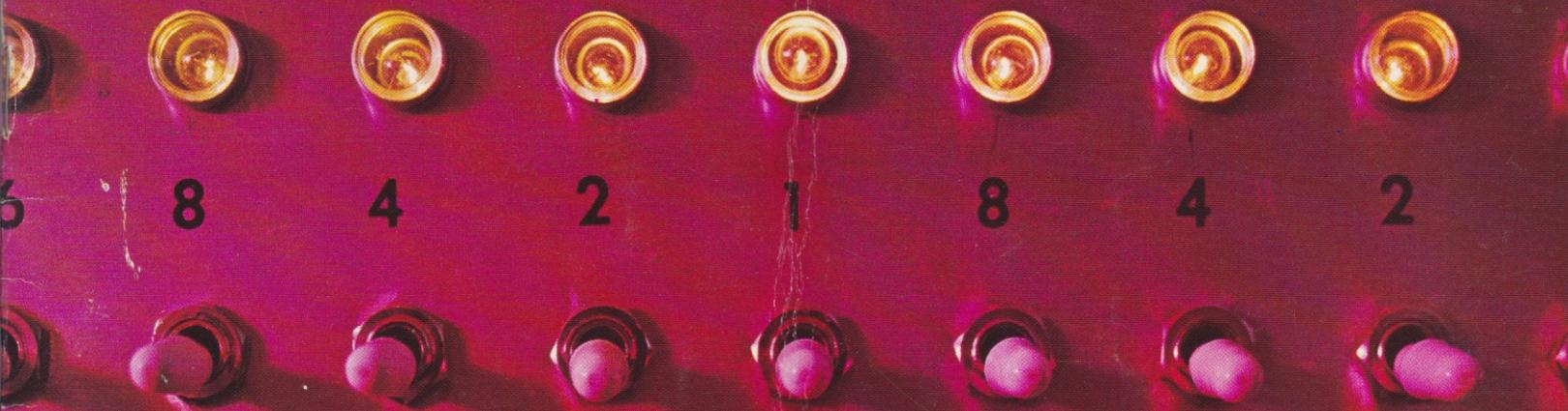


WORD

BYTE



Annual Report 1970

DATA CHECK



ECC CHECK

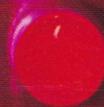
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UNCORRECTED

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1115

## To our Shareholders

In our second year of operation, Advanced Memory Systems implemented a planned growth pattern that enabled us to achieve our forecasted goals in product development, manufacturing and marketing. As a result we were able to secure the necessary competitive advantages that have established AMS as a major force in the semiconductor memory industry.

During 1970 we introduced an impressive array of memory products, expanded our manufacturing facilities, augmented our sales offices with a growing network of manufacturing representatives, concluded an international marketing agreement which provides sales representation in London, Munich, Tokyo, Geneva and Stockholm, and established a direct sales force for our end-user products.

Reaching these objectives required a level of expenditures in accordance with our growth projections. Today AMS offers products that span the entire price/performance spectrum of the semiconductor memory market. We employ both of the major technologies—bipolar and MOS—used in the fabrication of integrated circuits, and we enjoy the flexibility of being able to satisfy customers requirements for memory at any level—from integrated circuit devices, to modular memory subsystems, to stand-alone memory systems.

The proven ability of AMS to design, produce and sell advanced memory systems has coincided with an increasing recognition that semiconductor memories will substantially increase their share of the memory market and will ultimately replace magnetic cores for storage. The recent IBM announcement of medium and small computers with semiconductor main memory has demonstrated the certainty of our basic assumption that semiconductors will become the dominant memory medium in the computer industry.

AMS has, in just two years, acquired an acknowledged leadership position in a complex industry that has explosive growth potential. We produce the world's fastest computer memories. These memories are three times faster than any other memory available, and two major computer manufacturers are already committed to their use in computers currently being designed.

We were the first to develop and introduce a semiconductor memory that is competitive with core memory both in price and performance. Customer acceptance of this product for main computer memory provides further evidence that the changeover from core memory to semiconductor memory is occurring at a rate more rapid than that forecasted by industry spokesmen as recently as one year ago.

*Cover: Portion of the diagnostic panel of the Semiconductor Storage Unit. Left: Basic memory modules superimposed on the SSU. (See Page 6)*

In 1970, AMS introduced the largest semiconductor memory in the world, the Semiconductor Storage Unit, designated the SSU. Orders from several major companies have enabled us to schedule 1971 deliveries of a number of these units. These commitments demonstrate acceptance of this new concept in peripheral storage with a product that is unique to AMS. Deliveries of the SSU will have a substantial impact on our sales volume and will further enhance our stature in the industry.

In mid-December we announced receipt of a multi-million dollar contract from Intel Corporation, a major lessor of computers and peripheral equipment. Deliveries on this long-term contract will commence in June 1971.

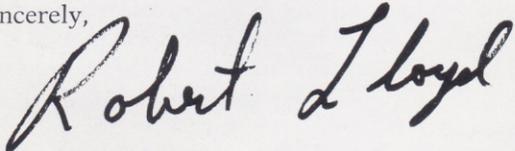
Another marketing milestone was the conclusion of an agreement with Motorola whereby this highly respected company will establish a second source manufacturing capability to produce the AMS 1024-bit MOS integrated circuit memory. The agreement follows an extensive review of our products and engineering capabilities and reflects the confidence of Motorola in our design approach. It will, we feel, assure acceptance of this AMS memory as an industry standard.

To augment our marketing efforts and to sustain our activities in the data processing industry at every level, we are pleased to announce the staffing of a new function within the company: a direct sales force to market our end-user products. We have appointed Gordon W. Ringoen as director of end-user marketing with responsibilities for the SSU and other peripheral products. Mr. Ringoen has extensive experience in computer market development and sales.

Our progress to date is due to the dedication of a loyal and talented staff. Our people are committed to excellence. Their expertise encompasses all facets of semiconductor memory and advanced systems design.

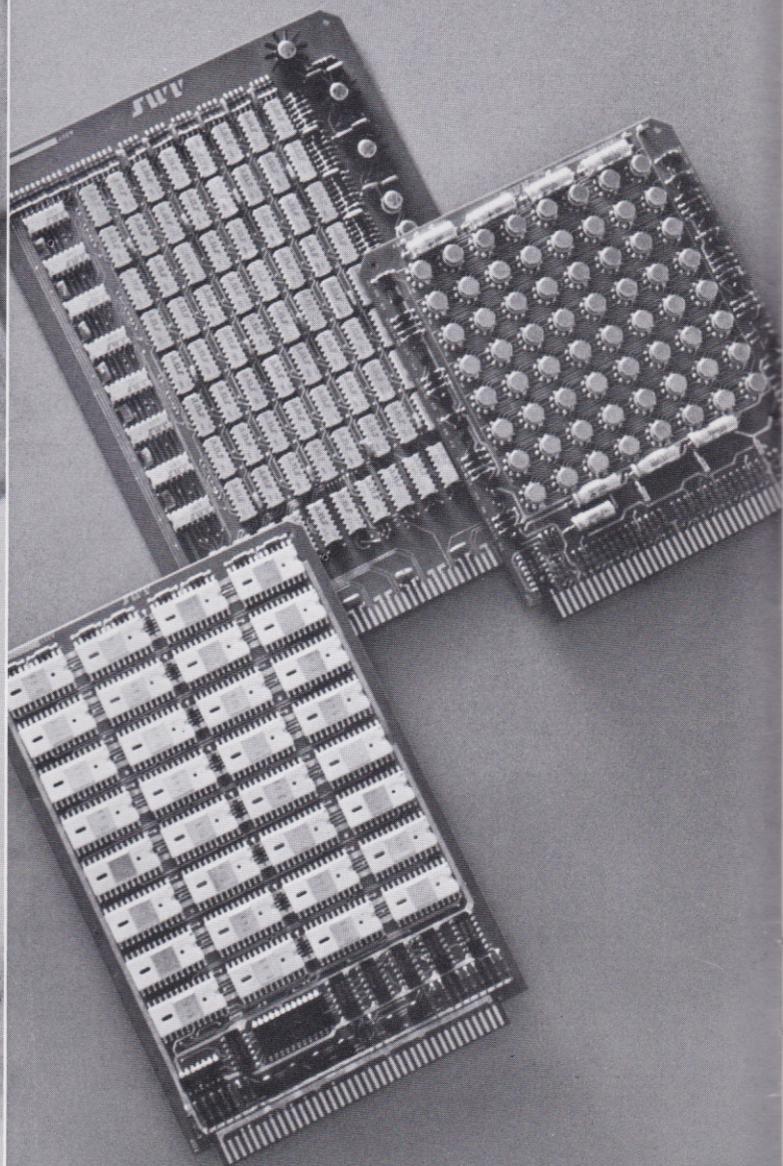
We are exceeding original product development goals and expect to secure an even more dominant position in the memory segment of the multi-billion dollar data processing industry. Your management is pledged to take full advantage of our current momentum. We are confident of our ability to maintain our position of leadership.

Sincerely,

A handwritten signature in black ink that reads "Robert H. F. Lloyd". The signature is written in a cursive, flowing style with a large initial 'R'.

Robert H. F. Lloyd, President.





**I**ndustry projections indicate that the growth rate characterizing the computer market in the 1960's will continue into the decade ahead and that semiconductors will become the dominant memory medium of the computer industry, displacing ferrite core memories in most applications.

This is because of the production economies inherent in the manufacture of semiconductors. Fabrication of semiconductors is a batch process whereas core memory is assembled bit by bit. Consequently, semiconductor memory manufacturers can realize dramatic cost savings through volume production which are denied to core memory by its very nature. A user confronted with cost of core memory weighed against the high speed and economy of semiconductors has no choice but to adopt the monolithic device.

Products and services are dependent on the people who make them possible, and our staff is one of the finest and largest professional groups devoted to semiconductor memory in the electronics industry. We have in-house capabilities ranging from design and production of semiconductors to development and manufacture of stand-alone memory systems.

This vertical integration places AMS™ in an enviable position to take maximum advantage of the vast market potential of semiconductor memories. A brief report on our product line provides impressive facts on our leadership place in this growth industry.

### **Ultra-High-Speed Memories**

AMS builds the world's fastest memories. Operating at speeds that are at least three times faster than anything else available, they have significant potential for main memories in the next generation of super-computers. In addition, they are ideal for use as control and buffers in medium-size computers.

Current applications are in communication systems, telephone exchanges and as special-purpose memories for both small and large computing systems.

Ultra-high speeds are achieved through a combination of sophisticated bipolar manufacturing processing and computerized design techniques.

In this product area, AMS has announced and delivered components, subsystems and full-powered systems, and two of the major computer manufacturers have designed our high-speed memories into their new computers.

**"...with IBM, the largest in the business announcing its commitment (to semiconductor memory), there will be an acceleration of the use of semiconductor memories by other computer houses. This should up the market to the boom everybody has been talking about..."**

**Electronic News 10/5/70**

## The SSU™

The AMS Semiconductor Storage Unit is a totally new concept in computer peripherals. It is a stand-alone storage system which allows existing computer system users to achieve greater processor utilization. Because it is completely compatible to any IBM System/360 or System/370, it can be attached without any hardware or software change.

The SSU fills the performance and price gap that has existed between main memory and high-speed drums or disks. Its primary application area is as a storage location for high-usage auxiliary requirements which normally would be in main memory, but because of high core prices, are relegated to much slower drums and disks.

Constructed with the lowest cost form of semiconductor memory — metal-oxide-semiconductor large-scale integrated circuit shift registers, the SSU solves the central processor "wait state" problem.

The market potential for the SSU over the next four years is vast. Because we have no competition at this time, AMS is in a position to capture a significant portion of this market. Of major importance is the fact that the unit is directly attachable to IBM's new System/370. The higher processing speeds of the 370 make the characteristics of the SSU even more valuable than when used with System/360.

Because of its speed, capacity and all solid-state construction, the SSU far outstrips existing electro-mechanical devices in performance and reliability and yields substantial improvements in throughput at competitive prices.

## SSU/m

The SSU/m, a smaller version of the SSU, provides the user with the same performance as the SSU, but in a modular configuration with reduced capacity. It can serve many storage needs for I/O buffering, subsystem storage, real time inputs, CRT display refresh, small system storage hierarchies and high-speed search functions.

The SSU/m requires no warm-up, has no moving parts, and provides 100% memory storage with no record gaps. Because it's price competitive with drum memories, the SSU/m has special appeal to manufacturers of mini-computers.

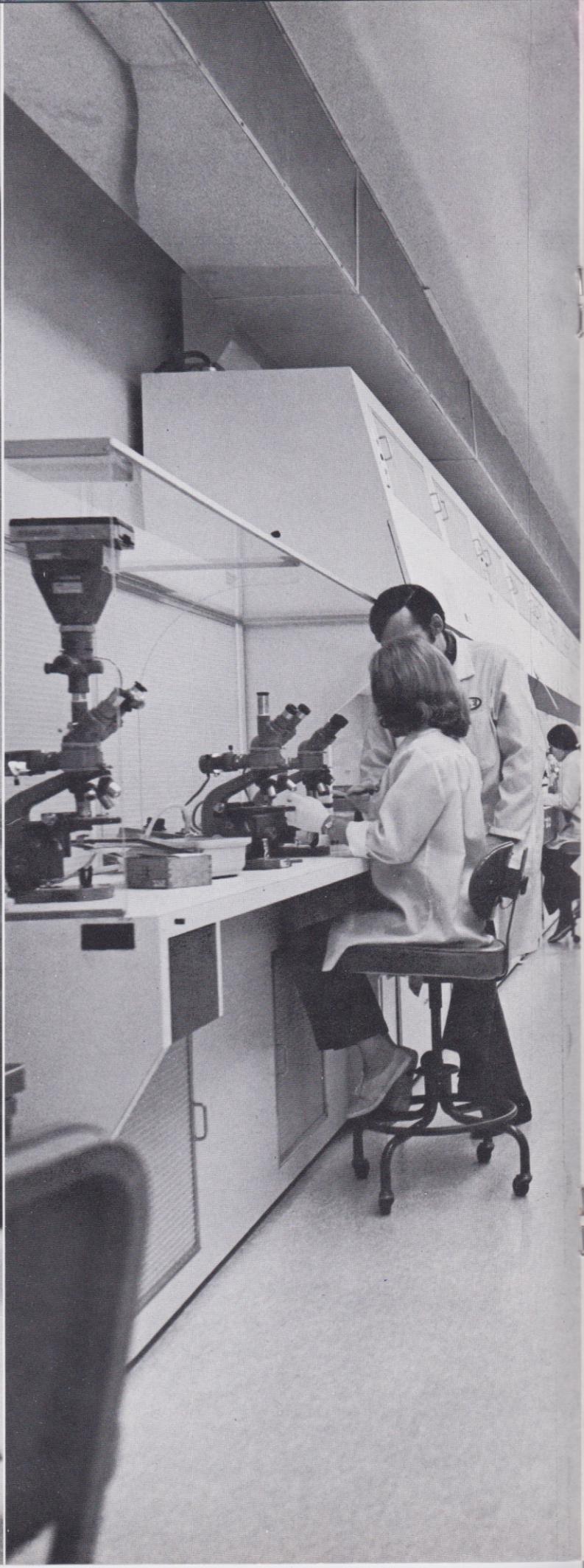
The SSU/m is compact, fast, economical and dependable. As a new and exciting concept in computer systems design, AMS anticipates a bright sales future for the SSU/m in the rapidly expanding mini-computer and peripheral equipment market.

*"...the small modularity  
of semiconductors can  
greatly increase the  
throughput of a well-  
designed system...."*

Electronic Design 7/19/70

*Right: Examining  
one of the memory  
sections of an SSU  
installation.*





## Core-Competitive Memory Components and Systems

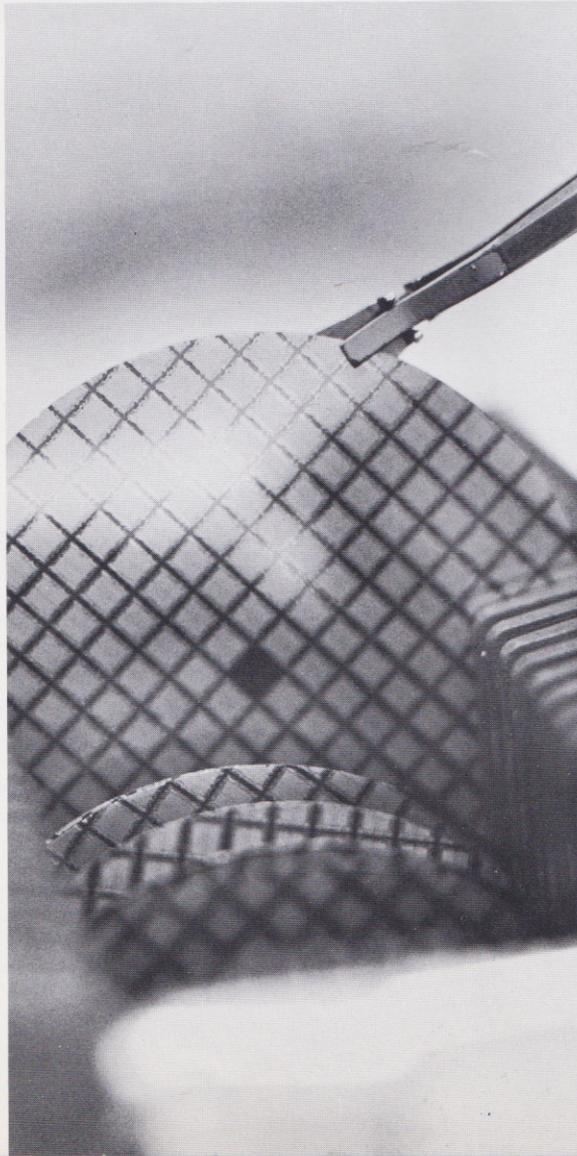
The main frame memory market represents the largest potential market for MOS devices. Currently, the market is dominated by magnetic cores. Core-competitive semiconductor memories were thought to be several years away from realization as 1970 began. Early in the year, however, AMS announced the availability of a MOS read/write memory at a core-competitive price.

With the introduction of this product, AMS again demonstrated its leadership in the development of semiconductor memories.

Compared to cores, it offers a combination of low cost, reliability, modularity, small size and ease of application that will make core memory obsolete.

This product is also being sold as full systems both to original equipment manufacturers and end-users as an attachment to installed computers.

*Below: Each square on this wafer contains more than 3,600 transistors and will store 1,024 bits of information in an area measuring 1/10 by 1/10 inch.*



**"Obviously the new technology (LSI memory systems) represents bad news for makers of ferrite cores, which have been the basic stuff of computer memory systems...."**

**Barron's 10/5/70**

**"...in renouncing core in a major system (new System 370/Model 145) observers believe IBM has set in motion an early shift by other computer manufacturers to semiconductor memories...."**

**Electronic News 10/5/70**

## **Directors**

Robert H. F. Lloyd

*President,  
Advanced Memory Systems, Inc.*

Orest J. Bedrij

*President, Bedrij Securities Corp.,  
Poughkeepsie, New York*

Dr. Sidney Fernbach

*Head of the Computation Department,  
Lawrence Radiation Laboratory,  
Livermore, California*

Sol Kershner

*Vice President,  
Advanced Memory Systems, Inc.*

Harry Wasiele, Jr.

*President, Brand-Rex Company,  
part of Akzona, Inc.,  
Willimantic, Connecticut*

## **Officers**

Robert H. F. Lloyd

*President*

Andrew Berding

*Vice President, Engineering*

L. Brent Dickson

*Vice President, Manufacturing*

Charles Fa

*Vice President, Technology*

Sol Kershner

*Vice President,  
Finance and Administration*

Jerome D. Larkin

*Vice President, Marketing*

Fred A. Ordemann, Jr.

*Vice President, Systems*

## **Transfer Agent and Registrar**

Chase Manhattan Bank

(National Association)

*New York, New York*

## **Council**

Cooley, Crowley, Gaither, Codward

Castro & Huddleson

*San Francisco, California*

## **Auditor**

Arthur Young & Co.

*San Jose, California*



## Report of Certified Public Accountants

The Board of Directors and Stockholders  
Advanced Memory Systems, Inc.

We have examined the accompanying balance sheet of Advanced Memory Systems, Inc. at September 30, 1970, and the related statements of operations and stockholders' equity and the statement of source and disposition of working capital for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

As explained in Note 1 the Company was in the development stage from October 25, 1968 (date of incorporation) through September 30, 1969, and accordingly its costs incurred during that period were deferred. In addition, the Company operated at a loss during its last fiscal year and anticipates operating at a loss for at least a portion of the coming fiscal year. Recovery of the carrying value of its preoperating costs and inventory is dependent upon the ability of the Company to achieve profitable operations.

In our opinion, subject to the outcome of the matters described in the preceding paragraph, the statements mentioned above present fairly the financial position of Advanced Memory Systems, Inc. at September 30, 1970, the results of its operations and the source and disposition of its working capital for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding period except for the change in accounting for research and development costs as described in Note 1.

ARTHUR YOUNG & COMPANY

November 7, 1970  
San Jose, California

# Balance Sheet September 30, 1970 and 1969

Assets	1970	1969
<b>Current Assets</b>		
Cash	\$ 94,766	\$ 105,294
Time certificates of deposit and marketable securities, at cost (which approximates market) plus accrued interest	749,653	3,182,793
Trade accounts receivable, less allowance for doubtful accounts of \$2,000 in 1970	143,519	—
Inventories, at lower of average cost or market:		
Raw materials and supplies	76,085	42,888
Work in process	172,308	34,094
	<u>248,393</u>	<u>76,982</u>
Prepaid expenses	22,176	5,349
Total current assets	<u>1,258,507</u>	<u>3,370,418</u>
Note receivable—due after one year	—	6,225
Machinery, equipment and leasehold improvements, at cost (Note 6):		
Demonstration equipment	95,216	—
Machinery, equipment and furniture	19,333	16,646
Leasehold improvements	113,928	51,333
	<u>228,477</u>	<u>67,979</u>
Less accumulated depreciation	27,472	2,887
Net machinery, equipment and leasehold improvements	<u>201,005</u>	<u>65,092</u>
Deposits—lease and other (Note 3)	331,094	68,625
Deferred financing costs, less amortization of \$7,304 in 1970 and \$3,320 in 1969	20,586	24,570
Organization expense, at cost less amortization	2,700	3,600
Unrecovered preoperating costs, less amortization of \$191,800 in 1970 (Note 1)	383,703	575,503
	<u>\$2,197,595</u>	<u>\$4,114,033</u>
<b>Liabilities and Stockholders' Equity</b>		
<b>Current Liabilities</b>		
Accounts payable	\$ 172,319	\$ 180,085
Accrued liabilities	31,095	32,465
Installment note payable—due within one year	1,200	1,200
Total current liabilities	<u>204,614</u>	<u>213,750</u>
Installment note payable—due after one year	3,100	4,300
6½% convertible notes payable (Note 2)	500,000	500,000
Commitments (Notes 3 and 4)	—	—
<b>Stockholders' Equity</b>		
Capital stock, \$.10 par value, 1,600,000 shares authorized (of which 254,655 shares are reserved for issuance), 867,095 shares issued (844,755 shares in 1969) (Notes 2 and 5)	86,710	84,476
Capital in excess of par value	3,315,807	3,315,807
Accumulated deficit	(1,908,336)	—
	<u>1,494,181</u>	<u>3,400,283</u>
Less cost of 33,000 shares in treasury	4,300	4,300
Total stockholders' equity	<u>1,489,881</u>	<u>3,395,983</u>
	<u>\$2,197,595</u>	<u>\$4,114,033</u>

See accompanying notes.

# Statement of Operations (Note 1)

Year ended September 30, 1970

<b>Revenues</b>	
Net sales	\$ 465,967
Interest (net of expense of \$32,755)	137,008
	<u>602,975</u>
<b>Costs and expenses</b>	
Cost of goods sold	912,176
Research and development (Note 1)	623,846
Selling	325,918
General and administrative	452,687
Amortization (including amortization of preoperating cost — Note 1)	196,684
	<u>2,511,311</u>
Net loss	<u><u>\$(1,908,336)</u></u>
Net loss per weighted average shares of common stock outstanding	<u><u>\$(2.24)</u></u>

## Statement of Stockholders' Equity

Year ended September 30, 1970	Capital Stock	Capital in Excess of Par Value	Accumulated Deficit	Treasury Stock	Total Stockholders' Equity
<b>Balances October 1, 1969</b>	\$84,476	\$3,315,807	\$ —	\$(4,300)	\$ 3,395,983
Exercise of employee stock options (22,340 shares) (Note 5)	2,234	—	—	—	2,234
<b>Net loss</b>	—	—	(1,908,336)	—	(1,908,336)
<b>Balances, September 30, 1970</b>	<u>\$86,710</u>	<u>\$3,315,807</u>	<u>\$(1,908,336)</u>	<u>\$(4,300)</u>	<u>\$ 1,489,881</u>

See accompanying notes.

# Statement of Source and Disposition of Working Capital

Periods ended September 30, 1970 and 1969	Year Ended September 30, 1970	From October 25, 1968 (Date of Incorporation) to September 30, 1969
<b>Source of Working Capital</b>		
Sale of capital stock .....	\$ 2,234	\$3,400,283
Less note receivable received in connection therewith .....	—	(6,000)
Less cost of shares held in treasury .....	—	(4,300)
	<u>2,234</u>	<u>3,389,983</u>
Proceeds of loan, less financing costs of \$27,890 (Note 2) .....	—	472,110
Increase (decrease) in long-term debt .....	(1,200)	4,300
	<u>1,034</u>	<u>3,866,393</u>
<b>Disposition of Working Capital</b>		
Unrecovered preoperating costs (Note 1) .....	—	575,503
Net loss from operations .....	1,908,336	—
Less charges not requiring the disbursement of funds:		
Depreciation .....	(24,585)	(2,887)
Amortization (Note 1) .....	(196,684)	(4,120)
	<u>1,687,067</u>	<u>568,496</u>
Increase (decrease) in long-term note receivable .....	(6,225)	225
Additions to machinery, equipment and leasehold improvements .....	160,498	67,979
Additions to deposits (Note 3) .....	262,469	68,625
Organization expense .....	—	4,400
	<u>2,103,809</u>	<u>709,725</u>
<b>Increase (Decrease) in Working Capital</b> .....	<u><u>\$ (2,102,775)</u></u>	<u><u>\$3,156,668</u></u>

See accompanying notes.

# Notes to Financial Statements

September 30, 1970

## 1. Preoperating Costs

The Company was in the development stage from October 25, 1968 (date of incorporation) to September 30, 1969. During that period all preoperating costs (including research and development) were deferred. The composition of these costs is as follows:

Salaries	\$289,339
Raw materials and supplies	112,665
Travel and personnel recruitment	86,134
Payroll taxes and benefits	20,922
Space and equipment rent	29,154
Taxes, insurance, legal and other	83,568
Depreciation and amortization	7,007
Interest income, net	(19,192)
	609,597
Less work in process inventory	34,094
Balance, September 30, 1969	575,503
1970 Amortization	191,800
Balance, September 30, 1970	<u>\$383,703</u>

As of September 30, 1969, the Company had developed what it considered to be a saleable product and moved from a preoperating to an operating status. Commencing October 1, 1969, the Company began amortizing its preoperating costs on the basis of sales over the following three years, with at least one-third to be amortized in any single year.

During the current year, the Company changed its method of accounting for research and development costs from deferring such costs to expensing them as incurred. Costs incurred in the prior period are included in deferred preoperating costs and are being amortized as described above.

For income tax purposes the Company has consistently deducted preoperating and research and development costs in the year incurred and at September 30, 1970, has net operating loss carry forwards of approximately \$2,300,000 of which \$583,000 expires in fiscal 1974 and the balance expires in fiscal 1975.

## 2. 6½% Convertible Notes Payable

In December of 1968 the Company issued 6½% convertible notes in the principal amount of \$500,000 due December 10, 1975, with interest payable semi-annually in June and December. The notes are subject to prepayment by the Company at any time on or after December 10, 1970, by payment of principal and interest to the date of call. Each note (principal amount—\$25,000) is convertible at any time prior to maturity into 4,687½ shares of capital stock. The Company has reserved for issuance 93,750 shares of its capital stock for conversion of these convertible notes.

## 3. Lease Commitments

The Company has leased office and manufacturing space for the ten years ending December 31, 1978, with an option to renew for an additional five years. Lease rentals for the above described facilities will be approximately \$54,000 annually through December 31, 1978 (\$32,000 annually through 1983).

The Company has also secured a commitment to lease production and test equipment and office furniture having a cost of up to \$799,500. Leasing costs will vary from approximately \$190 to \$290 annually per thousand dollars of value of equipment leased. The leasing cost varies with the life of the equipment and the term of the leases. At September 30, 1970, equipment valued at \$768,298 had been leased at an approximate annual rental of \$129,000. The lessor has required a \$383,000 security deposit refundable in increments after the Company has achieved certain milestones. In October 1970, deposits totaling \$62,000 were refunded and are included in current assets in the accompanying balance sheet.

## 4. Employment Contracts

The Company has entered into five year employment agreements with six of its officers, four of whom are also principal stockholders, providing for annual salaries aggregating approximately \$143,000.

## 5. Stock Option Plan

On December 3, 1968, the Board of Directors adopted a qualified stock option plan (amended June 16, 1969) under which options for a total of 212,000 shares may be granted to key employees. The option price must be at least 100% of the fair market value on the date of the grant. Options may run for a maximum term of five years from the date of grant. Options may not be exercised to the extent of more than 40% of the shares covered thereby in each of the first two years.

The following table summarizes data concerning employee stock options for the year ended September 30, 1970:

	Options Outstanding			Aggregate Value
	Unissued Options	Number of Shares	Price Per Share	
Balance at beginning of year				
	43,200	140,045	\$.10 - \$11.00	\$146,559
Options granted	(29,500)	29,500	10.75 - 34.88	388,413
Options exercised	—	(22,340)	.10	(2,234)
Options cancelled	2,530	(2,530)	.10 - 9.75	(9,903)
Balance at end of year	<u>16,230</u>	<u>144,675</u>		<u>\$522,835</u>
Options exercisable at September 30, 1970		<u>33,820</u>	<u>\$.10 - \$11.00</u>	<u>\$ 44,539</u>

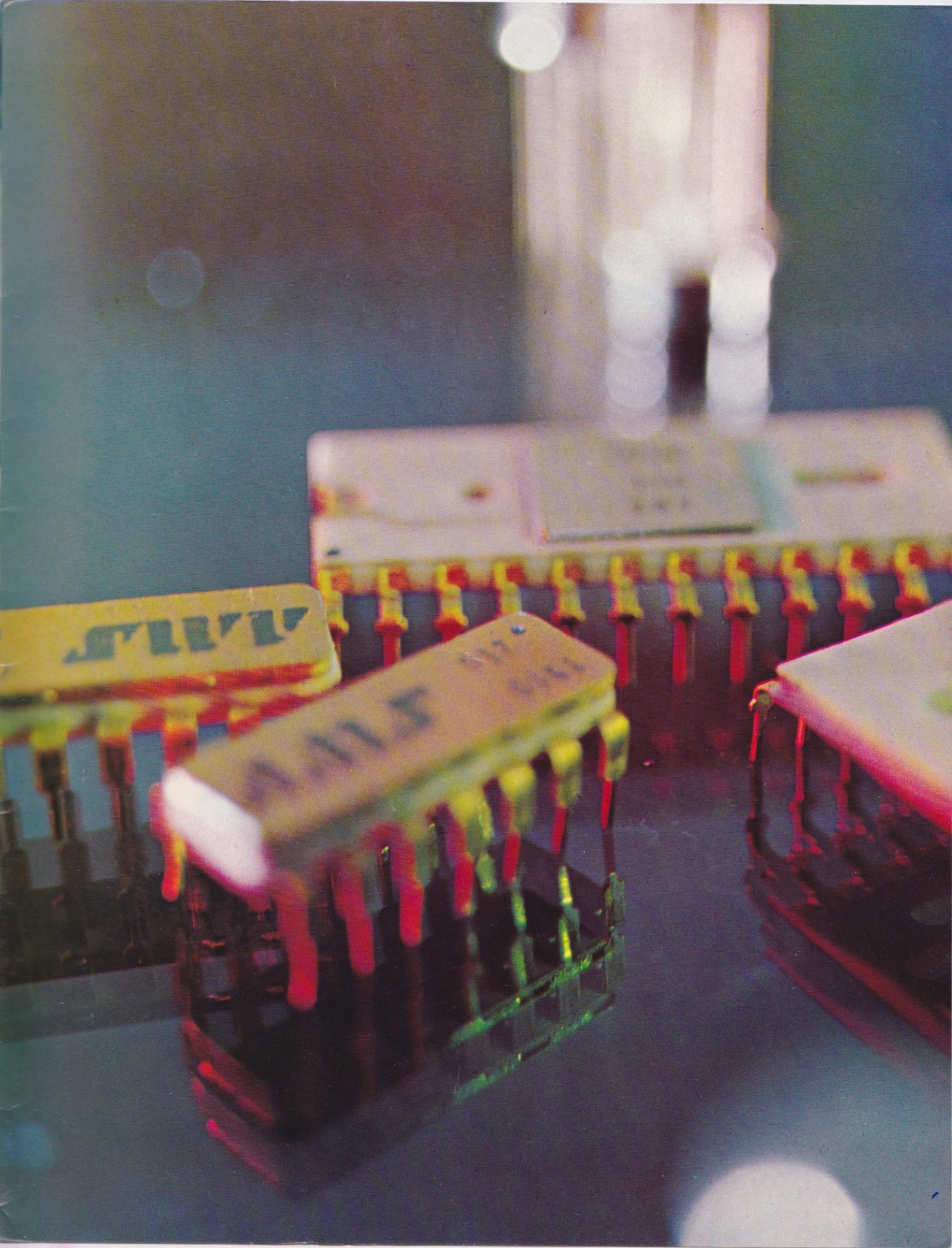
These options, which are common stock equivalents are not dilutive and therefore, were not considered in the loss per share computation.

## 6. Depreciation and Amortization

Depreciation of \$24,585 charged to operations during the current year was computed using the straight-line method over the following useful lives:

Description	Rate or Useful Lives
Demonstration equipment	2 years
Machinery, equipment, and furniture	5 years
Leasehold improvements	5-10 years

Several AMS memory components, including the world's fastest memory and the world's first core-competitive MOS memory.





**Advanced Memory Systems, Inc., 1276 Hammerwood Ave., Sunnyvale, California 94086**