

AccuRay Market Overviews

AccuRay products are designed to:

- Save Raw Materials and Energy
- Increase Productivity
- Reduce Costs
- Improve Product Quality

Pulp Market

These words are printed on paper that had its beginning as a soft, moist, oatmeal-like material composed of wood fiber, chemicals and water. This material is known in the paper industry as pulp. Pulp is produced in a complex scientific process which requires an abundance of cost-intensive chemicals and energy. Like energy, the cost of these chemicals has risen sharply over the last several years, and 1981 projections indicate an additional 7 to 30 percent increase for all pulping chemicals.

Aware of these rising costs, pulp mill managers are on the lookout for better manufacturing methods to meet the paper industry's raw material demands. A cost effective option is AccuRay's 4200 MICRO™ pulp mill control system which maximizes production while optimizing chemical and energy usage. The 4200 MICRO improves finished product quality by insuring that the paper machine is provided with the highest quality pulp. The system's comprehensive pulping control optimizes all process inputs to reduce production costs and increase profit margins.

The AccuRay 4200 MICRO system can be tailored to control any of the three major pulping processes: continuous digesting, batch digesting and bleaching. This control can be extended to another high-cost area, the power house, where power and recovery boiler control systems can provide significant savings.

AccuRay's unequalled capabilities in this potential \$170 million pulp mill control market provides for expansion and continued market leadership.



Paper Market

Transforming pulp into finished paper requires sophisticated machinery for forming the pulp into a continuous web from which water is removed by suctioning, pressing, and drying. The result is a large roll of finished paper.

The average distance paper travels during manufacture, from start to finish, is about 1,000 feet. Within this lengthy process, there are many variables which affect finished product quality.

AccuRay process management systems for paper machines measure and control these variables to minimize quality variations and increase production, while reducing manufacturing related costs enough to achieve system payback in one year.

AccuRay's earliest systems first appeared in paper mills in 1953, followed by the 1968 introduction of AccuRay's first digital computer control system and highlighted by the 1976 introduction of the industry's first microprocessor-based control system—the AccuRay 1180 MICRO™ system.

The 1180 MICRO goes beyond control to enhance the papermaking process. It provides operators, foremen, lab technicians and management with important decision-making information at their fingertips when they need it most.

This information can be transmitted automatically to an AccuRay Micro/Manager 8000™ production management information system.

The paper industry's greatest testimonial to the 1180 MICRO are the 517 orders received prior to fiscal year-end 1980.



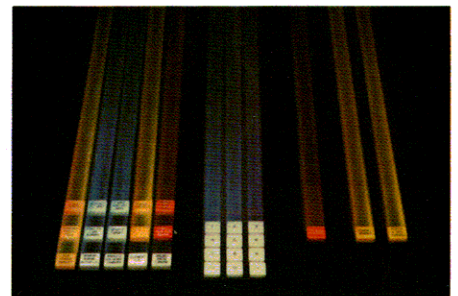
Millwide Market

Any manufacturer's profits are derived from the nature, volume and market price obtainable for its products. Determining these key guidelines requires timely, accurate and consistent information covering all operations from the board room to the production floor. Taking inherent human and equipment limitations into consideration, these tasks are far more efficiently performed by computers capable of sorting, analyzing and presenting pertinent, timely information.

AccuRay has channeled significant research and development efforts to develop and market the first production management information system for the pulp and paper industry. Today this modern information network has become a reality in the form of AccuRay's Micro/Manager 8000.

Raw material intensive industries have long awaited a computerized production management system, like Micro/Manager 8000, capable of providing current and historical production information, information that gives management a clear look at today's operations in the context of past performance and current production goals.

Micro/Manager 8000 takes full advantage of important data automatically collected by process management systems, such as AccuRay MICRO™ systems, and presents this data in concise reports tailored to management's information needs. With profit and loss information constantly at its fingertips, management can now make consistently accurate judgments to optimize the efficiency, quality, productivity and profitability of all operations.



Financial Highlights

Dollars in thousands except per share data	1980	1979	1978
Operating Revenues	\$102,910	\$ 91,658	\$ 84,415
Net Income	2,360	1,206	433
Net Income per Share	0.68	0.35	0.13
Backlog	43,500	32,600	24,040

Tobacco Market

A push to increase productivity, conserve materials, and improve cigarette quality has become a trademark of the worldwide tobacco industry. Construction of new manufacturing facilities, extensive equipment modernization programs and growth in production capabilities are anticipated to continue through the current decade.

During its 26 year relationship with the tobacco industry, AccuRay Corporation has supplied nearly 6000 control systems and gained unparalleled practical application experience. AccuRay systems presently control the manufacture of over 1/3 of the world's total cigarette production.

Introduced in 1979, the AccuRay 7000 MICRO™ system has already achieved worldwide success. At year end, 636 orders for 7000 MICRO systems had been placed by 23 customers, operating 45 manufacturing facilities in 16 countries.

The 7000 MICRO satisfies control and communication requirements for today's most advanced cigarette machines. It also has the capacity and flexibility to grow along with changing machinery and manufacturing techniques.

These systems measure and control cigarette weight, while simultaneously detecting and rejecting cigarettes that fail to meet stringent quality standards. Up-to-the-minute process and production information is displayed at each cigarette machine to guide operator correction of process faults. These summary reports enable supervisory and upper management to effectively plan production and direct overall factory operations.



Metals Market

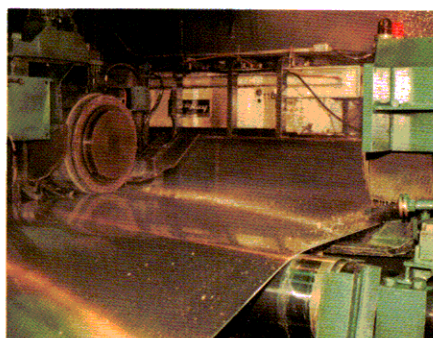
Converting ingots of steel or aluminum into cans, automobile fenders and other sheet metal products requires an intermediate rolling process.

A series of metals rolling mills convert these ingots into coils of finished metal according to customer specifications. To insure customer acceptance, rolling mills must produce a uniform sheet to an exact thickness. Even slight thickness errors will result in annual raw material waste of hundreds of thousands of dollars.

In today's metals market, it is especially important for management to utilize capital equipment exhibiting high economic returns through accurate measurement and control of sheet thickness, improved productivity, quality, energy and material usage—with a return on investment in one year or less.

During the 4th quarter of 1980 AccuRay introduced an advanced system with these capabilities, the AccuRay 5000 MICRO™. The 5000 MICRO, based upon experience gained in over 350 metals rolling installations with previous technology systems, aggressively repositions AccuRay as a total control system supplier to the metals rolling industry.

The 5000 MICRO utilizes state-of-the-art microprocessor technology to provide highly accurate, reliable measurement and automatic control. These expanded control capabilities allow AccuRay systems to control the rolling process to tighter tolerances than manually possible, resulting in increased yield, productivity, product quality and reduced raw material consumption.



Plastics Market

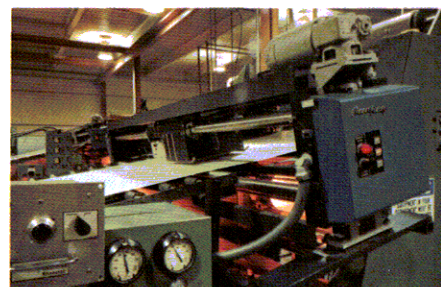
Complex multi-layer plastic products have become increasingly popular in today's marketplace. These cost-intensive products are composed of individual layers of plastic and other materials each with a specific function in the final product. If any component is not tightly controlled within specifications, the entire product is discarded as scrap. In the multi-layer product segment of the plastics industry, unlike most industries AccuRay serves, this scrap is not recyclable.

With AccuRay process management systems, individual plastic layers in the sheet can be measured and controlled. AccuRay is the only company in the world which presently provides this capability. This is one reason why there are more plastic extruders under AccuRay computer control than all competitors combined.

Additionally, 1980 marked AccuRay's entrance into the fiberglass insulation market with a newly developed measurement and control system. Previously, there was no accurate method available to measure and control weight and percentage binder of fiberglass insulation batts to precise specifications. The industry has quickly accepted the AccuRay 1180 MICRO system for its ability to achieve annual savings of \$1 million per process line.

Like all new generation AccuRay systems, the fiberglass insulation control system was introduced only after a rigorous field testing program.

With constantly increasing plastic and fiberglass raw material costs, AccuRay's growth potential in these markets is encouraging.



To Our Stockholders and Employees:



David L. Nelson
President
AccuRay Corporation

Revenues for AccuRay Corporation exceeded the \$100 million level for the first time in 1980 as total operating revenues from sales, service and leasing increased to \$102.9 million from \$91.7 million in 1979. Net income was \$2,360,000 or 68 cents per share, compared with \$1,206,000 or 35 cents per share in 1979.

In the final quarter of 1980, total operating revenues were \$27.8 million, up from \$24.7 million reported in 1979. Net income was \$688,000 or 20 cents per share, contrasted with \$447,000 or 13 cents per share a year earlier.

Backlog at year end was \$43.5 million compared with \$32.6 million at December 31, 1979. This backlog includes equipment and related commitments for services on shipments scheduled in both 1981 and 1982. New orders for equipment and initial services received in 1980 increased to \$75.3 million versus \$67.3 million in 1979.

The following is a summary of financial highlights for the fiscal year ended December 31, 1980:

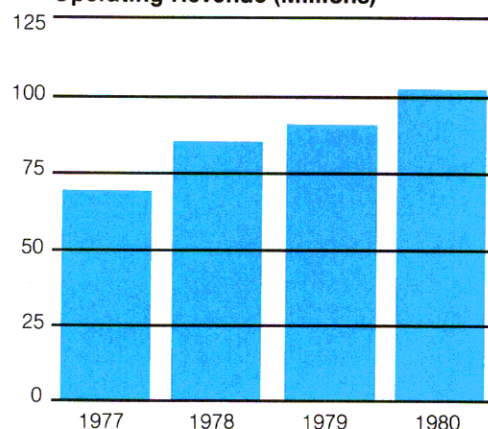
- 1980 gross profit margins on revenues remained constant with 1979. Margins for both years were 55% on sales revenues, representing primarily new equipment shipments, 28% on service and leasing revenues and 41% on total operating revenues.

- Selling, administrative and other operating expenses increased 21% to \$25.2 million against \$20.8 million in 1979.

- Research and development expenses decreased 3% to \$6.1 million versus \$6.3 million in 1979. This R & D investment represented 12.3% of sales revenues in 1980.

- Total interest expense decreased 3% to \$7.8 million, compared with \$8.0 million in 1979. This interest expense, however, was partly offset by 1980 earned financing income of \$2.0 million and a similar offset of \$3.0 million in 1979 for systems installed under long-term installment sales and lease agreements. Therefore, net interest costs increased 16% to \$5.8 million in 1980, as compared to \$5.0 million in 1979.

Operating Revenue (Millions)



- Foreign currency loss recorded was \$510,000 for the current year, against \$492,000 in 1979. This loss reflects primarily the costs of hedging transactions on overseas business which in both 1980 and 1979 were affected by wide interest rate disparities between countries, resulting in increased hedging premiums.

- Total bank debt was reduced an additional \$3.3 million in 1980 to \$34.4 million at year-end compared with \$37.7 million at December 31, 1979. The total reduction in bank debt has been \$40.0 million since 1974, when our bank debt reached its peak of \$74.4 million primarily due to internal financing of customer installment sale and lease agreements. In 1980 less than 5% of new equipment shipments required direct financing by the Company, compared with 54% in 1974.

- Total operating revenues per employee increased to \$54,100 in 1980, contrasted against \$47,700 in 1979 and \$44,100 in 1978. At year-end 1980, total employment was 1,905 compared with 1,900 in 1979 and 1,940 in 1978.

"The AccuRay Approach":

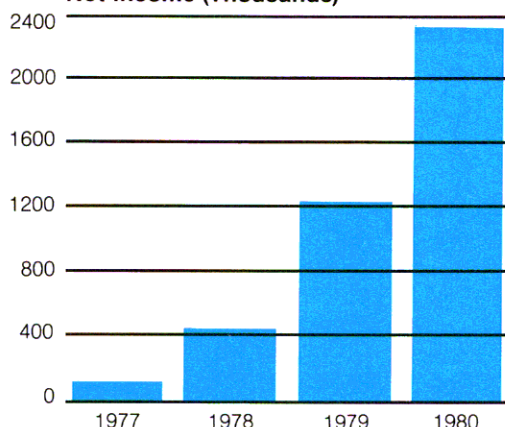
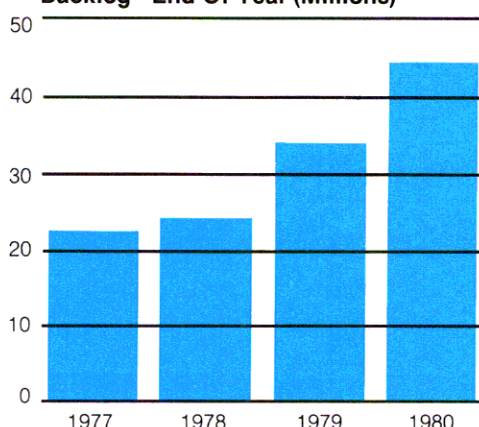
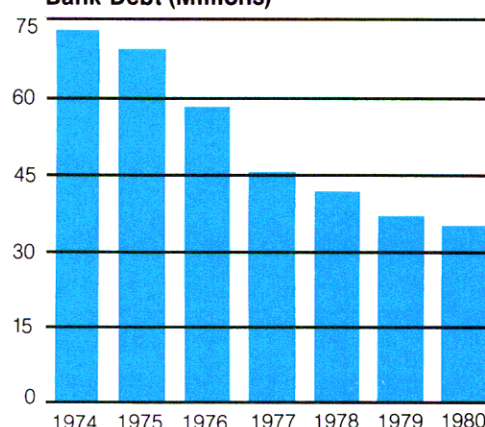
This decade's broad corporate objective for AccuRay is to create a well-managed growth company with special emphasis on quality leadership in the process automation industry. The meaning of quality leadership is amplified in the following descriptive covenants adopted by our senior management.

- "We recognize world materials and energy resources are limited and that we have the opportunity for an ever-increasing impact on their effective management.

- We are dedicated to fully understanding our customer's business so as to effectively apply our skills in achieving maximum results.

- We believe success in our business can only occur through long-term, mutually beneficial working partnerships for achieving and maintaining customer results.

- We promise to deliver products applying the most modern technology, engineered to the highest standards and manufactured to the finest quality.

Net Income (Thousands)

Backlog - End Of Year (Millions)

Bank Debt (Millions)


■ We pride ourselves as individuals and strive to maintain our reputation at the highest levels of professionalism, integrity, capability and performance.

■ We commit ourselves to total customer satisfaction, as it is the surest path to our success and future growth."

We believe that AccuRay's commitment to quality is the key to success and greater profitability in the highly sophisticated process control industry. AccuRay first initiated a new Corporate Quality Management function several years ago as part of an overall Corporate Quality Assurance Program. A Corporate Quality Steering Committee regularly reviews current quality measures and recommends additional quality assurance projects on a corporate-wide basis. It is our strong belief that these quality assurance measures will ensure greater tangible economic benefits from the utilization of our systems and services. This higher level of economic results achieved by our customers will in turn create the opportunity for improved profitability of AccuRay Corporation.

The term "well-managed growth company" encompasses the creation of annual corporate operating plans to achieve a return on stockholders' equity of 20% and a return on revenues of 10%. In assessing 1980 results, we are obviously pleased by improving profitability trends but we also recognize that the 1980 return on equity of 11.7% and return on revenues of 2.3% are well below these goals. In order to improve future profitability we must earn a more satisfactory return on the Advanced System Development Plan for a new generation of control systems in which the Company has invested \$37.6 million in research and development or 12.9% of aggregate sales revenues over the seven-year period from 1974 to 1980.

This research and development investment has resulted in a new generation of computerized process management systems based on "micro chip" microprocessor technology. These systems are designed to help particular industries save raw materials and energy,

reduce manufacturing related costs, increase productivity and improve product quality. The initial result of this commitment, a MICROtechnology system for the paper industry, has provided the foundation for an ever-expanding line of AccuRay MICRO systems for a growing list of markets.

We have also made substantial investments in our MULTICS computer, one of the world's most powerful, dedicated to the process automation industry. MULTICS, an acronym for Multiplexed Information Computing Services, made possible what we call our "software factory" and refers to the Honeywell MULTICS time-sharing host computer in Columbus. This "software factory" allows us to create and store software programs in modules that keep our system's capabilities in pace with the ever-growing demands for process management and millwide control and communications. The new generation system software includes 1,912 modular programs which were developed during the past four years.

MICROtechnology offers important advantages to our customers by addressing successfully two of the critical industry issues which emerged in the 1970's—system obsolescence and continuing maintenance cost.

■ To solve the problem of rapid system obsolescence, the new generation system hardware was greatly simplified. As new technology electronic devices become available they are incorporated into highly standardized system hardware. The expansion of new features to the installed system is provided primarily through additions in software. For example, the customer base for the AccuRay 1180 MICRO system utilized in paper and plastics reached a level of 517 systems on order as of the end of 1980. In order to add additional capability and modernization, we have already delivered a total of 625 software upgrades to this installed customer base. We believe that these system upgrades will represent an increasingly important

part of our future business. In this manner we believe that the new generation offers our customers twice the useful system life and a better return on initial investment when compared with other control systems available in the marketplace.

■ To combat the rising cost of continuing system maintenance, we have taken an industry lead in offering a control system designed to be maintained by the customer. The high level of customer involvement in routine, continuing maintenance results in a more cost-effective services program for the customer. Whereas prior equipment design discouraged such customer participation, the standardization of hardware and the availability of new software and firmware diagnostics make customer self-maintenance a practical alternative. At our training facility in Columbus, 292 customer personnel from 136 mill locations have now been trained in maintenance of our new generation equipment.

AccuRay Corporation will continue to commit resources to the development of measurement, control and information display systems utilizing state-of-the-art technologies which will expand the MICRO capabilities. This commitment, combined with long-range plans to introduce the new generation technology to all related industries, is the foundation of our overall strategy.

The forest products industry market includes the paper mill, pulp mill and now the sawmill. AccuRay MICROtechnology has been extended into the pulp mill with the AccuRay 4200 MICRO for Kamyr Digester Control, Batch Digester Control and Bleach Plant Control applications. We continue to forecast that this will be a good future market for AccuRay systems because of the fiber shortage predicted during the next economic expansion. According to industry forecasts for 1980 through 1983, for each new 1000 tons of paper and board capacity only 645 tons of

new pulp capacity will be installed in the world paper industry. Hence, the need for systems on existing pulp mills to improve pulp yields, increase production and save energy will become increasingly important.

In wood products we have completed the initial introduction of the AccuRay 6000 MICRO™ to make millwide information and control a reality in sawmills. This system includes modules for control of various machine centers within the sawmill and the ability to gather information from each of these machines to make the sawmill run more profitably through increased yield, higher productivity, reduced labor requirements and improved grade/cost structure. Our development program and introduction in wood products have been geared to thorough field testing of each module to insure introduction of a proven product. At present, 24 modules are installed in 8 sawmills. Experience to date indicates that these systems are typically providing an economic payback to the customer in less than one year.

In tobacco, the same technology has been used for the AccuRay 7000 MICRO system resulting in 636 AccuRay 7000 MICRO systems sold through 1980 for installation in 45 tobacco factories throughout the world. This powerful system meets the growing needs for computing speed, capacity and flexibility created by current industry trends toward more sophisticated high-speed machinery and factory expansions.

For aluminum and steel we released in 1980 the AccuRay 5000 MICRO to increase productivity and conserve raw materials in the metals rolling process. The system is designed for both new and existing mills, allowing for swift economic payback on initial investment. For the aluminum foil market we have completed a joint marketing agreement between AccuRay Corporation and Loewy-Robertson Engineering Company, Ltd. in the United Kingdom for a new aluminum foil rolling process control system—called VIDIFOIL—which incorporates both shape and thickness control.

All of these AccuRay MICRO systems are designed with built-in expandability to accommodate higher levels of information reporting and control. We anticipate that customers will utilize this expandability as they tie individual AccuRay unit process level systems into information and control networks providing broader visibility into production operations.

In this manner, unit process control systems now become elements in a step-by-step approach to millwide networks for communication and control called the AccuRay Micro/Manager 8000 program. This concept establishes a common data base covering the mill's entire operations, thus allowing production management to obtain complete and accurate information on all aspects of manufacturing. The result is a system providing current and comparative data which facilitates better decisions, decreased costs and increased efficiencies.

In 1980 we announced plans to build a manufacturing, engineering test and system assembly facility in Dundalk, Republic of Ireland. The new factory is scheduled for initial operation in mid-1981 and will produce the AccuRay MICROtechnology systems for the European Economic Community (EEC), other European countries, the Middle East and Africa.

With these high technology systems, a broad geographical base, current marketing momentum and a sound long-range strategy, AccuRay Corporation is confident of achieving and maintaining the distinction as a well-managed growth company and the quality leader in the process automation industry.

Sincerely,



David L. Nelson
President

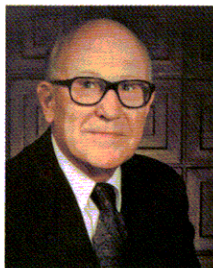
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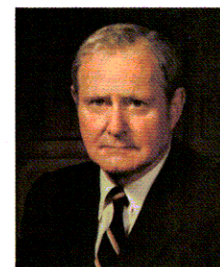
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