SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarter ended September 30, 2000 Commission File Number 0-23599

MERCURY COMPUTER SYSTEMS, INC.
(Exact name of registrant as specified in its charter)

MASSACHUSETTS	04-2741391
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

199 RIVERNECK ROAD CHELMSFORD, MA	01824
(Address of principal executive offices)	(Zip Code)

978-256-1300
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15 (d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

YES X NO

Number of shares outstanding of the issuer's classes of common stock as of October 31, 2000:

Class	Number of Shares Outstanding
Common Stock, par value $.01 per share	21,487,117

Total number of pages 14

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PART I. FINANCIAL INFORMATION

ITEM 1. CONSOLIDATED FINANCIAL STATEMENTS

MERCURY COMPUTER SYSTEMS, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except share data)

	September 30, 2000 (Unaudited)	June 30, 2000
ASSETS		
Current assets:		
Cash and cash equivalents	$ 10,755	$ 5,850
Marketable securities	33,434	36,784
Trade accounts receivable, net of allowances of $307 and $308 at September 30, 2000 and June 30, 2000, respectively	26,776	25,046
Inventory	17,838	15,975
Deferred income taxes, net	1,909	1,909
Income tax receivable	--	722
Prepaid expenses and other current assets	3,727	3,496
Total current assets	94,439	89,782
Marketable securities	28,286	25,705
Property and equipment, net	28,606	27,574
Deferred income taxes, net	787	787
Other assets	339	369
Total assets	$ 152,457	$ 144,217
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 6,159	$ 9,231
Accrued expenses	3,980	2,486
Accrued compensation	5,154	6,143
Capital lease - short term	553	580
Notes payable - short term	577	577
Billings in excess of revenues and customer advances	3,810	2,788
Income taxes payable	2,588	--
Total current liabilities	22,821	21,805
Commitments and contingencies	--	--
Capital lease - long term	322	447
Notes payable - long term	13,464	13,605
Stockholders' equity:		
Common stock, $.01 par value: 40,000,000 shares authorized; 21,425,437 and 21,395,137 shares issued and outstanding at September 30, 2000 and June 30, 2000, respectively	214	214
Additional paid-in capital	34,698	34,446
Retained earnings	80,950	73,841
Accumulated other comprehensive income	(12)	(141)
Total stockholders' equity	115,850	108,360
Total liabilities and stockholders' equity	$ 152,457	$ 144,217

The accompanying notes are an integral part of the consolidated financial statements.

MERCURY COMPUTER SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited and in thousands except per share data)

	Three months ended September 30, 2000	Three months ended September 30, 1999
Net revenue	$ 41,469	$ 37,863
Cost of revenue	13,124	10,037
Gross profit	28,345	27,826
Operating expenses:		
Selling, general and administrative	12,123	9,105
Research and development	6,743	5,537
Total operating expenses	18,866	14,642
Income from operations	9,479	13,184
Interest income	928	322
Interest expense	(275)	(18)
Equity loss in joint venture	(1,235)	(515)
Gain on sale of division, net	1,600	--
Other expenses	(43)	(16)
Income before income taxes	10,454	12,957
Provision for income taxes	3,345	4,665
Net income	$ 7,109	$ 8,292
Net income per share:		
Basic	$ 0.33	$ 0.40
Diluted	$ 0.31	$ 0.37
Weighted average shares outstanding:		
Basic	21,405	20,688
Diluted	22,747	22,166

The accompanying notes are an integral part of the consolidated financial statements

MERCURY COMPUTER SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited and in thousands)

	Three Months Ended September 30, 2000	1999
Cash flows provided from operating activities:		
Net income	$ 7,109	$ 8,292
Adjustments to reconcile net income to net cash Provided by (used in) operating activities:		
Depreciation and amortization	1,408	1,257
Gain on sale of division, net	(1,600)	--
Provision for inventory write-downs	1,378	1,247
Equity loss in joint venture	1,235	515
Changes in assets and liabilities:		
Trade accounts receivable	(1,739)	4,671
Inventory	(3,273)	(2,117)
Prepaid expenses and other current assets	(479)	408
Other assets	(971)	41
Accounts payable	(3,069)	(2,510)
Accrued expenses and compensation	520	126
Billings in excess of revenues and customer advances	1,048	(2,011)
Income taxes payable	3,315	4,334
Net cash provided by operating activities	4,882	14,253
Cash flows from investing activities:		
Purchase of marketable securities	(20,388)	(17,482)
Sale of marketable securities	21,236	11,263
Purchases of property and equipment	(2,448)	(755)
Proceeds from sale of division net of selling costs	1,600	--
Investment in joint venture	--	(2,500)
Net cash used in investing activities	--	(9,474)
Cash flows from financing activities:		
Proceeds from employee stock purchase plan and the exercise of stock options	252	344
Payments of debt	(141)	--
Principal payments under capital lease obligations	(152)	(110)
Net cash (used in) provided by financing activities	(41)	234
Net increase in cash and cash equivalents	4,841	5,013
Effect of exchange rate change on cash and cash equivalents	64	70
Cash and cash equivalents at beginning of period	5,850	3,676
Cash and cash equivalents at end of period	$ 10,755	$ 8,759
Cash paid during the period for:		
Interest	$ 275	$ 19
Income taxes	631	265

The accompanying notes are an integral part of the consolidated financial statements.

MERCURY COMPUTER SYSTEMS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(TABLES IN THOUSANDS EXCEPT PER SHARE DATA)

A. BASIS OF PRESENTATION

These consolidated financial statements should be read in conjunction with the Company's financial statements and footnotes included in the Company's Form 10-K, filed with the Securities and Exchange Commission. In the opinion of management, the accompanying unaudited financial statements include all adjustments, consisting of normal recurring adjustments, necessary to present fairly the consolidated financial position, results of operations and cash flows of Mercury Computer Systems, Inc.

B. INVENTORY

	September 30, 2000	June 30, 2000
Raw materials	$ 7,138	$ 4,252
Work in process	5,801	7,415
Finished goods	4,899	4,308
Total	$17,838	$15,975

C. NET INCOME PER COMMON SHARE

The following table sets forth the computation of basic and diluted net income per common share:

	Three Months Ended September 30, 2000	Three Months Ended September 30, 1999
Net income	$ 7,109	$ 8,292
Shares used in computation:		
Weighted average common shares outstanding used in computation of basic net income per share	21,405	20,688
Dilutive effect of stock options	1,342	1,478
Shares used in computation of diluted net income per share	22,747	22,166
Basic net income per share	$ 0.33	$ 0.40
Dilutive net income per share	$ 0.31	$ 0.37

Options to purchase 350,293 and 25,587 shares of common stock outstanding during the three months ended September 30, 2000 and 1999, respectively, were not included in the calculation of diluted net income per common share because the option price was greater than the average market price of the common shares during the period.

D. NEW ACCOUNTING PRONOUNCEMENTS

In June 1999, the Financial Accounting Standards Board issued SFAS No. 137, "Accounting for Derivative Instruments and Hedging Activities - Deferral of the Effective Date of FASB Statement No. 133." SFAS No. 137 amends SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities" which was issued in June 1998. SFAS No. 137 defers the effective date of SFAS No. 133 to the first quarter of fiscal years beginning after June 15, 2000. SFAS No. 133 requires that all derivative instruments be recorded on the balance sheet at their fair value. Changes in the fair value of derivatives are recorded each period in either current earnings or accumulated other comprehensive income, depending on whether a derivative is designated as part of a hedge transaction and the type of hedge transaction. The adoption of SFAS No. 133 did not have a material impact on the Company's financial position or results of operations.

MERCURY COMPUTER SYSTEMS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS, CONTINUED
(TABLES IN THOUSANDS EXCEPT PER SHARE DATA)

In December 1999, the Securities and Exchange Commission ("SEC") issued Staff Accounting Bulletin No. 101 ("SAB 101"), "Revenue Recognition in Financial Statements". SAB 101 summarizes the staff's view in applying generally accepted accounting principles to selected revenue recognition issues. The application of the guidance in SAB 101 will be required in the Company's fourth quarter of fiscal year 2001. The effects of applying this guidance will be reported as a cumulative effect adjustment resulting from a change in accounting principle. The Company has not completed its evaluation of SAB101 and therefore is unable to determine its impact.

In March 2000, the Financial Accounting Standard Board issued FASB Interpretation No. 44, "Accounting for Certain Transactions Involving Stock Compensation - an interpretation of APB Opinion No. 25" ("FIN 44"). FIN 44 clarifies the application of APB Opinion No. 25 and among other issues clarifies the following: the definition of an employee for purposes of applying APB Opinion No. 25; the criteria for determining whether a plan qualifies as a noncompensatory plan; the accounting consequence of various modifications to the terms of previously fixed stock options or awards; and the accounting for an exchange of stock compensation awards in a business combination. FIN 44 is effective July 1, 2000, but certain conclusions in FIN 44 cover specific events that occurred after either December 15, 1998 or January 12, 2000. The application of FIN 44 did not have a material impact on the Company's financial position or results of operations.

E. COMPREHENSIVE INCOME

Mercury's total comprehensive income was as follows:

	Three Months Ended September 30, 2000	1999
Net income	$7,109	$8,292
Other comprehensive income, net of tax:		
Foreign currency translation adjustments	(27)	88
Unrealized gain or (loss) on securities	15	(12)
Other comprehensive income	(12)	76
Total comprehensive income	$7,097	$8,368

F. OPERATING SEGMENT AND GEOGRAPHIC INFORMATION

During the three month period ended September 30, 2000, the Company had six principal operating segments: North American defense, international defense, medical imaging, commercial businesses, wireless communications, and research and development. These operating segments were determined based upon the nature of the products offered to customers, the market characteristics of each operating segment, and the Company's management structure. The Company has five reportable segments: North American defense segment, medical imaging segment, commercial segment, other defense and commercial segment, and research and development segment. The other commercial segment is comprised of international defense, wireless communications, and other commercial businesses unrelated to the defense or medical businesses. A new commercial operating segment was established during the first quarter of fiscal 2000. Previously, most commercial businesses were included with the North American and international operating segments. Historical information was not restated to reflect this business reorganization because it is impractical to obtain the necessary information.

The accounting policies of the business segments are the same as those described in "Note B: Summary of Significant Accounting Policies" in the Company's Annual Report on Form 10-K for the year ended June 30, 2000. The following table provides operating segment information for the three-month periods ended September 30, 2000 and 1999:

	North American Defense Segment	Medical Imaging Segment	Commercial Segment	Other Commercial Segment	Research and Development Segment	Corporate	Consolidated
THREE MONTHS ENDED SEPTEMBER 30, 2000:							
Sales to unaffiliated customers	27,729	8,878	3,335	1,527	--	--	41,469
Income (loss) before taxes(1)	18,396	2,713	1,666	(26)	(6,743)	(5,552)	10,454
Depreciation/amort. expense	187	9	2	66	378	766	1,408
THREE MONTHS ENDED SEPTEMBER 30, 1999:							
Sales to unaffiliated customers	30,253	4,961	--	2,649	--	--	37,863
Income (loss) before taxes(1)	21,939	2,018	--	(150)	(5,225)	(5,625)	12,957
Depreciation/amort. expense	34	11	--	55	272	885	1,257

(1) Interest income, interest expense and foreign exchange gain/(loss) are reported in Corporate and not allocated to the principal operating segments. Only expenses directly related to an operating segment were charged to the appropriate operating segment. All other expenses for marketing and administrative support activities that could not be specifically identified with a principal operating segment were allocated to Corporate.

G. EQUITY LOSS IN JOINT VENTURE

In September, 1999, the Company formed AgileVision as a joint venture with Sarnoff Corporation, the developer of color television and a pioneer in the creation of digital television ("DTV"). AgileVision provides broadcasters and cable providers equipment to optimize their DTV investment and develop new broadband media commerce revenue streams, including master control systems that permit broadcasters to perform multiple functions on a single platform that previously would have required the engineering and integration of numerous discrete products and systems. As of September 30, 2000, the Company's investment in AgileVision amounted to $4,500,000. During the three month periods ended September 30, 2000 and 1999, the Company recognized $1,235,000 and $515,000, respectively, in expenses related to the operation of Agilevision. The Company has funded the losses of Agilevision to date and as of September 30, 2000, intends to continue to fund this venture.

Summarized Income Statements for AgileVision during the periods ended September 30, 2000 and 1999 are as follows:

	Three Months Ended September 30, 2000	1999
Expenses	$1,235	$ 515
Loss from continuing operations	1,235	$ 515
Net loss	$1,235	$ 515

Summarized Statements of Financial Position of AgileVision:

	September 30, 2000	June 30, 2000
Current assets	$ 511	$ 1,009
Non-current assets	20	12
Total assets	531	1,021
Current liabilities	3,599	2,744
Shareholders' equity	(3,068)	(1,723)
Total liabilities and equity	$ 531	$ 1,021

ITEM 2. MANAGEMENT DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

CERTAIN FACTORS THAT MAY AFFECT FUTURE RESULTS

From time to time, information provided by the Company, statements made by its employees or information included in its filings with the Securities and Exchange Commission may contain statements which are not historical facts but which are "forward-looking statements" which involve risks and uncertainties. The words "may," "will," "expect," "anticipate," "continue", "estimate", "project," "intend" and similar expressions are intended to identify forward-looking statements regarding events, conditions and financial trends that may affect the Company's future plans of operations, business strategy, results of operations and financial position. These statements are based on the Company's current expectations and estimates as to prospective events and circumstances about which there can be no firm assurances given. Further, any forward-looking statement speaks only as of the date on which such statement is made, and the Company undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement is made. As it is not possible to predict every new factor that may emerge, forward-looking statements should not be relied upon as a prediction of actual future financial condition or results. Important factors that may cause the Company's actual results to differ from forward-looking statements are referenced in the Company's Form 10-K filed with the Securities and Exchange Commission.

RESULTS OF OPERATIONS :

REVENUES

The Company's total revenues increased 10% from $37.9 million during the three months ended September 30, 1999 to $41.5 million during the three months ended September 30, 2000.

Defense electronics revenues decreased 4% from $30.6 million or 81% of total revenues during the three months ended September 30, 1999 to $29.2 million or 71% of total revenues during the three months ended September 30, 2000. The decline in defense revenues was due to the delay in fulfilling customer orders for the deliver of next- generation technology.

Medical imaging revenues increased 80% from $5.0 million or 13% of total revenues during the three months ended September 30, 1999 to $8.9 million or 21% of total revenues during the three months ended September 30, 2000. The increase in medical imaging revenues reflects the ramp-up to production volume of product for our customer's computed tomography ("CT") imaging systems.

Other revenues increased 43% from $2.3 million or 6% of total revenues during the three months ended September 30, 1999 to $3.4 million or 8% of total revenues during the three months ended September 30, 2000. The increase in other revenues was due primarily to the addition of a new commercial customer.

COST OF REVENUES

Cost of revenues increased 31% from $10.0 million during the three months ended September 30,1999 to $13.1 million during the three months ended September 30, 2000. As a percent of total revenues, cost of revenues increased from 26.5% during the three month period ended September 30, 1999 to 31.6% for the three months ended September 30, 2000. This increase in cost as a percentage of revenue was primarily due to an increase in the Company's inventory reserves.

SELLING, GENERAL AND ADMINISTRATIVE

Selling, general, and administrative expenses increased 33% from $9.1 million during the three months ended September 30, 1999 to $12.1 million during the three months ended September 30, 2000. The increase was primarily due to expenses associated with the implementation of a new financial, manufacturing, and administrative computer system. Additionally, commissions associated with higher sales volume and the ongoing development of the Company's sales and management infrastructure to support the Company's growth contributed to the increased expenses.

RESEARCH AND DEVELOPMENT

Research and development expenses increased 22% from $5.5 million during the three months ended September 30, 1999 to $6.7 million during the three months ended September 30, 2000. The increase in research and development expenses was due primarily to the hiring of additional software and hardware engineers to develop and enhance the features and functionality of the Company's products and the introduction of new products in response to a high demand for next generation products. Even with the increase in research and development expenses as compared with a year ago, expenses are running somewhat lower than management's expectations due to the delay in certain prototyping activities. Management anticipates that in the near term, research and development expenses will increase somewhat as certain projects enter into the prototyping phase.

INCOME FROM OPERATIONS

Income from operations decreased 28% from $13.2 million during the three months ended September 30, 1999 to $9.5 million during the three months ended September 30, 2000. This decrease is associated with lower gross margins coupled with increased operating expenses.

Included in income from operations during the three months ended September 30, 1999 were $372,000 in hardware and software revenues and approximately $921,000 in direct expenses related to the shared storage business (the "SSBU"). The direct expenses include expenses from marketing and engineering activities, primarily related to compensation, trade shows, prototype development and direct costs related to the sale of the product, including certain hardware costs. The SSBU was sold during January, 2000 and therefore, the company did not record any income from this business unit during the three months ended September 30, 2000.

EQUITY LOSS IN JOINT VENTURE

In September, 1999, the Company formed AgileVision as a joint venture with Sarnoff Corporation, the developer of color television and a pioneer in the creation of digital television ("DTV"). AgileVision provides broadcasters and cable providers equipment to optimize their DTV investment and develop new broadband media commerce revenue streams, including master control systems that permit broadcasters to perform multiple functions on a single platform that previously would have required the engineering and integration of numerous discrete products and systems. The Company's contribution to AgileVision was $4.5 million. During the three month periods ended September 30, 1999 and 2000 the Company recognized $515,000 and $1,235,000, respectively in expenses related to the operation of AgileVision.

PROVISION FOR INCOME TAX

The Company recorded a tax provision of $3.3 million during the three months ended September 30, 2000 reflecting a 32% tax rate as compared to a $4.7 million tax provision during the three months ended September 30, 1999, reflecting a 36% tax rate. The decrease in the tax rate was due primarily to the expiration of the research and experimentation tax credit last year. Congress reinstated the tax credit during fiscal 2000 thus, favorably affecting the Company's current tax rate.

LIQUIDITY AND CAPITAL RESOURCES

As of September 30, 2000, the Company had cash and marketable investments of approximately $72.5 million. During the three months ended September 30, 2000, the Company generated approximately $4.9 million in cash from operations compared to $14.3 million generated during the three months ended September 30, 1999. This decrease in cash generated from operations was primarily due to decreased profitability. Days sales outstanding was 58 days at September 30, 2000 and 1999.

During the three months ended September 30, 2000, the Company's investing activities use of cash netted to $0. During the period, investing activities consisted of $2.4 million for the purchase of computers, furniture and equipment. These cash outflows were partially offset by the net sale of $848,000 in securities and the receipt of $1.6 million net of selling costs from the sale of a division. During the three months ended September 30, 1999, the Company's investing activities used cash of $9.5 million, which consisted of $6.2 million for the purchase of marketable securities (net of sales), $2.5 million for the investment in a joint venture, and $755,000 for the purchase of computers, furniture equipment and leasehold improvements.

During the three months ended September 30, 2000 and 1999, the Company's financing activities used approximately $41,000 and provided approximately $234,000, respectively. These financing activities consisted primarily of inflows from the exercise of stock options and proceeds received from the employee stock purchase plan, offset by outflows from payment under capital lease obligations and debt.

Management believes that the Company's available cash, cash generated from operations, will be sufficient to provide for the Company's working capital and capital expenditure requirements for the foreseeable future. If the Company acquires one or more businesses or products, the Company's capital requirements could increase substantially. In the event of such an acquisition or in the event that any unanticipated circumstances arise which significantly increase the Company's capital requirements, there can be no assurance that necessary additional capital will be available on terms acceptable to the Company, if at all.

ITEM 3 Quantitative and Qualitative Disclosures about Market Risk

INTEREST RATE RISK MANAGEMENT

There were no material changes in the Company's exposure to market risk from June 30, 2000.

PART II. OTHER INFORMATION

ITEM 2. Use of Proceeds from Registered Securities:

None

ITEM 4. Submission of Matters to a Vote of Security Holders

None

ITEM 6. Exhibits and Reports Filed on Form 8-K

(a) Exhibits.

Financial Data Schedule filed as attached in exhibit 27.1.

(b) Reports on Form 8-K.

None

MERCURY COMPUTER SYSTEMS, INC.
SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

MERCURY COMPUTER SYSTEMS, INC.

Date: November 14, 2000

By: /S/ G. MEAD WYMAN

G. Mead Wyman
Senior Vice President, Chief
Financial Officer and Treasurer
(Principal Financial and
Accounting Officer)

5
U.S. DOLLARS

3-MOS
JUN-30-2001
JUL-01-2000
SEP-30-2000
1
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