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, 2001 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, 2001:

Class	Number of Shares Outstanding
Common Stock, par value $.01 per share	21,967,337

MERCURY COMPUTER SYSTEMS, INC.

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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, 2001 (Unaudited)	June 30, 2001
ASSETS		
Current assets:		
Cash and cash equivalents	$ 11,567	$ 13,307
Marketable securities	67,837	54,135
Trade accounts receivable, net of allowances of $799 and $600 at September 30, 2001 and June 30, 2001, respectively	25,841	34,928
Inventory	12,503	12,840
Deferred income taxes, net	3,206	3,206
Prepaid expenses and other current assets	6,589	5,341
Total current assets	127,543	123,757
Marketable securities	20,903	28,166
Property and equipment, net	28,629	28,793
Deferred income taxes, net	2,207	2,207
Other assets	763	661
Total assets	$180,045	$183,584
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 3,023	$ 6,638
Accrued expenses	3,525	4,263
Accrued compensation	5,402	7,427
Capital lease - short term	227	292
Notes payable - short term	621	621
Billings in excess of revenues and customer advances	986	1,060
Income taxes payable	154	2,065
Total current liabilities	13,938	22,366
Commitments and contingencies	--	--
Deferred compensation - long term	384	337
Capital lease - long term	64	108
Notes payable - long term	12,834	12,985
Stockholders' equity:		
Common stock, $.01 par value: 40,000,000 shares authorized; 21,898,677 and 21,811,738 shares issued and outstanding at September 30, 2001 and June 30, 2001, respectively	219	218
Additional paid-in capital	43,288	42,575
Retained earnings	108,530	104,525
Accumulated other comprehensive income	788	470
Total stockholders' equity	152,825	147,788
Total liabilities and stockholders' equity	$180,045	$183,584

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, 2001	Three months ended September 30, 2000
Net revenue	$ 34,861	$ 41,469
Cost of revenue	10,882	13,124
Gross profit	23,979	28,345
Operating expenses:		
Selling, general and administrative	11,950	12,123
Research and development	7,855	6,743
Total operating expenses	19,805	18,866
Income from operations	4,174	9,479
Interest income	1,179	928
Interest expense	(171)	(275)
Equity loss in joint venture	(880)	(1,235)
Gain on sale of division, net	1,600	1,600
Other expenses	(12)	(43)
Income before income taxes	5,890	10,454
Provision for income taxes	1,885	3,345
Net income	$ 4,005	$ 7,109
Net income per share:		
Basic	$ 0.18	$ 0.33
Diluted	$ 0.17	$ 0.31
Weighted average shares outstanding:		
Basic	21,863	21,405
Diluted	23,229	22,747

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, 2001	Three Months Ended September 30, 2000
Cash flows from operating activities:		
Net income	$ 4,005	$ 7,109
Adjustments to reconcile net income to net cash Provided by (used in) operating activities:		
Depreciation and amortization	1,643	1,408
Gain on sale of division, net	(1,600)	(1,600)
Equity loss in joint venture	880	1,235
Provision for doubtful accounts	200	--
Stock compensation expense	64	10
Changes in assets and liabilities:		
Trade accounts receivable	8,949	(1,739)
Inventory	341	(1,895)
Prepaid expenses and other current assets	343	(479)
Other assets	189	(971)
Accounts payable	(3,620)	(3,069)
Accrued expenses and compensation	(2,566)	520
Deferred compensation - long term	47	--
Billings in excess of revenues and customer advances	(84)	1,048
Income taxes payable	(1,585)	3,315
Net cash provided by operating activities	7,206	4,892
Cash flows from investing activities:		
Purchase of marketable securities	(17,340)	(20,388)
Sale of marketable securities	11,174	21,236
Purchases of property and equipment	(1,451)	(2,448)
Proceeds from sale of division net of selling costs	--	1,600
Investment in joint venture	(1,000)	--
Net cash used in investing activities	(8,617)	--
Cash flows from financing activities:		
Proceeds from employee stock purchase plan and the exercise of stock options	1	242
Payments of debt	(151)	(141)
Principal payments under capital lease obligations	(109)	(152)
Net cash used by financing activities	(259)	(51)
Net decrease in cash and cash equivalents	(1,670)	4,841
Effect of exchange rate change on cash and cash equivalents	(70)	64
Cash and cash equivalents at beginning of period	13,307	5,850
Cash and cash equivalents at end of period	$ 11,567	$ 10,755
Cash paid during the period for:		
Interest	$ 171	$ 275
Income taxes	3,470	631

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, 2001	June 30, 2001
Raw materials	$ 7,033	$ 6,109
Work in process	2,542	4,301
Finished goods	2,928	2,430
Total	$12,503	$12,840

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, 2001	Three Months Ended September 30, 2000
Net income	$ 4,005	$ 7,109
Shares used in computation:		
Weighted average common shares outstanding used in computation of basic net income per share	21,863	21,405
Dilutive effect of stock options	1,366	1,342
Shares used in computation of diluted net income per share	23,229	22,747
Basic net income per share	$ 0.18	$ 0.33
Dilutive net income per share	$ 0.17	$ 0.31

Options to purchase 413,307 and 350,293 shares of common stock outstanding during the three months ended September 30, 2001 and 2000 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.

(TABLES IN THOUSANDS EXCEPT PER SHARE DATA)

D. RECENT ACCOUNTING PRONOUNCEMENTS

In July 2001, the FASB issued SFAS No. 141, "Business Combinations" and SFAS No. 142, "Goodwill and Other Intangible Assets." SFAS No. 141 requires that all business combinations be accounted for under the purchase method only and that certain acquired intangible assets in a business combination be recognized as assets apart from goodwill. SFAS No. 142 requires that ratable amortization of goodwill be replaced with periodic tests of the goodwill's impairment and that intangible assets other than goodwill be amortized over their useful lives. SFAS No. 141 is effective for all business combinations initiated after June 30, 2001 and for all business combinations accounted for by the purchase method for which the date of acquisition is after June 30, 2001. The provisions of SFAS No. 142 are required to be adopted for fiscal years beginning after December 15, 2001, however, the Company has, as permitted, adopted SFAS No. 142 early, as of July 1, 2001. The adoption of SFAS No. 142 had no impact on the Company's financial position or results of operations.

In August 2001, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards No. 143 ("SFAS 143"), "Accounting for Obligations Associated with the Retirement of Long-Lived Assets." SFAS 143 provides the accounting requirements for retirement obligations associated with tangible long-lived assets. SFAS 143 is effective for financial statements for fiscal years beginning after June 15, 2002. Management is currently assessing but has not yet determined the impact, if any, of SFAS 143 on its financial position and results of operations.

In October 2001, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards No. 144 ("SFAS 144"), "Accounting for the Impairment or Disposal of Long-Lived Assets." SFAS 144 requires one method of accounting for long-lived assets disposed of by sale. SFAS 144 is effective for financial statements issued for fiscal years beginning after December 15, 2001. Management is currently assessing but has not yet determined the impact, if any, of SFAS 144 on its financial position and results of operations.

E. COMPREHENSIVE INCOME

Mercury's total comprehensive income was as follows:

	Three Months Ended September 30, 2001	Three Months Ended September 30, 2000
Net income	$ 4,005	$ 7,109
Other comprehensive income, net of tax:		
Foreign currency translation adjustments	31	(27)
Unrealized gain on securities	185	15
Other comprehensive income / (loss)	216	(12)
Total comprehensive income	$ 4,221	$ 7,097

F. OPERATING SEGMENT AND GEOGRAPHIC INFORMATION

The Company adopted SFAS No. 131 "Disclosures about Segments of an Enterprise and Related Information" (Statement No. 131), in fiscal 1999. This Statement supersedes SFAS No. 14 "Financial Reporting for Segments of a Business Enterprise," but retains the requirement to report information about major customers. This statement establishes standards for reporting information about operating segments in annual financial statements and requires selected information about operating segments in interim financial reports issued to stockholders. It also establishes standards for related disclosures about products and services and geographic areas.

Operating segments are defined as components of an enterprise evaluated regularly by the Company's senior management in deciding how to allocate resources and in assessing performance. The Company has six principal operating segments: North American Defense, Medical Imaging, Commercial, International Defense and Commercial, 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, Medical Imaging segment, Commercial segment, Other Defense and Commercial segment, and Research and Development segment. The Other Defense and Commercial segment is comprised of International Defense, Wireless Communications, and Other Commercial businesses unrelated to the defense or medical businesses. These operating segments are not separately reported, as they do not meet any of Statement No. 131's quantitative thresholds. A new commercial operating segment was established during the first quarter of fiscal 2000. Previously, most commercial businesses were included within 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, 2001. The following table provides operating segment information for the three-month periods ended September 30, 2001 and 2000:

	North American Defense Segment	Medical Imaging Segment	Commercial Segment	Other Defense and Commercial Segment	Research and Development Segment	Corporate	Consolidated
THREE MONTHS ENDED SEPTEMBER 30, 2001:							
Sales to unaffiliated customers	$17,543	$ 9,928	$ 3,004	$ 4,386	--	--	$34,861
Income (loss) before taxes(1)	11,513	4,344	999	290	(6,594)	(4,662)	5,890
Depreciation/amort. expense	74	32	10	101	475	951	1,643
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

(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 are charged to the appropriate operating segment. All other expenses for marketing and administrative support activities that cannot be specifically identified with a principal operating segment are allocated to Corporate.

(2) The North American Defense and the Other Defense and Commercial segments differ in definition from the defense market segment described in the Company's management discussion and analysis ("MD&A"). The Defense market segment in the MD&A refers to the worldwide defense market. The North American Defense and the Other Defense and Commercial are operating segments as defined by Statement No. 131, and are subsets of the worldwide defense market discussed in the MD&A.

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 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. During the three months ended September 30, 2001, the Company invested $1.0 million in AgileVision. During the three months ended September 30, 2001 and 2000 the Company recognized $880,000 and $1,235,000, respectively, in expenses related to the operation of AgileVision. The Company has funded the losses of AgileVision to date and as of September 30, 2001, intends to continue to fund this venture.

Summarized Income Statements for AgileVision during the periods ended September 30, 2001 and 2000 are as follows:

	Three Months Ended September 30, 2001	2000
Expenses	$1,033	$1,235
Loss from continuing operations	1,033	$1,235
Net loss	$1,033	$1,235

Summarized Statements of Financial Position of AgileVision:

	September 30, 2001	June 30, 2001
Current assets	$ 725	$ 471
Non-current assets	33	37
Total assets	758	508
Current liabilities	8,149	6,864
Shareholders' equity	(7,391)	(6,356)
Total liabilities and equity	$ 758	$ 508

H. LEGAL PROCEEDINGS

In July 1999, a former employee brought a wrongful termination action against the Company and certain officers of the Company. The plaintiff seeks severance pay, the right to purchase 60,000 shares of the Company's common stock at a price of $2.00 per share, the right to exercise 96,000 stock options at an exercise price of $2.00 per share, and other financial consideration. Binding arbitration has commenced but no ruling has been decided. The position of the Company's management after consultation with external counsel, is that a loss from this action is not probable. Accordingly, no loss accrual has been recorded. If the plaintiff were to prevail on its claims, depending on the price of the Company's common stock, a judgement for a material amount could be awarded against the Company. The Company has objected to the claims and is aggressively defending the matter.

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 decreased 16% from $41.5 million during the three months ended September 30, 2000 to $34.9 million during the three months ended September 30, 2001.

Defense electronics revenues decreased 26% from $29.2 million or 71% of total revenues during the three months ended September 30, 2000 to $21.6 million or 62% of total revenues during the three months ended September 30, 2001. The decline in defense revenues was primarily due to program delays due to lengthy defense strategic planning effort of the new Presidential administration.

Medical imaging revenues increased 11% from $8.9 million or 21% of total revenues during the three months ended September 30, 2000 to $9.9 million or 28% of total revenues during the three months ended September 30, 2001. Medical imaging revenues increased in the digital cardiology business, but were partially offset by reductions in revenues from the Company's maturing computed tomography ("CT") imaging systems.

Other commercial revenues remained constant at $3.4 million during the three months ended September 30, 2000 and 2001. However, as a percentage of total revenue other commercial revenues increased from 8% of total revenue during the three months ended September 30, 2000 to 10% of total revenue during the three months ended September 30, 2001.

COST OF REVENUES

Cost of revenues decreased 17% from $13.1 million during the three months ended September 30, 2000 to $10.9 million during the three months ended September 30, 2001. As a percent of total revenues, cost of revenues declined slightly from 31.6% during the three month period ended September 30, 2000 to 31.2% for the three months ended September 30, 2001. This decrease in cost as a percentage of revenue was primarily due to a decrease in the material cost for certain key components, and lower costs associated with completing a program associated with re-establishing certain discontinued standard parts, both partially offset by lower total revenue.

SELLING, GENERAL AND ADMINISTRATIVE

Selling, general, and administrative expenses decreased 1% from $12.1 million during the three months ended September 30, 2000 to $12.0 million during the three months ended September 30, 2001. The decrease was primarily due to lower expenses associated with the implementation of a new financial, manufacturing, and administrative computer system. This decrease was partially offset by the ongoing development of the Company's sales and management infrastructure to support the Company's growth.

RESEARCH AND DEVELOPMENT

Research and development expenses increased 17% from $6.7 million during the three months ended September 30, 2000 to $7.9 million during the three months ended September 30, 2001. 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 development of new products. Even with the increase in research and development expenses as compared with a year ago, expenses are running 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 as certain projects enter into the prototyping phase.

INCOME FROM OPERATIONS

Income from operations decreased 56% from $9.5 million during the three months ended September 30, 2000 to $4.2 million during the three months ended September 30, 2001. This decrease is primarily due to lower total revenue.

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. During the three month periods ended September 30, 2000 and 2001, the Company invested $1.0 million and $1.0 million, respectively. During the three month periods ended September 30, 2000 and 2001 the Company recognized $1,235,000 and $880,000, respectively in expenses related to the operation of AgileVision.

PROVISION FOR INCOME TAX

The Company recorded a tax provision of $1.9 million during the three months ended September 30, 2001 reflecting a 32% tax rate as compared to a $3.3 million tax provision during the three months ended September 30, 2000, reflecting a 32% tax rate.

LIQUIDITY AND CAPITAL RESOURCES

As of September 30, 2001, the Company had cash and marketable investments of approximately $100.3 million. During the three months ended September 30, 2001, the Company generated approximately $7.2 million in cash from operations compared to $4.9 million generated during the three months ended September 30, 2000. This increase in cash generated from operations was primarily due to decreased trade accounts receivable. Days sales outstanding was 67 days at September 30, 2001 and 58 days at September 30, 2000.

During the three months ended September 30, 2001, the Company's investing activities used approximately $8.6 million of cash. During the period, investing activities consisted of net purchase of $6.1 million in securities and $1.5 million for the purchase of computers, furniture and equipment and $1.0 million investment in a joint venture. During the three months ended September 30, 2000, the Company's investing activities use of cash netted to $0. During the three months ended September 30, 2000, investing activities consisted of $2.4 million for the purchase of computers, furniture and equipment. These cash flows were 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, 2001 and 2000, the Company's financing activities used approximately $259,000 and $51,000, 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, 2001.

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.

None

(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, 2001

By: /s/ G. MEAD WYMAN

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