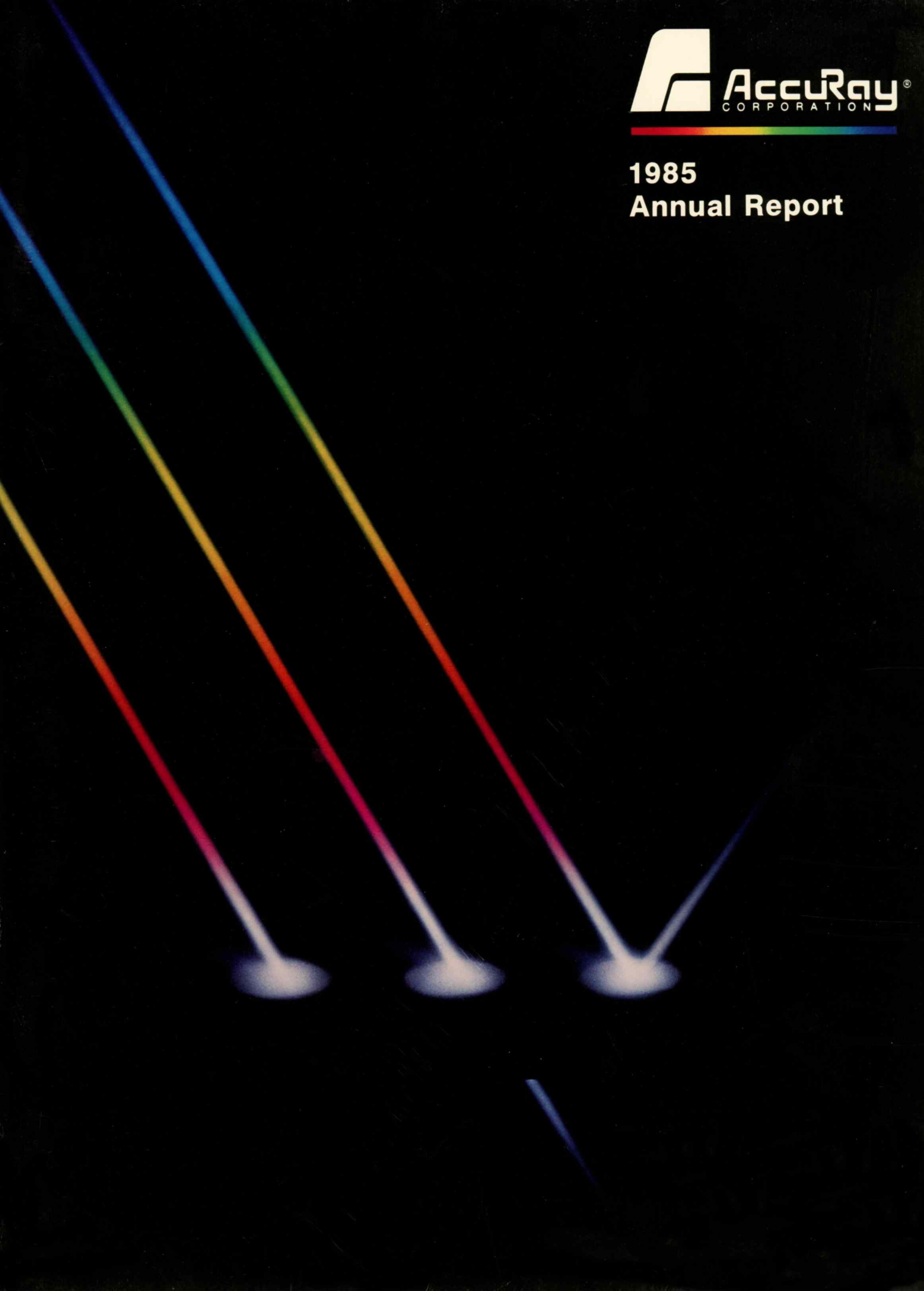




**1985
Annual Report**



Financial Highlights

Five-Year Comparison of Selected Financial Data

Years Ending December 31,	1985	1984	1983	1982	1981
	(\$ Thousands, except per share amounts)				
For the Year:					
Total operating revenues	\$150,383	\$125,847	\$116,524	\$108,714	\$108,533
Net income	7,953	6,787	5,255	3,833	3,170
Earnings per share	1.90	1.64	1.31	1.08	.90
Dividends per share	.24	.20	.16	.14	.10
Funds provided from operations	10,876	9,748	6,823	5,919	5,382
Weighted average number of shares outstanding (000)	4,193	4,149	4,010	3,551	3,535
At End of Year:					
Backlog	\$ 42,000	\$ 52,400	\$ 41,300	\$ 42,400	\$ 50,000
Total assets	114,632	100,776	85,839	83,802	96,078
Net investment in property, plant, equipment and lease/rental equipment	23,100	20,693	18,366	18,815	18,147
Working capital	58,660	51,563	46,906	40,575	42,418
Long-term debt and 5½% convertible debentures	20,952	19,582	21,226	29,618	36,225
Stockholders' equity	53,603	45,809	40,003	25,668	22,254
Current ratio	2.9:1	2.9:1	3.6:1	2.9:1	2.4:1
Debt-to-equity ratio	.4:1	.4:1	.5:1	1.2:1	1.6:1
Number of employees	1,982	1,840	1,770	1,790	1,845

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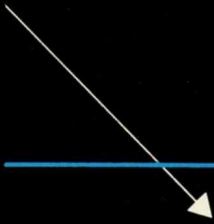


AccuRay – The Measurement and Control Company

AccuRay Corporation designs, manufactures and markets application packages — combinations of hardware, software and services — commonly called process control systems. We prefer the name measurement and control systems because that's what they do: they measure a product's most important characteristics, then control the production process. These measurement and control systems improve product quality, increase productivity, and decrease raw material and energy consumption in the factories of basic industries throughout the world.

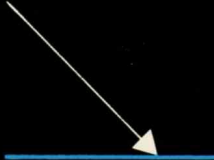
One of AccuRay's outstanding strengths is measurement. That's why last year's report highlighted the variety of technologies we harness to achieve precise product measurements. This year's cover depicts how our measurements are performed.

Transmission Measurements:




After establishing a product's "fingerprint" — the unique amount of energy loss in the measurement process — X-ray, infrared or other energy can be transmitted through the product. The amount of energy that passes through the product is measured to calculate many properties, such as the weight and moisture content of paper or the thickness of extruded plastic or rolled metal.

Shape, Appearance and Strength Measurements:

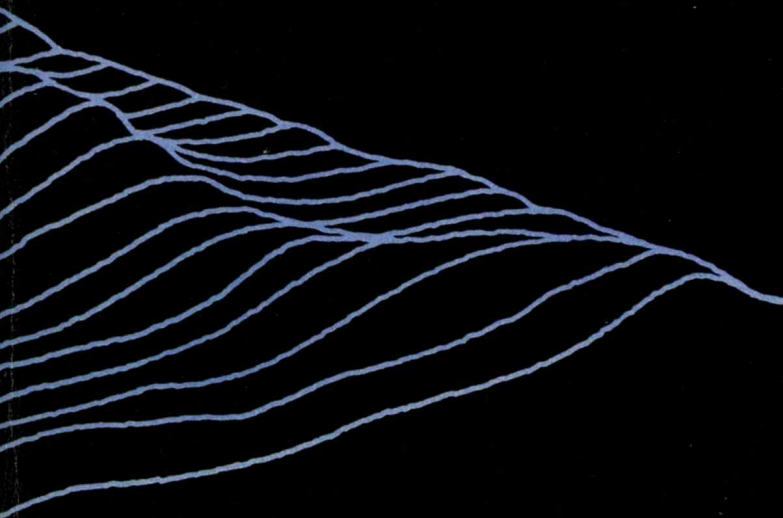


By using lasers, fiber optics and related technologies, AccuRay sensors can measure the contour or visual properties of a product, much as the human eye would. This allows an AccuRay system to make fast, accurate measurements of properties such as the strength, smoothness or formation of paper; to inspect cigarettes as they are produced at 10,000 per minute; or to determine the thickness, width and length of lumber.

Reflection Measurements:



Each product's unique fingerprint can also be used for reflection measurements — measuring the amount of energy that bounces off the product. This method is used for measuring paper color, gloss, brightness and moisture; the thickness of extrusion coatings; and other product characteristics.



Accurate measurements allow an AccuRay system to "see" our customer's product as depicted at the left. The control portion of the system's job is to modify the production process to level the peaks and valleys — until the product's properties are as flat as possible. AccuRay customers can then make their product to very exact specifications — thus improving product quality, while using precisely the amount of raw material or energy needed to get the job done right.

To Our Stockholders, Customers and Associates:

AccuRay achieved record revenues and record net income in 1985.

1985 marks the first year that AccuRay Corporation exceeded the \$150 million milestone in total operating revenues, leading to a record net income for the year of \$8.0 million. Another achievement was surpassing the \$50 million level in stockholders' equity for the first time — a significant event, considering that we had only \$19 million in stockholders' equity five years ago. As a result of increased equity and decreased borrowing, total long-term debt at year-end 1985 represented only 39% of stockholders' equity versus 211% at the end of 1980.

Financial Highlights

Net income for 1985 rose 17% to \$7,953,000, or \$1.90 per share, compared with \$6,787,000, or \$1.64 per share in 1984. Total operating revenues increased by 20% to \$150.4 million versus \$125.8 million in 1984.

New orders received in 1985 were \$93.3 million compared with \$95.0 million in 1984. As a result of a higher level of shipments in 1985, the backlog declined to \$42.0 million at year-end compared with \$52.4 million a year earlier. This backlog includes equipment and related commitments for initial services. On January 1, 1985, we began to include the value of cross-machine control actuators and other equipment supplied to customers under new OEM agreements in our reported orders, shipments and backlog. As a result, \$4.4 million of actuator equipment is included in the backlog reported above at

Operating Revenues

(Millions of Dollars)



year-end 1985 as compared with \$2.7 million reported a year earlier.

Research and development expenses were \$11.3 million in 1985, compared with \$9.5 million in 1984. This R&D investment represents a healthy 13.6% of 1985 sales revenue and 7.5% of total operating revenues for 1985.

Total operating revenues per employee increased 13% to \$78,700 in 1985 compared with \$69,700 a year earlier, with an increase in total employment from 1,840 at the end of 1984 to 1,982 at year-end 1985.

For the fourth quarter ended December 31, 1985, total operating revenues were up 24% to \$41.4 million versus \$33.4 million a year earlier. However, net income for the quarter decreased slightly to \$2,020,000, or \$0.48 per share, compared with \$2,079,000, or \$0.50 per share in the final quarter of 1984. It is anticipated that the Company will experience continued pressure on volume and earnings in early 1986 due to our lower backlog position at the beginning of the year.

New Product Introductions

AccuRay Corporation has invested \$44.5 million in research and development during the past five years — half of this amount in the past 24 months. The result is an increased level of new product introductions for measurement and actuator systems, giving AccuRay the best product position in our history and providing the nucleus for future growth.

Net Income

(Thousands of Dollars)



The following is a brief summary, by industry, of the major products which we have recently announced.

Paper

■ MICROSCAN™ Measurement

Platform: As paper machines have increased in width and speed, we have seen a real need for a new design of a measurement platform. A highly stable platform is required to carry a multi-sensor package across the widest machines under harsh environmental conditions and widely varying temperature differentials. Although this new product was formally introduced in March 1986, we completed significant field testing of 11 Measurement Platforms during 1985. These were delivered to the coated paper mill of Haindl Papier GmbH in Walsum, West Germany, for installation on paper machines, coaters and supercalenders.

■ **Optical Measurements for Opacity, Brightness, Formation, Gloss and Smoothness:** In 1984 we introduced our OptiPak Sensor, which measures opacity, brightness and formation — three of the most critical visual quality parameters of paper — with a single, compact sensor package. This same sensor was further developed in 1985 to produce a gloss measurement which exactly duplicates the industry standard for this characteristic. Both our gloss and smoothness measurements

are critically important for supercalender applications.

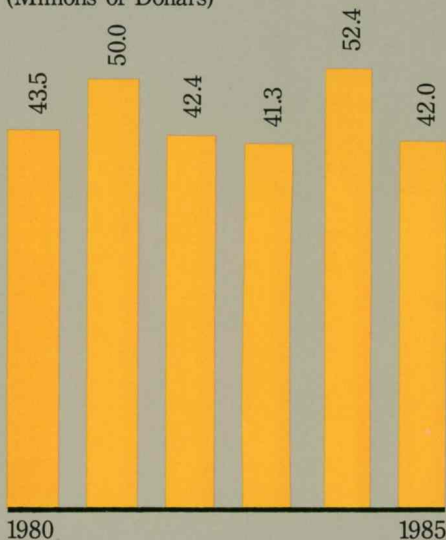
■ **Strength Measurement:** The paper industry is keenly interested in an on-machine measurement that determines the end-use performance of paper and board products while they are being manufactured. We announced in March 1986 the first on-line sensor to perform these measurements based upon technology acquired from the Institute of Paper Chemistry. Their research has established a strong relationship between common laboratory tests — such as tensile strength and bending stiffness — and the elasticity parameters measured on-line using ultrasonics velocity technology.

■ **Color Measurement and Control:** There has always been a strong demand for a measurement and control system which would allow mills producing colored paper to repeatedly meet exact color specifications during all production runs. Historically, color control systems have failed to live up to expectations because of their inability to adapt to changing process conditions. We have completed the development of a self-adaptive control which continually compensates for the effect of changing process conditions upon paper color. Our original development work was completed in the United Kingdom and

An increased level of new product introductions gives AccuRay the best product position in our history.

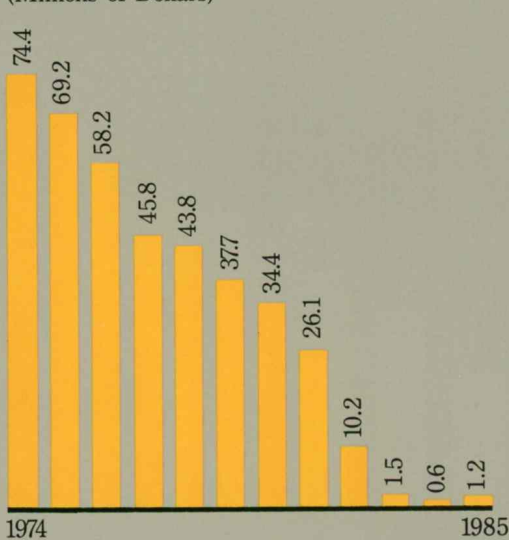
Backlog

(Millions of Dollars)



Bank Debt

(Millions of Dollars)



converted into a commercial product in 1985. The formal release to the North American market was made in February 1986.

- **Cross-Machine Control Actuators:** Three actuator systems were introduced in January 1986. These include MICROSET™ Linear Stepper Slice Actuators for basis weight, the MICROSET Water Spray for moisture and the MICROSET Thermo-Profiler for caliper.
- **DeltaComm™ User Interface:** As a result of market research and human factors studies, a radically new user interface for our AccuRay 1180 MICRO™ System, DeltaComm, was introduced in January 1985. Designed to improve system utilization, this product's compact size, simplicity and MICROgraph™ custom graphics have met with enthusiastic customer acceptance. The system offers the capability to significantly improve the resolution of profile information.

Pulp

- **Kamyr Fiberline Control System:** Final development work is being completed in 1986 to engineer our proven control strategies for Kamyr digesters into the system architecture of the Honeywell TDC 3000 distributed digital control system. The final con-

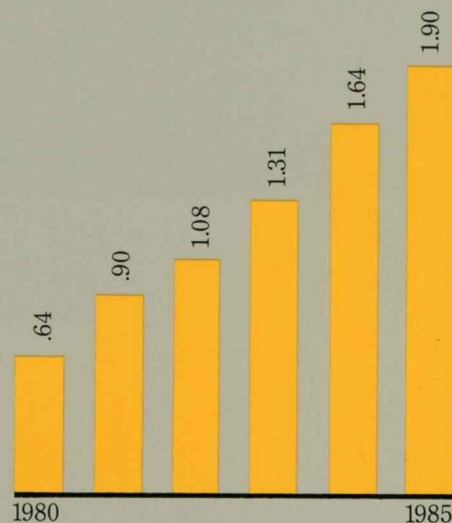
figuration is presently being implemented at five customer mills. We have developed methods of providing pulp mill customers with a "single window" into the process by using either the universal station with the Honeywell local control network or a hiway level operator station.

- **Batch Fiberline Control System:** In this application, the basic batch digester controls, including steaming and cooking, have been programmed into hiway connected multifunction controllers. Logic controls for motor start/stop, safeties and interlock functions are resident in hiway connected programmable logic controllers. The optimizing controls now reside in a Honeywell Level 6 minicomputer interfaced to the data hiway. This engineering effort on the batch system is being completed in 1986. We are currently in the start-up phase of these systems at four customer mills.

Wood

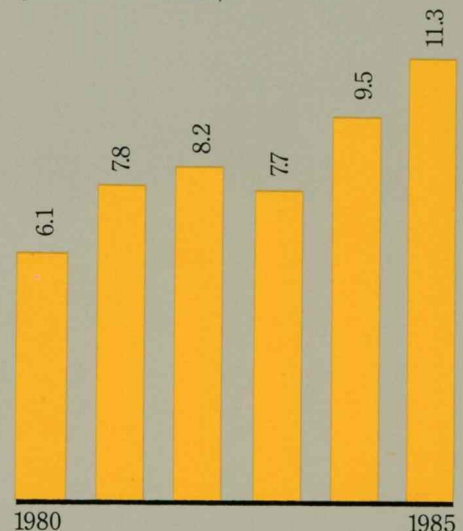
- **Laser Trimmer Optimizer System:** We introduced in 1985 a laser-based measurement system for green trimmers that extends our market to include sawmills with very fast production lines. This system uses proven optical measurement techniques to measure board length, width, thickness and edge condition before the


Earnings Per Share



Research & Development

(Millions of Dollars)





trimmer. The system's cut logic then determines the optimum trim for the board. The new system utilizes measurement technology acquired via an exclusive marketing agreement with Trienco, Inc., Montrose, Colorado.

- **Primary Breakdown Optimizer:** During 1985, we also introduced a new Primary Breakdown Optimizer system which increases lumber recovery by automatically determining the optimum cut pattern for each log processed. In a small log mill, the largest processing losses are typically attributed to the primary breakdown operation.
- **Bucking Optimizer System:** In March 1986, we introduced a new Bucking Optimizer system to cut tree length "stems" to an optimum length. This permits subsequent machine centers in the sawmill to operate more efficiently. Accurate bucking is critical to a sawmill's lumber recovery ratio and profitability.
- **Edger Optimizer System:** To complete our family of sawmill optimization systems, we introduced in March 1986 a new Edger Optimizer system. This system controls the sawing operation of this machine center to improve the recovery of saleable lumber from side boards with a large amount of waste. This system also utilizes our new laser measurement technology.

Metals

- **Aluminum Foil Measurement:** We have developed an X-ray measurement for aluminum foil that we believe is far more accurate than competitive systems. Introduced in 1985, this system will allow our customers to meet more demanding specifications for their aluminum foil products.
- **Aluminum Sheet X-ray Thickness Measurement:** This new X-ray measurement, first introduced in 1985, goes on the entry-side of aluminum rolling mills. It complements the composition-insensitive Beta thickness measurement — the industry standard for thickness measurement — installed on the exit-side of aluminum rolling mills. The high-speed measurement

provides feed forward control to smooth out incoming thickness variations.

- **Galvanized Coating Measurement:** Automobile manufacturers have dramatically increased their demand for galvanized metal. Therefore, we introduced a measurement system in September 1985 to monitor the amount of zinc or zinc-based coating which protects steel from corrosive elements.

Plastics

- **Automatic Die Control:** In November 1985, we added Automatic Die (cross-machine) Control capabilities to meet the plastics industry's growing need for enhanced product quality. This feature automatically minimizes thickness profile variations — a job which previously required manual adjustment. The Automatic Die Control feature has been incorporated into our AccuRay 7000 MICRO™ System for the extruded plastic sheet and film market.
- **Production Management Reporting:** Also introduced in 1986, this feature allows several 7000 MICRO systems on separate plastic extrusion lines to be interfaced with a personal computer for inputting information or for production management reporting.

Tobacco

- **Advanced Cigarette Measurement and Control:** For the next generation of cigarette-making machinery, we introduced in late 1985 the 7000 MICRO-Ten System with advanced performance sensors, signal processing and video display capabilities. This new system provides on-line measurement and inspection of the critical quality characteristics of each cigarette at speeds in excess of 10,000 cigarettes per minute.
- **Productivity Module:** In January 1986, we introduced the Productivity Module to replace and consolidate the electronics of various types of existing cigarette-making equipment manufactured by other companies. The Productivity Module achieves typical production increases of 6% to 8% while extending the useful life of existing production machinery.

"We will provide defect-free products and services by understanding customer requirements and performing exactly to them."

We intend to create the most complete family of superior measurement systems and process actuators in the marketplace.

1986 Strategic Plan

Each year it has become our practice to follow a strategic management planning process that sets the strategic direction for the Company. The 1986 Strategic Plan was formally approved in November 1985 by the AccuRay Board of Directors, then presented in group meetings to all Company associates based in Columbus and simultaneously videotaped for viewing by AccuRay associates throughout the world.

The 1986 Strategic Plan reaffirms our goal to position AccuRay as the Quality Leader in each of our markets. The AccuRay Corporate Quality Policy states:

"We will provide defect-free products and services by understanding customer requirements and performing exactly to them."

The plan is supported by strategic product, marketing and associate programs as shown on the opposite page. We have found this diagram useful in visualizing our corporate strategy, and felt it would be of interest to our customers and stockholders.

-
- **Core Product Programs** - We intend to prioritize and devote the largest portion of our research and development effort on creating the most complete family of superior measurement systems and process actuators in the marketplace. We will supply control products that are flexible enough to provide sophisticated control when required, while also offering simple solutions when appropriate. We will provide a complete family of useful service products which support the objective of superior system utilization. These include utilization engineering, systems engineering, software engineering, control tuning and specialized customer training. These programs are in addition to our continuing commitment to system maintenance. We will support the industry trend of integration of product control and process control by teaming with other companies who are recognized leaders in distributed control systems and plantwide information systems.

 - **Core Marketing Programs** - These represent strategic marketing programs which can have a significant effect on long-term results. We believe that **Customer Performance Reviews** are critical to quality leadership because they allow us to understand a customer's requirements more fully, and to uncover quality problems and resolve them promptly. We will continue to use **Extended Warranties** as tangible evidence of our deep commitment to reliability, low maintenance costs and performance. The concept of **Measurable Difference** means an awareness that our performance is being continually evaluated and compared with that of our competitors. The pledge of **EVERGREEN Technology™** ensures that our systems can be kept up-to-date in terms of function and capability — at a reasonable cost to the customer and without obsoleting his entire initial investment.

 - **Core Associate Programs** - These strategic programs provide the framework through which AccuRay associates are challenged to achieve, and are rewarded for, superior performance. The **All-Salaried, All-Incentive** and **All-Ownership** programs foster a sense of ownership, committed involvement and cost-consciousness by providing each associate with a stake in the long-term and short-term financial success of the business. The **Counseling Review, Performance Review** and **Learn and Improve** programs provide the environment for every AccuRay associate to grow and participate in the Company. The **Quality Performance Awards** program promotes an increased awareness of our quality commitment by providing a forum in which quality performance can be recognized and rewarded.

CUSTOMER SATISFACTION

WHY
The Customer Buys From AccuRay

SUPERIOR SYSTEM UTILIZATION
Throughout System Life

SUPERIOR

- Measurement Systems
- Actuators

APPROPRIATE ARCHITECTURE

- Displays
- Computing
- Electronics
- Communication

COST-JUSTIFIED

- Control
- Services

WHAT
The Customer Buys From AccuRay

CUSTOMER PERFORMANCE REVIEWS

Commitment To Superior Utilization

EXTENDED WARRANTY

Cost-Effective, Failure-Free

MEASURABLE DIFFERENCE

In Sensors, Actuators, Utilization, Results

EVERGREEN Technology

Cost-Effective, Up-To-Date Functionality Throughout System Life

PERFORMANCE REVIEWS

(Internal And External)

HOW

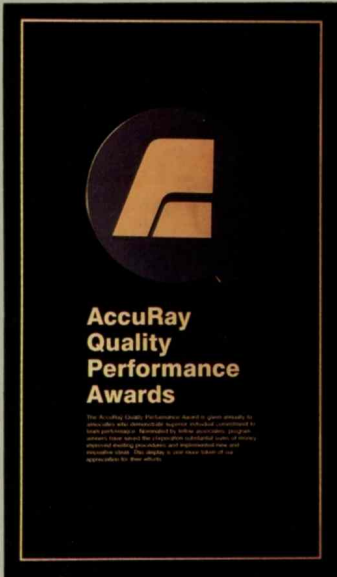
We Measure Conformance To Requirements

HOW
AccuRay Creates An Environment For Success

SUPERIOR ASSOCIATE PERFORMANCE

- ALL-SALARIED
- ALL-INCENTIVE
- ALL-OWNERSHIP
- ASSOCIATE PERFORMANCE REVIEWS
- COUNSELING REVIEWS
- LEARN AND IMPROVE
- QUALITY PERFORMANCE AWARDS

A daily reminder of AccuRay's Quality Leadership and Customer Satisfaction goals is furnished by the Visitor Demonstration Center and plaques honoring past Quality Award winners — both located at the highest traffic area in AccuRay's worldwide headquarters.



Specification-Thru-Installation Program

In recent years our business has become increasingly complex as we routinely undertake larger upgrades of present installations and more "turnkey" responsibilities for new installations. During the 1985 strategic management planning cycle, we studied these trends and concluded that significant improvement of our corporate performance must include structural changes in how we manufacture and install our systems. AccuRay customers have a right to expect professionally planned and executed installations which produce agreed-upon results within an agreed-upon time period. Because of our worldwide operations, we must accept the unique challenges of widespread geography, differing languages and cultures, and the problems of dealing with peak workloads, third-party contractors, etc. We also found that the "single-supplier responsibility" issue is an important part of the customer decision to place an order with AccuRay.

The current manufacturing process at AccuRay is composed of a series of functions (listed below) which describe how we manufacture and deliver our systems to the customer:

1. Selling the system.
2. System Specification in the field.
3. Production Engineering in the factory.
4. Assembly/Testing in the factory.
5. Installation at the customer site.
6. Results achievement.
7. Utilization.

As a result of our study, we concluded that we can improve our overall productivity by expanding the present manufacturing responsibilities of production engineering and assembly/test (which take place in the factory), to include the functions of product specification and installation (which take place in the field). These changes are intended to bring AccuRay field associates and factory-based engineering/manufacturing associates together to produce a better definition of customer requirements and a more efficient installation. In the future, we will have a single organization responsible for specifying, manufacturing and installing AccuRay systems. In this manner, we are convinced that we can reduce both manufacturing and installation costs while improving the quality of the installed system. We believe that the Specification-Thru-Installation program will become one of our key corporate programs to improve profitability in future years.

Irish Plant Expansion

We have now completed the doubling in size of our Irish manufacturing facility in Dundalk from 40,000 to 80,000 square feet as part of our planned expansion in the Republic of Ireland. This increased capacity is necessary to better serve our growing European business and to increase our amount of manufacturing content produced within the European Economic Community. The expansion will allow this facility to begin production of our new MICROSCAN Measurement Platform for the paper industry, and to further expand

We have now completed the doubling in size of our Irish manufacturing facility...to better serve our growing European business.

into the manufacturing of systems for the steel, aluminum and plastics industries. The added space will also be used for AccuRay system demonstrations for European customers, and as a base for training both customers and AccuRay European associates.

Research Limited Partnership

In an offering similar to that reviewed in last year's Annual Report, we were able to complete another AccuRay Research Limited Partnership during 1985 which provides increased R&D investments in 1985 and 1986. The partnership takes advantage of federal tax benefits which have been established under existing tax laws to encourage private investors to take financial risks to fund research and development. We were able to raise approximately \$2.2 million for the purpose of conducting research and development for three separate systems to be applied in paper mills and sawmills. William Blair & Company served as the broker/dealer for the offering. The systems are described in the prospectus as:

- An "Edger Control System" which will be a system for use in sawmills to measure and control the "edging process" where "rough-edged" lumber planks are examined and then sawed lengthwise into standard, square-edged boards.
- A "Measurement Improvement System" which will be a system designed to be an electronically controlled support frame to provide on-line, cross-sheet scanning for the measurement of paper during manufacture.
- A "Cross-Machine Control System" which will be a system composed of independent modules designed to control the basis weight, moisture content and thickness of paper.

Visitor Demonstration Center

The new Visitor Demonstration Center in our Columbus, Ohio, headquarters facility opened in April 1985 and is already a tremendous success. By year-end, approximately 600 customers and potential buyers had participated in meetings and demonstrations in the Center, with about 25% of

these coming from outside the United States. Since customers today are confronted with a complexity of system choices, they really need to know which supplier can make the most productive, cost-effective contribution to their operations. The new Center allows us to convincingly demonstrate our family of measurement systems and actuators in a manner that guarantees an exceptionally efficient and productive visit. Customers invariably leave Columbus with a far greater appreciation of our full capabilities and our dedication to superior utilization of every AccuRay system.



David L. Nelson
Christopher J. Campbell Robert E. Swenson

David L. Nelson
President and Chief Executive Officer

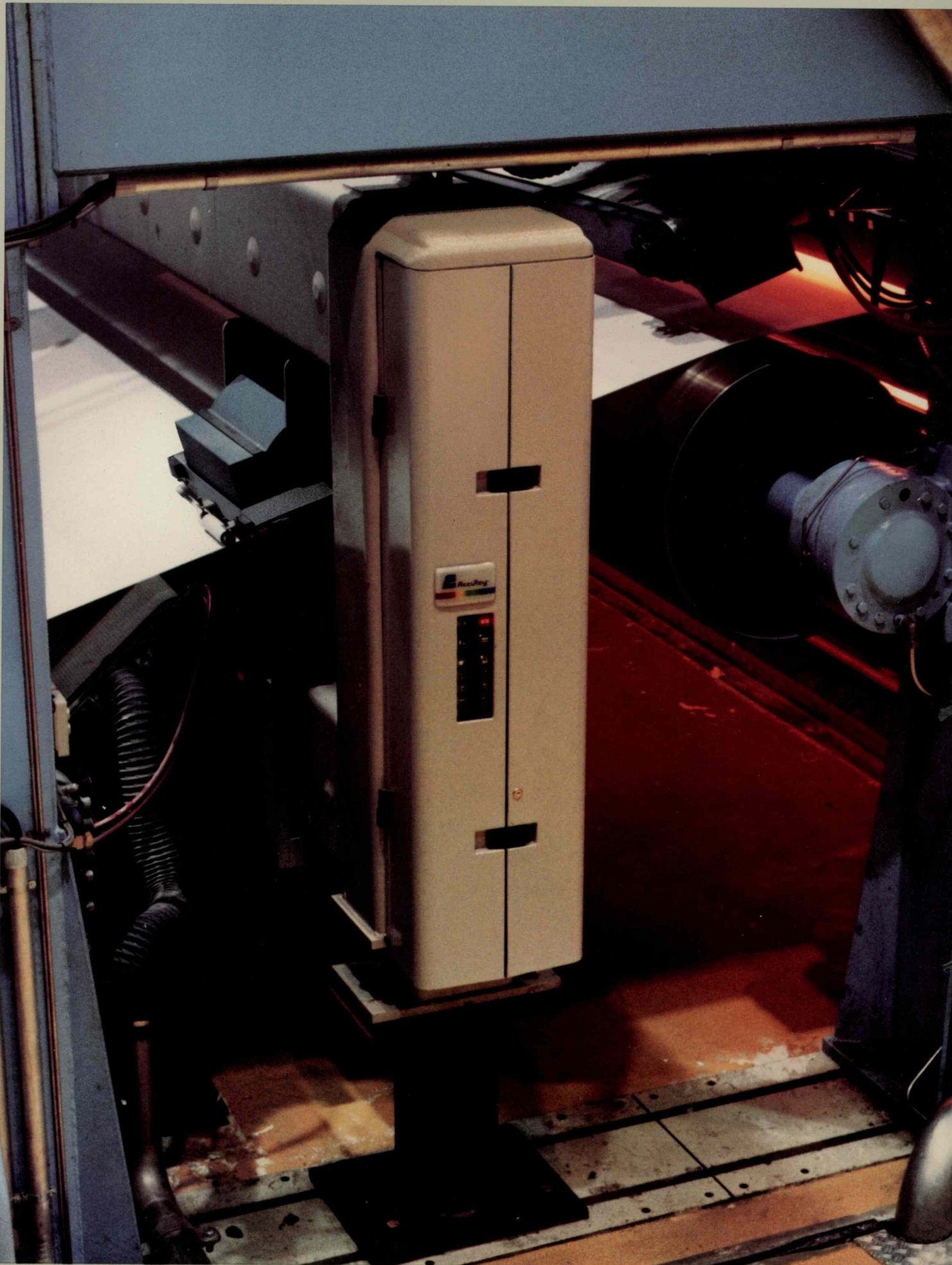
David L. Nelson

Christopher J. Campbell
Executive Vice President
and Chief Operating Officer

Christopher J. Campbell

Robert E. Swenson
Senior Vice President
and Chief Financial Officer

Robert E. Swenson



Pulp & Paper

"AccuRay's new Measurement Platform directly responds to our need for more precise measurement of paper properties and improved measurement system reliability. In fact, we were so pleased with the new design and performance that we have installed 11 of these in our new state-of-the-art Walsum (West Germany) light-weight coated paper mill."

Franz P. Kaessberger
Director Dipl.-Ing
Haindl Papier GmbH
Augsburg, West Germany



In March 1986, AccuRay formally introduced the MICROSCAN Measurement Platform, an improved-design measurement system with superior performance ratings. The Measurement Platform features dramatic improvements in measurement accuracy, system reliability and serviceability — at a lower lifetime cost to the customer.

According to analyst George Adler of Smith Barney, Harris Upham & Company, "The risk that the paper industry will cut back the installation of process control systems has abated." Companies will add controls even if "... cash flow deteriorates."

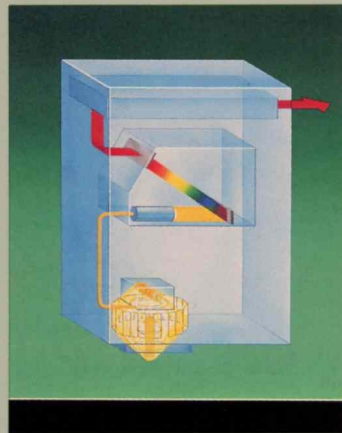
We also believe the paper industry will continue to invest in measurement and control systems that improve the quality of paper products. This has been particularly true over the past few years in North America and, during the latter part of 1985, in the European marketplace, as those economies began to gain momentum.

AccuRay measurement and control systems meet the need for improved paper quality — and lower production costs — by helping papermakers manufacture paper with consistent uniformity of physical product characteristics and appearance properties.

AccuRay continues to respond to this industry's challenges by offering a greater variety of accurate sensors. For example, AccuRay has applied ultrasonic technology to introduce the first commercially-available, on-line strength sensor. This sensor measures the tensile strength, compression strength, crush or burst strength and stiffness of the paperboard used in cardboard containers and other packaging items. In addition to this new strength sensor, AccuRay has recently introduced new sensors for measuring color (right), smoothness, formation, opacity, brightness, moisture, basis weight, caliper, and other critical paper properties.

Our new Measurement Platform (see left) enhances the performance of all AccuRay sensors by eliminating the measurement errors that multi-sensor "measurement packages" often experience as they traverse wide paper machines under harsh environmental conditions. To combat this, the Measurement Platform has a unique "A" section box-beam support structure that possesses superior stability. Its vital inner workings utilize specialized materials fully sealed from exterior contaminants. The exterior is protected from corrosive materials by three layers of advanced-technology coatings. We also designed the Measurement Platform for quick, easy access to all the inner workings to facilitate fast installation and simplified, cost-effective maintenance while the process is running. Because of these advantages, Measurement Platform is the most advanced measurement system on the market — and the first AccuRay product covered by a full 3-year warranty.

The MICROSCAN Color/Brightness Sensor uses the entire visible spectrum of light to constantly monitor paper color/shade and brightness. Introduced in February 1986, our color measurement and control package is the first to successfully conquer the complex process of continually mixing dyes to create different shades of colored paper.





Pulp & Paper

"We were skeptical about slice lip control at first. It is a very complex calculation with a lot of headbox and wire variables. What we were concerned about was whether the AccuRay system could operate within the bending limits and still give us a flat sheet. Needless to say, we were pleasantly surprised."

Elgie Harrison
Production Superintendent
Containerboard Division
Weyerhaeuser Company
North Bend, Oregon



The pulp and paper industry's need to improve paper quality and reduce manufacturing costs is driving the addition of cross-machine controls to new, as well as existing, measurement and control systems. These controls are currently winning rapid acceptance, as indicated by AccuRay's five-year average annual growth of 66% in cross-machine control sales.

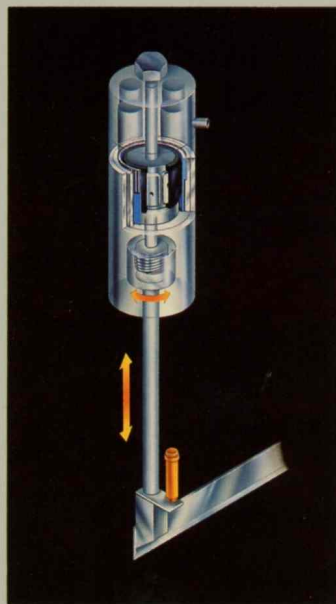
AccuRay is aggressively pursuing a program to create the most complete family of cross-machine controls and actuators available from a single supplier. This program calls for the introduction of more advanced control features, such as our SmoothSlice™ feature, and new actuators manufactured by AccuRay for weight (see right), moisture and caliper cross-machine control. Actuators are the devices which physically implement the control actions generated by AccuRay 1180 MICRO paper machine measurement and control systems.

AccuRay has also taken some creative approaches to conducting business in markets where traditional approaches have fallen short of the mark: markets such as Brazil, via a manufacturing and marketing agreement with a Brazilian firm, ESCA; and Japan, through a partnership with a Japanese firm, Yamatake-Honeywell.

In March 1985, AccuRay completed the first installation of an AccuRay 1180 MICRO System in the People's Republic of China (PRC). This initial success led to 12 additional system orders from the PRC during 1985. Annual paper and paperboard production in the People's Republic of China is currently about 7.5 million metric tons per year, and the Chinese hope to increase capacity to about 15.6 million metric tons annually by the year 2000. We foresee a long-term need to modernize these mills, and thus a large potential market for AccuRay products and services.

The "human factor" design of our DeltaComm operator station features high-resolution graphics, simplified keypad functions and a joystick for easy operator interface. Introduced in January 1985, this product, along with its MICROgraph custom graphics-building package, enjoyed a high level of acceptance among our paper industry customers.

The AccuRay MICROSET Linear Stepper slice actuator is such a new approach to basis weight cross-machine control that it has earned two separate patents. This new actuator offers better resolution, greater speed and a larger control range than competitive approaches. AccuRay has also introduced new actuator systems for moisture (the AccuRay MICROSET Water Spray) and for caliper (the MICROSET Thermo-Profiler).





Pulp & Paper

"AccuRay distributed controls for our fiberline and paper machines are major components in a project to make this one of the world's most automated mills and a high-quality, low-cost producer of linerboard. Throughout this complex project, the relationship between AccuRay and Container Corporation of America, as well as AccuRay's performance, has been excellent."

Paul Magnell
Vice President and
Resident Manager
Container Corporation
of America
Fernandina Beach, Florida

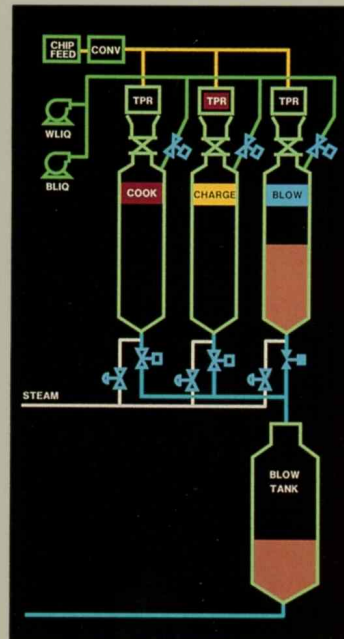


The current situation in the worldwide pulp market is one of reduced demand and over-capacity, resulting in lower overall pulp prices. While this situation changes from time-to-time, the long-term trend indicates that pulp producers need to compete more effectively on quality and price, while keeping their costs under control. The industry is looking to automation as a key method for improving quality and controlling costs. Many mills are preparing to modernize their control system approach by adding distributed control systems with optimizing capabilities.

AccuRay's new Fiberline Control System will meet this emerging need by integrating regulatory and optimizing controls into a distributed system architecture. At present, this system is being used for optimizing pulp mill production and linking pulp mill process control with paper machine product measurement and control systems. Additional capabilities will be merged into the system to achieve a universal window for optimizing the entire paper production process — from the pulp mill through the paper mill. Future expansions will utilize product introductions by both AccuRay and Honeywell to achieve true integration of product, process and production control within a plantwide automation system.

The AccuRay Fiberline Control System, a product born from a 1984 agreement between AccuRay and Honeywell, Inc., combines AccuRay's expertise in paper machine and pulp mill control with the Honeywell TDC 3000, a state-of-the-art distributed computing system. The first installation of this product has been successfully completed at the Fernandina Beach, Florida, mill of Container Corporation of America.

AccuRay has created an integrated system for controlling the pulp production process which combines AccuRay optimizing control with regulatory control via programmable logic controllers, basic controllers, multifunction controllers and the Honeywell distributed computing architecture. This scheme provides superior reliability and functionality for fiberline control of Kamyr digesters, batch digesters and washing lines.





Wood

"Since the installation of our AccuRay system, we have seen a verifiable, permanent increase in all of our lumber recovery factors. The system not only gives us accurate measurements, but also the flexibility to accurately trim or remanufacture lumber based upon each product's value, rather than volume alone. Overall, the system's performance has met or exceeded our expectations."

Pete Stone
Plant Manager
International Paper
Leola Lumber Mill
Leola, Arkansas



The Wood Products market continues to be an area with considerable growth potential for AccuRay. We expect to increase our share of this market by offering superior measurement and control products for specific machine centers within the sawmill.

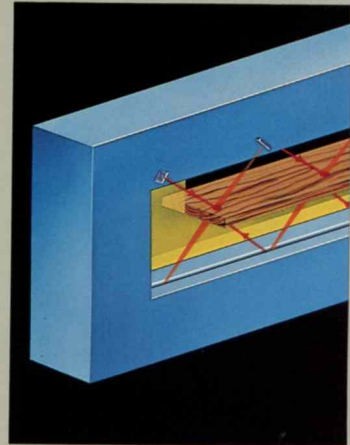
Our response to the sawmill market is an example of AccuRay's commitment to customer satisfaction. To meet the needs of smaller sawmills, we began using a personal computer as the main computing module for our popular Trimmer Optimizer product. After several successful installations of this product, AccuRay now uses the flexible, cost-effective personal computer architecture for all new sawmill product offerings. We have also enhanced the capabilities of our Trimmer Optimizer line of products by adding laser-based measurements during 1985 (see right). The resulting 6000 PC Laser product offering is ideal for sawmills with large logs, wide boards or very fast line speeds.

During 1985, AccuRay introduced a new Primary Breakdown Optimizer system followed by the 1986 introductions of Bucking Optimizer and Edger Optimizer systems. Bucking and Primary Breakdown are the first two machine centers in a sawmill, where tree stems are processed into logs and then cut into rough, untrimmed planks. Automatic measurement and control of these two processes allow sawmills to obtain more useable lumber, as well as more valuable lumber, from the same amount of raw material.

Of all these new product offerings, the AccuRay Edger Optimizer system, which combines laser and optical measurement techniques, addresses the largest potential market. The edging machine center is one of the last in a sequence of sawmill processes for green lumber. Since value has already been added to lumber in all previous stages of the process, inefficiencies in this area have a serious impact on production costs. The superior measurement and control logic included in the AccuRay Edger Optimizer is expected to substantially improve the volume and value of lumber produced by sawmills.

Building upon superior measurements and an unmatched track record of results, AccuRay is now expanding its Wood Products line of systems to include several new applications. Shown at left is the highly successful AccuRay Trimmer Optimizer which uses optical measurement techniques, including laser light and proprietary optics, to determine the size and shape of dimensional lumber.

Through an exclusive marketing agreement with Trienco Inc., Montrose, Colorado, AccuRay now offers systems using laser-based measurement technology. Introduced as part of the AccuRay 6000 PC Laser™ Trimmer Optimizer System in 1985, this same laser technology is also used in our new Edger Optimizer introduced in March 1986.





AccuRay

PRODUCT: BAREX 400-2 LINE STATUS: 1 DATE: 05/11
ROLL: 1 LENGTH: 1000 LINE: 0 TIME: 05:10

TEMPERATURE

WELD 32.57
TARGET 32.50
AVERAGE 32.41
MIN 31.80
MAX 33.02
1.00 UNITS/0.01

WELD

WELD 33.54
TARGET 32.50
AVERAGE 32.43
MIN 31.84

1.00 UNITS/0.01

LINE SPEED

LINE SPEED 0.0
FEED SPEED 0.0
PROCESS DISPLAY 500
PROCESS DISPLAY 500

ALARM

ACTUATORS AT LIMITS

CONTROL UNIT
STANDARDIZE
0.0

7000 MICRO

We

Plastics

"The AccuRay 7000 MICRO measurement and control system helps us produce uniform extruded sheet that meets stringent Oscar Mayer meat packaging requirements — at lower costs."

Ken Lemmer
Plastics Operations Manager
Oscar Mayer Foods Corporation
Madison, Wisconsin



Introduced in late 1984, the 7000 MICRO system features accurate, fast and reliable thickness measurement for individual plastics extrusion lines, in a cost-effective microcomputer-based system.

AccuRay has been working to further serve the plastics industry by adding new applications for both the 7000 MICRO and 1180 MICRO systems. In addition to the flat extruded plastic sheet and film segment, we see opportunities in more complex applications, such as co-extrusion, extrusion coating, calendaring and multi-layer extrusions. This optimism is supported by McGraw-Hill projections for up to an 18% increase in capital spending by the plastics and allied industries during 1986. By matching our proven measurement capabilities to the needs of this growing market, we anticipate significant growth in this area.

During 1985, most 7000 MICRO System purchases were displacements of prior technology systems. In the case of upgrades to older AccuRay systems, customers took advantage of their existing frame and sensor packages to reduce new system costs. Besides improved measurement and updated electronics, the 7000 MICRO offers Automatic Die (cross-machine) Control capabilities (see right) and a new DataLink feature. DataLink allows communication between IBM-compatible personal computers and multiple 7000 MICRO systems for management information reporting and entering data into the system.

Other traditional AccuRay applications, such as fiberglass insulation and aseptic packaging, continue to be strong markets for the advanced multi-variable measurement and control capabilities of the 1180 MICRO System. We are also pursuing several new applications for the 1180 MICRO, including measurement and control of magnetic tape for audio and video recordings and vinyl calendaring processes that produce vinyl wall coverings and automotive interiors.

To meet the industry's growing need for better product quality, AccuRay added Automatic Die (cross-machine) Control capabilities to the 7000 MICRO System during 1985. This feature automatically minimizes thickness profile variations to create more uniform flat extruded plastic sheet and film products.





 AccuRay

Metals

"We anticipated a trend towards fewer, higher quality suppliers in all of our markets, particularly the automotive industry. In order to make sure that McLouth Steel Products Company was positioned to benefit from this trend, we added the 7000 MICRO System to our tandem rolling mill. This program has allowed us to strengthen our position in all of our markets, especially those that require steel rolled to close thickness tolerances."

William E. Schnitgen
Vice President and
General Manager
Gibraltar Plant
McLouth Steel
Products Company
Gibraltar, Michigan



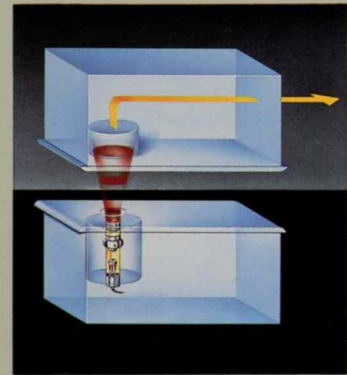
The AccuRay 7000 MICRO System for sheet metal applications provides the exact measurement and control needed to meet tighter quality/tolerance standards and statistical quality control reporting requirements.

AccuRay continues to capitalize on its reputation as the high-quality supplier of measurement systems for cold rolling and inspection lines in the steel and aluminum industries. These industries are investing in AccuRay systems because they are faster — measure more of the product — and are more precise. In many cases, end-users such as the automotive industry require verification of their supplier's product quality through statistical quality control (SQC) reports — such as the one-page SQC report compiled by the 7000 MICRO.

Additional growth in this industry will come from our established customer base and new applications within these industries, including aluminum foil (see right) and galvanizing. Demand for galvanized metal is expected to double by 1987, as auto manufacturers look to create car bodies with improved corrosion resistance. In fact, projections indicate that by 1990, sixty percent of all steel used in cars will be galvanized. In September 1985, AccuRay introduced a system to measure the zinc or zinc-based coating which protects steel from corrosive elements. The system's proprietary X-ray measurement determines the thickness and uniformity of these protective coatings by measuring the amount of X-ray energy "fluoresced" by the zinc or galvalum coatings.

In 1986, we introduced an X-ray measurement that measures the thickness of aluminum sheet as it enters a cold rolling mill. This sensor works in tandem with our composition-insensitive Beta sensor, which measures the aluminum's thickness as it leaves the rolling mill. The combination of these before-and-after measurements allows our customers to anticipate and compensate for thickness fluctuations in their raw materials, thus producing a more uniform aluminum sheet end-product. We anticipate that this new sensor, like our Beta sensor, will become the industry standard for thickness measurement.

The new 7000 MICRO thickness measurement system for aluminum foil applications features a proprietary, low-energy X-ray sensor which is up to twice as accurate, 20 times faster and three times less sensitive to alloy composition than other systems.

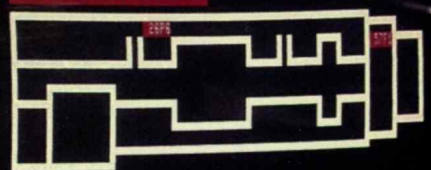




AccuRay

RAPPORT DES ETATS

HEURE 1112
12 / 4 / 95



RAISON D'ARRET: 35
MAGASIN CIC

INTERDICTION DE DEPART:
PLAFOND V

25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

A numeric keypad with letters A-Z and numbers 0-9, used for machine control.



Tobacco

"Based upon over 25 years of experience with AccuRay, we selected them as the supplier for our Electronics Consolidation Project. Throughout this relationship, AccuRay's spirit of cooperation and the high quality of their products and services have continually met or exceeded our expectations."

Marcel Dubuc
Factory Manager
Imperial Tobacco Ltd.
Quebec City PQ
Canada



One of AccuRay's newest products, the Productivity Module, allows cigarette factories to improve the operating efficiency and productivity of aging production machinery. The Productivity Module replaces the outdated logic and sequencing electronics originally supplied with these machines and updates them with modern microprocessor technology. It also consolidates all alarm and machine stoppage reporting on one video display so operators can quickly determine why the process has stopped and what must be done to get it restarted.

AccuRay continues to develop and market products which support our traditional leadership position in the tobacco industry. (Our systems are installed in the factories of every major cigarette producer in the world.) This worldwide market offers unique opportunities for applying AccuRay's measurement and control expertise.

Although cigarette production continues to grow in many developing countries, it has leveled off in North America and Europe. As a result, manufacturers are extremely interested in improving product quality and reducing production costs. This scenario creates opportunities for AccuRay in two distinct areas: retrofitting existing cigarette making complexes to increase their production volume and productivity; or, adding measurement and control to new, highly-efficient cigarette production machinery.

For updating existing machinery, AccuRay has introduced the Productivity Module (see left). This new product typically increases productivity by 6% to 8% through reduced waste during machine start-up and shutdown, and improved overall product quality.

For new high-speed makers, AccuRay has refined its sensor, signal processing and video display capabilities to create the 7000 MICRO-Ten. These system refinements allow the 7000 MICRO-Ten to measure and inspect the critical quality characteristics of each cigarette — on-line — at speeds in excess of 10,000 cigarettes per minute.

The new AccuRay 7000 MICRO-Ten System is designed to handle the next generation of cigarette-making machinery which will reach speeds of 10,000 cigarettes per minute or more. The heart of this system is a new Weight Measurement Unit which features improved protection against environmental conditions and faster signal processing for better accuracy during high-speed operation. In keeping with our EVERGREEN objectives, 7000 MICRO-Ten capabilities are easily merged with our current Cigarette Inspection Module (CIM™) which inspects cigarettes for physical defects. Shown below is the CIM Tip Scanner, which performs on-line inspection of filter cigarettes and rejects those with misattached or missing filters.





Performance Engineering

"Customer Performance Reviews have helped both the Owens-Illinois mills and the respective AccuRay service organizations to focus on the availability, reliability, utilization and results achieved with our AccuRay systems. As a result, the performance of our installed AccuRay systems has been significantly improved and the relationship between Owens-Illinois and AccuRay greatly enhanced."

Tom Theiler
Vice President and
General Manager
Primary Operations
Owens-Illinois, Inc.
Toledo, Ohio



Our success depends upon satisfied customers: customers who recognize that they are receiving — and will continue to receive — the benefits agreed upon when they purchased an AccuRay system. That's why our concept of system service, what we call Performance Engineering, goes beyond basic maintenance processes that simply keep the system working. Instead, our goal is maximum system utilization — ensuring that every AccuRay system is used effectively at all times. Our intent is to make each system we install work as well as possible, then build to higher, more sophisticated levels of system performance and utilization — and thus greater customer satisfaction.

Our Performance Engineering group plays a key role in creating the environment for effective utilization. First, the AccuRay system must perform reliably all the time. Then the users must have confidence that it is performing correctly: that the measurements are accurate; that the controls are precise; and that the information displayed is correct.

Above all, the system's full range of capabilities must be used. Management must be educated about these capabilities to focus their attention on the value of the system, then motivated to become part of the utilization process. On-going training of customer users — both operators and supervisors — is an important factor for success, especially since the customer's people, processes and product standards may change from year-to-year.

In addition to Performance Engineering, the utilization process is further strengthened by Customer Performance Reviews (see left). This program provides the opportunity to measure our performance, take prompt corrective action and drive effective utilization throughout the system's life.

"In many cases, we (Performance Engineering associates) are AccuRay in the customer's eyes. Because we're on the front-line, we're in the best position to take the lead and promote customer satisfaction on a day-to-day basis. Our mission is to educate the customer on what his system can do and then help in any way possible to achieve better utilization."

(L to R):
Charles Massey
Systems Engineer
Mario Ostria
Senior Customer Engineer
Dave Mitchell
Customer Engineer
Dave Burkovich
Utilization Engineer



The Customer Performance Review program — regularly scheduled meetings between AccuRay and customer representatives — is a critical element of AccuRay's quality leadership goal. The open flow of communication created by this program helps us fully understand our customers' needs; uncover and promptly resolve quality problems; and better anticipate future customer requirements.

Consolidated Statements Of Operations

	Year Ended December 31,		
	1985	1984	1983
(\$ Thousands)			
Operating Revenues			
Sales	\$ 82,742	\$ 63,902	\$ 56,204
Service and Leasing	67,641	61,945	60,320
Total Operating Revenues	150,383	125,847	116,524
Cost of Sales			
Sales	47,797	32,641	28,742
Service and Leasing	48,574	46,762	43,736
Total Cost of Sales	96,371	79,403	72,478
Gross Profit	54,012	46,444	44,046
Deductions			
Selling, Administrative and Other Expenses	34,671	29,115	28,618
Research and Development Expenses	11,265	9,540	7,746
Interest Expense, net	1,047	743	1,987
Other Deductions (Gains)	(1,924)	(468)	26
	45,059	38,930	38,377
Income Before Income Taxes	8,953	7,514	5,669
Provision for Income Taxes	1,000	727	414
Net Income	\$ 7,953	\$ 6,787	\$ 5,255
Earnings per Share	\$ 1.90	\$ 1.64	\$ 1.31
Dividends per Share	\$.24	\$.20	\$.16

The accompanying notes are an integral part of these statements.

Directors and Officers

Directors

Edward McC. Blair

Senior Partner
William Blair & Co.
(Investment Banking)

Christopher J. Campbell

Executive Vice President
AccuRay Corporation

Dr. Donald D. Glower

Dean, College of Engineering
The Ohio State University

Dr. J. Laurence Kulp

Director of Research
National Acid Precipitation
Assessment Program (NAPAP)

William M. McLaughlin

Chairman
Calibre Corporation

Dr. David L. Morrison

President
IIT Research Institute

David L. Nelson

President
AccuRay Corporation

George F. Schlaudecker

Consultant

Robert E. Swenson

Senior Vice President - Finance
AccuRay Corporation

We wish to pay tribute to Henry R. (Roy) Chope, a director of AccuRay and one of the Company's founders, who passed away on October 16, 1985. Roy played a key role in the research, development and engineering activities that helped make AccuRay a leader in the measurement and control system business.



David L. Nelson

Edward McC. Blair

George F. Schlaudecker

Dr. J. Laurence Kulp



Christopher J. Campbell

Dr. David L. Morrison

Dr. Donald D. Glower

Robert E. Swenson

Operating Officers of AccuRay Corporation and Subsidiaries

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Senior Vice President

Maxwell L. Close
Vice President

Donald D. Danison
Vice President

John E. DeWitt
Senior Vice President

John E. Eickelberg
Vice President

David J. Foster
Vice President

Ladd R. Grapski
Controller

Herbert J. Kahn
Senior Vice President

Vincent J. Mahoney
Director of European Finance

Hans K. Morck
Director of Treasury and
Development - Europe


Dennis A. Orwig
Vice President

Ronald F. Shuff
Secretary and
General Counsel

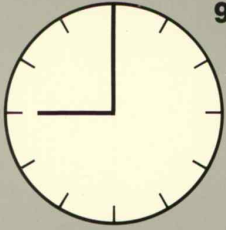
Douglas J. Spence
Vice President

John C. Witherspoon
Vice President

Robert F. Zust
Treasurer



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Telex: 246675 ACCURAY IN COL

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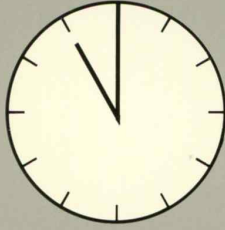
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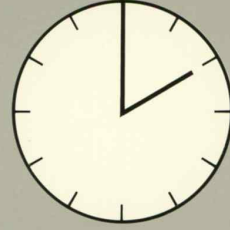
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11 a.m.

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2 p.m.

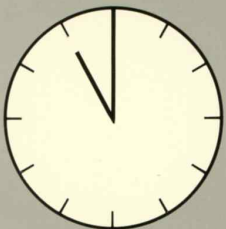
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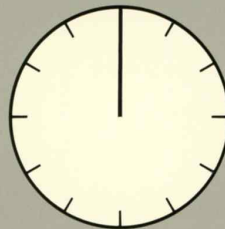
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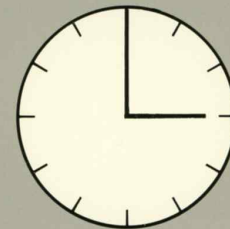
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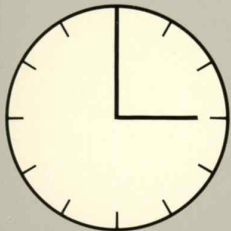


3 a.m.

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3 p.m.



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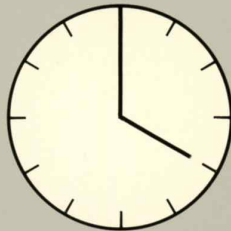
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4 p.m.



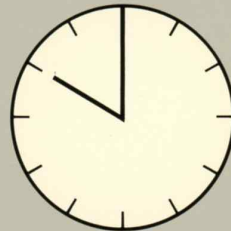
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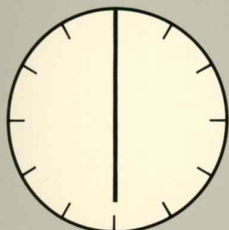
10 p.m.



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Telex: 20886 ACCSIN

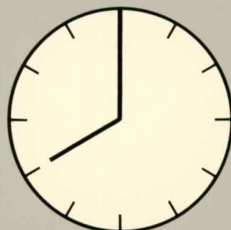
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8 a.m.



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AccuRay 7000 MICRO, EVERGREEN Technology,
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