



AccuRay®

AccuRay® computer-based automation and management information systems are designed, manufactured and marketed by the Company for basic manufacturing processes to save raw materials and energy, increase productivity, lower costs and improve product quality. These systems are marketed in 46 countries throughout the world.

AccuRay process automation systems control manufacturing processes in the pulp and paper, rubber, plastics, textile, metals and tobacco industries and provide data links to factory level and corporate level management information and control systems. The customer base includes the following typical applications: paper and board machines, continuous and batch digesters, bleach plants, on- and off-machine coaters, metal rolling and inspection lines, calenders, extruders, treaters, heatset range finishing lines, carpet coating lines and cigarette making and packing machines.

AccuRay systems utilize the latest microprocessor and minicomputer technologies to carry out the measurement, control and data processing functions within a typical system. The heart of each system is the measurement of the basic properties of the material being manufactured, e.g., weight, moisture, opacity, ash content, coating, thickness and width. The proprietary technologies for performing these measurements employ a variety of physical and electronic principles which include nuclear, X-ray, infrared, radio frequency, microwave, optical, pneumatic and electromagnetic techniques. The processing power of AccuRay systems is distributed throughout a microprocessor-minicomputer hierarchy with the routine functions, such as sensor processing, being accomplished by microprocessors and the complex directive functions, such as optimizing control, being handled by the more flexible and powerful minicomputers.

Of the Company's total 1,940 employees, approximately a thousand are involved in research and development, manufacturing and administrative functions which are centralized in Columbus, Ohio on a 33-acre site adjacent to Ohio State University. During the past five years, an average of 12.7% of sales revenues has been invested in research and development. The Company has six sales and service divisions throughout the world with 955 personnel marketing and servicing AccuRay systems. These divisions provide systems engineering, installation and maintenance services to integrate AccuRay systems into customer businesses and to ensure continuing economic and quality results for each user.

2

Financial Highlights

Dollars in thousands except per share data

	1978	1977
Operating Revenues	\$84,415	\$71,851
Net Income	433	148
Net Income per Share	0.13	0.04
Backlog	24,040	23,160

Our business strategy to turn around the Company's operations continued to achieve its initial objectives in 1978. This strategy is based upon the concentration of corporate resources on a fewer number of selected high-growth markets for process automation in the raw materials processing industries. The plan is to introduce a new generation of control systems with microprocessor-based hardware and more powerful and flexible software in order to gain superior performance plus self-diagnostic and reliability advantages for the user when compared with competitive alternatives. Our goal is that the new generation becomes the standard of performance in these markets for the 1980's.

In developing this strategy, four years ago we restructured the Company including a divestment of all business operations which had not produced a satisfactory record of profitability. At the same time, we increased research and development spending on the internal program known as the Five-Year Advanced System Development Plan for the pulp and paper, tobacco, metals, rubber, plastics and textiles industries. The results of this program are now beginning to become evident.

In the paper machine control market—our largest, single volume market—total new orders in 1978 for equipment and initial services increased 50% over 1977. The AccuRay 1180 MICRO system is now well established in this market, as evidenced by our receipt of 141 system orders in 1978, compared with 77 in 1977. We were also pleased to note that 65 of these orders in 1978 represented repeat customer orders.

As a result of the above, the year 1978 was a period of record investment with \$5.5 million spent on research and development and an estimated additional \$1.5 million invested to train our marketing and service personnel throughout the world.

Total new orders for equipment and initial services were \$58.9 million in 1978, compared with \$52.6 million in 1977. Backlog at December 31, 1978 was \$24.0 million, compared with \$23.2 million a year earlier. This backlog includes equipment and related commitments for services to be performed within 12 months.

Total operating revenues from sales, service and leasing in 1978 were \$84.4 million, compared with \$71.9 million in 1977. Net income was \$433,000, or 13 cents per share, compared with \$148,000, or 4 cents per share for 1977.

The following is a financial summary of the fiscal year ended December 31, 1978:

- Sales were \$43.7 million, compared with \$33.6 million

in 1977. Gross profit margins on sales improved to 47.1%, compared with 42.2% a year earlier.

- Service and leasing revenues were \$40.7 million, compared with \$38.2 million in 1977. Gross profit margins on service and leasing, however, declined to 29.3% in 1978, compared with 37.7% a year earlier. The primary factors contributing to the decline were the overall inflationary cost pressures and the additional learning curve and related training costs incurred while introducing the new generation of technology into a worldwide field service organization. Also during 1978, the erosion of the dollar increased our costs of providing customer services outside the United States which reduced gross margins by approximately \$300,000.

- Selling, administrative and other operating expenses increased \$3.2 million in 1978 to \$19.1 million versus \$15.9 million in 1977. Of this increase, approximately \$700,000 reflects higher operating costs overseas because of the decline of the dollar and the remainder primarily represents inflationary cost increases.

- Interest expense in both 1978 and 1977 was \$7.3 million offset in part by approximately \$3.8 million of earned financing income recorded in 1978 and \$4.0 million in 1977 for systems installed under long-term installment sale and lease agreements.

- Total bank debt was reduced an additional \$2.0 million during 1978 for a total reduction of \$30.4 million since the peak bank debt in 1974.

- The percentage of new orders requiring direct financing by the Company was 7% of new business in 1978, compared with 58% in 1974.

- Total operating revenues per employee increased to \$44,100 in 1978, compared with \$37,800 in 1977. At year end 1978, total employment was 1,940, compared with 1,887 personnel a year earlier.

We are continuing our plan to introduce the new generation of technology into all industry markets served by the Company in carefully managed steps. After concentrating first on the paper machine control market, our next major step was to introduce the AccuRay 7000 MICRO system for the tobacco industry in late 1978. This powerful new system meets the needs for computing capacity and speed created by current industry trends toward more sophisticated high-speed machinery and factory expansions. It will also provide an attractive replacement for the 2,495 prior generation AccuRay

C-700/C-1700 systems installed in 83 cigarette factories throughout the world between 1969 and 1979. The new AccuRay 7000 MICRO system uses multiple micro-processors in a shared memory architecture to provide advanced controls, information displays, special purpose functions and flexibility for the future. The standard hardware structure is supported by advanced software with flexibility and capacity to allow the user to develop additional application packages which adapt to the continual changes in machinery, brands and processing methods.

The new generation of technology is used in metals in the AccuRay 500 MICRO product line which provides thickness measurement, automatic gauge control and data reporting modules for rolling mills and finishing lines. In 1978, we received 37 unit orders which included 8 orders from United States Steel Corporation and 6 orders from Aluminum Company of America. As a continuation of the trend noted in the last several years, 57% of these orders came from the aluminum industry.

In the rubber, plastics and textiles industries, the majority of our new business continues to come from the AccuRay 2000 product line for coating, treating and calendaring and the AccuRay 2800 product line for extrusion. Both the 2000 and 2800 now utilize the microprocessor-based Honeywell Level 6 computer.

In textiles, we successfully developed and tested in 1978 a new application package for carpet coating and laminating processing lines in the carpet industry. During 1978, we completed 3 successful customer programs with 4 carpet lines at Burlington Industries, Inc.; 3 lines at World Carpet, Inc.; and 1 line at Shaw Industries, Inc. now under computer control.

As we enter 1979, we are now much further along the classic learning curve which always exists when introducing a new generation of technology to our customers and to our own marketing and service organization. As these higher learning curve and training costs subside, we believe that the profitability from operations which has lagged expectations will continue to improve. We have the inherent advantage of utilizing an advanced computer and related software at the beginning of a new product life cycle.

Sincerely,



David L. Nelson
President

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Directors

Edward McC. Blair
Senior Partner
William Blair & Co.
(Investment Banking)

Christopher J. Campbell
Executive Vice President
Industrial Nucleonics Corporation

Gordon B. Carson
Assistant to Chancellor
Northwood Institute (College)

H. Roy Chope
Executive Vice President
Industrial Nucleonics Corporation

John Eckler
Managing Partner
Bricker & Eckler
(Attorneys at Law)

Thomas F. Jones
Vice President For Research
Massachusetts Institute of
Technology

David L. Nelson
President
Industrial Nucleonics Corporation

George F. Schlaudecker
Consultant

Robert E. Swenson
Vice President and Treasurer
Industrial Nucleonics Corporation

George B. Young
Director
Chrysler Corporation

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Vice President

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Vice President

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Vice President

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Vice President

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Richard M. McCraney
Vice President

James D. Mitchell
Vice President

Philip J. Robinson
Vice President

Thomas L. Simpson
Controller

Robert F. Zust
Assistant Treasurer

**Operating Officers of
AccuRay International**

William D. Bloebaum
Treasurer

David J. Foster
Vice President

Daniel J. Revyn
Vice President

Auditor

Arthur Andersen & Co.
Columbus, Ohio 43215

Transfer Agent

First National Bank of Chicago
Chicago, Illinois 60670

Registrar

Harris Trust and Savings Bank
Chicago, Illinois 60690

Principal Offices and Subsidiaries

Corporate Headquarters

650 Ackerman Road
Columbus, Ohio 43202

United States Offices

Northern:
P.O. Box 3327
2777 Summer Street, 6th Floor
Stamford, Connecticut 06905

Giltedge Building
4321 West College Avenue
Appleton, Wisconsin 54911

Pacific:
4800 S. W. Macadam Avenue
Suite 240
Portland, Oregon 97201

Southern:
First Southern Federal Tower
Suite 702
Mobile, Alabama 36606
Piedmont East Office Building
37 Villa Road, Suite 420
Greenville, South Carolina 29607

Leasing Company:
AccuRay Leasing Corporation
650 Ackerman Road
Columbus, Ohio 43202

Worldwide Offices

Australia:
AccuRay Australia Pty. Ltd.
Level 4, B.M.A. House
815 Pacific Highway
Chatswood 2067
New South Wales, Australia

Benelux Countries:
AccuRay International
363 Chaussee de Malines
B-1950 Kraainem/Brussels, Belgium

Brazil:
AccuRay Sistemas Limitada
Rua Beneficencia Portuguesa
24 S/411
São Paulo, Brazil

Canada:
AccuRay of Canada, Ltd.
1690 Boulevard Jules Poitras
Suite 203
Ville St. Laurent, Quebec
Canada H4N 1Z3

Finland:
AccuRay Finland Oy
Salomonkatu 17 B 6
00100 Helsinki 10
Finland

France:
AccuRay France S.A.R.L.
8, Rue Auguste-Renoir
78400 Chatou, France

Germany:
AccuRay Deutschland GmbH
52 Siegburg
Holzgasse 29-33
West Germany

Italy:
AccuRay Italia S.r.l.
Piazza Leonardo da Vinci, 1-3
16145 Genova, Italy

Japan:
AccuRay Japan Ltd.
New Kudan Building
No. 7, 3-Chome Kanda-Jimbocho
Chiyoda-ku
Tokyo, Japan

Mexico:
AccuRay Mexico S.A. de C.V.
Avenida de las Palmas 731-704
7º Piso
Lomas de Chapultepec
Mexico, 10, D.F.

New Zealand:
AccuRay Australia Pty. Ltd.
Suite 2A
40 Eruera Street
P.O. Box 1643
Rotorua, New Zealand

South Africa:
AccuRay S.A. (Pty.) Ltd.
113 Old Main Road
P.O. Box 808
Pinetown 3600 (Durban)
Republic of South Africa

Spain:
AccuRay España
C/Milanesado 21-23
Barcelona 17, Spain

Sweden:
AccuRay Scandinavia A.B.
Bergshojden 32
Box 7102
17207 Sundbyberg, Sweden

United Kingdom:
AccuRay (U.K.) Limited
Langwood House
63-81 High Street
Rickmansworth (London)
Hertfordshire WD3 1EQ, England

AccuRay (U.K.) Limited
Andrew House, 26 Mellor Road
Cheadle Hulme
Cheadle, Cheshire SK 8 5AU
England