosch GmbH

Dr. jur. Karl Gutbrod, Stuttgart Former Member of the Board of Management of Robert Bosch GmbH Chairman of the Board of Trustees of Robert Bosch Stiftung GmbH Gudrun Hamacher, Frankfurt Managing Member of the Board of Directors of the Trade Unions of the Metal Industry

Hans-Joachim Jaquet, Mörfelden-Walldorf Chairman of the Shop Council at Frankfurt and Chairman of the Joint Shop Council of Bosch Telecom GmbH

Olaf Kunz, Frankfurt Managing Director of the Trade Unions of the Metal Industry, Department for Union Policy

Prof. Gero Madelung, Munich Technical University Munich Chair of Aviation Technology

Prof. Dr. rer. nat. Hans-Joachim Queisser, Stuttgart Director at the Max-Planck-Institute for Solid-State Research

Urs B. Rinderknecht, Ennetbaden Chief Executive of UBS Schweizerische Bankgesellschaft

Gerhard Sautter, Erdmannhausen Chairman of the Shop Council of the Feuerbach Plant and Deputy Chairman of the Joint Shop Council of Robert Bosch GmbH, and the Combined Shop Council

Hans Peter Stihl, Remseck Chairman of the Board of Management of Andreas Stihl AG & Co

Manfred Wenkemann, Homburg Chairman of the Shop Council of the Homburg plant of Robert Bosch GmbH

Hans Wolff, Bamberg Chairman of the Shop Council of the Bamberg Plant and Member of the Joint Shop Council of Robert Bosch GmbH

### Management

Board of Management

Hermann Scholl Chairman

Heiner Gutberlet

Rainer Hahn

Claus Dieter Hoffmann as of July 1, 1998

Robert S. Oswald as of July 1, 1998

Tilman Todenhöfer

Hubert Zimmerer

Associate Members to the Board of Management

Werner Andexser

Siegfried Dais

Hans Hugendubel

Stephan Rojahn

Gotthard Romberg



### Supervisory Council

- Until April 21, 1998 -

Dr. phil. Dr. rer. oec. h.c. Marcus Bierich, Stuttgart Chairman Former Chairman of the Board of Management of Robert Bosch GmbH

Walter Bauer, Kohlberg Deputy Chairman Chairman of the Joint Shop Council of Robert Bosch GmbH as well as of the Combined Shop Council, and Chairman of the Shop Council of the Reutlingen Plant

Dr. jur. Peter Adolff, Stuttgart, former Member of the Board of Management of Allianz Versicherungs-Aktiengesellschaft

Knut Angstenberger, Stuttgart Department Manager at the Feuerbach Plant of Robert Bosch GmbH, and Chairman of the Joint Speaker Group of Robert Bosch GmbH and of the Group Speaker Committee

Rudolf Baron, Sibbesse Chairman of the Shop Council of the Hildesheim Plant and Member of the Joint Shop Council of Blaupunkt-Werke GmbH

Dr. h.c. Bo Erik Berggren, Stockholm Deputy Chairman of the Board of Directors of Investor AB as of May 1, 1997

Dietfried Blanarsch, Stuttgart Deputy Chairman of the Shop Council of the Feuerbach Plant and Member of the Joint Shop Council of Robert Bosch GmbH

Dr. jur. Robert E. Ehret, Frankfurt Former Member of the Board of Management of Deutsche Bank AG

Dr.-Ing. Wolfgang Eychmüller, Ulm/Donau Chairman of the Board of Management of Wieland-Werke AG

Ruth Fischer-Pusch, Stuttgart Trade Unions of the Metal Industry, District Management Baden-Württemberg Hans-Henning Funk, Hildesheim Chairman of the Shop Council of the Hildesheim Plant and Member of the Joint Shop Council of Robert Bosch GmbH

Dr. rer. pol. Johan M. Goudswaard, Wassenaar/Netherlands Former Deputy Chairman of the Board of Directors of Unilever NV until April 30, 1997

Dr. jur. Karl Gutbrod, Stuttgart Former Member of the Board of Management of Robert Bosch GmbH Chairman of the Board of Trustees of Robert Bosch Stiftung GmbH

Gudrun Hamacher, Frankfurt Managing Member of the Board of Directors of the Trade Unions of the Metal Industry

Jörg A. Henle, Berlin Chairman of the Board of Trustees of the Peter Klöckner Stiftung

Dr. rer. pol. Wolfgang Hugo, Stuttgart Former Member of the Board of Management of Robert Bosch GmbH

Olaf Kunz, Frankfurt Managing Director of the Trade Unions of the Metal Industry, Department for Union Policy

Prof. Gero Madelung, Munich Technical University Munich Chair of Aviation Technology

Prof. Dr. rer. nat. Hans-Joachim Queisser, Stuttgart Director at the Max-Planck-Institute for Solid-State Research

Gerhard Sautter, Erdmannhausen Chairman of the Shop Council of the Feuerbach Plant and Deputy Chairman of the Joint Shop Council of Robert Bosch GmbH, and the Combined Shop Council

Hans Wolff, Bamberg Chairman of the Shop Council of the Bamberg Plant and Member of the Joint Shop Council of Robert Bosch GmbH

### Management

Board of Management

Hermann Scholl Chairman

Clemens Börsig until March 31, 1997

Heiner Gutberlet

Rainer Hahn

Tilman Todenhöfer

Hubert Zimmerer

Associate Members to the Board of Management

Werner Andexser as of April 1, 1997

Siegfried Dais as of January 1, 1998

Claus Dieter Hoffmann

Hans Hugendubel

Robert S. Oswald

Stephan Rojahn as of April 1, 1997

Gotthard Romberg

# Ten Year Statistics Bosch Group Worldwide

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Sales	27,675	30,588	31,824	33,600	34,432	32,469	34,478	35,844	41,146	46,851
Foreign share as a percentage of sales	51	52	51	48	47	49	54	56	61	65
Expenditures for research and										
development	1,640	1,803	2,042	2,144	2,302	2,215	2,255	2,474	2,887	3,257
as a percentage of sales	5.9	5.9	6.4	6.4	6.7	6.8	6.5	6,9	7.0	7.0
Investments in tangible fixed assets	1,937	2,064	2,790	2,273	2,038	1,552	1,578	2,056	2,419	2,905
including domestic	1,390	1,259	1,708	1,464	1,347	990	960	1,255	1,270	1,376
including foreign	547	805	1,082	809	691	562	618	B01	1,149	1,529
as a percentage of sales	7.0	6.7	8.8	6.8	5.9	4.8	4.6	5.7	5.9	6.2
as a percentage of depreciation	128	128	162	126	103	85	90	117	117	125
Depreciation on tangible fixed assets	1,511	1,607	1,725	1,799	1,976	1,836	1,747	1,757	2,059	2,321
Employees - annual average -		2 (3433)	10.02		162/5					
(000 omitted)	166	175	180	181	177	165	156	158	172	180
including domestic	113	117	118	117	113	104	95	92	91	91
including foreign	53	58	62	64	64	61	61	66	81	89
as of January 1, of following year	168	178	181	177	170	157	154	157	176	181
Personnel costs	9,277	10,202	10,718	11,403	11,838	11,692	11,439	11,476	13,017	14,359
Total assets	20,301	22,205	23,544	24,247	24,452	25,447	27,373	28,504	32,273	34,906
Fixed assets	5,732	6,064	7,147	7,467	7,769	7,003	6,650	6,957	10,784	12,013
as a percentage of total assets	28	27	30	31	32	27	24	24	33	34
Equity capital	6,174	6,668	7,050	7,471	7,859	8,304	8,563	9,038	9,527	11,377
as a percentage of total assets	30	30	30	31	32	33	31	32	30	33
Cash flow	3,265	3,433	3,104	3,267	3,501	3,717	3,765	3,245	3,539	5,219
as a percentage of sales	11.8	11.2	9.8	9.7	10.2	11.4	10.9	9.1	8.6	11.1
Net income for the year	554	626	560	540	512	426	512	550	500	1,659
Unappropriated earnings										
(Dividends of Robert Bosch GmbH	) 43	43	43	43	60	60	60	68	68	2,209

Values in million DM

# **Bosch Group – Business Sectors**

#### Automotive Equipment

Automotive Equipment **Division** 1 ABS and braking systems Automotive Equipment **Division 2** Lighting technology

Automotive Equipment **Division 5** Fuel-injection equipment - diepel

Automotive Equipment Division 8 Semiconductors and electronic control units.

technology

### **Communications Technology**

**Consumer Goods** 

Hausgeräte GmbH<sup>®</sup>

Electrical household appliances

**Bosch-Siemens** 

**Capital Goods** 

Automation

Communications networks (private networks, public switching systems, radio-relay systems, multiplex systems, network management)

Broadband networks Terminals Aerospace engineering

#### **Power Tools** Division Electric power tools, tool attachments and accessories for the trades, industry, house and garden

**Packaging Machinery** Division

Packaging machines and equipment Machinery for the production of candies Automotive Equipment **Division 3** Engine-management systems - gasoline

Automotive Equipment **Division 6** Synthetic parts

Automotive Equipment Division 9 Starters and alternators

Security systems Traffic-control technology

Bosch Thermotechnology Division Heating and hot-water equipment, controls, gas controls

Status as of January 1, 1998

**Technology Division** Automotive hydraulics, industrial hydraulics, pneumatics, assembly engineering, drive and control engineering, deburring systems, tightening and press-fit systems

1) Brech sweenstep 50%

Automotive Equipment **Division** 4 Bodywork electrics and electronics

Automotive Equipment Division 7 Mobile communications

Automotive Aftermarket Division Distribution of automotive equipment, after-sales service, test equipment and



## BOSCH

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