UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 OR 15(d) of The Securities Exchange Act of 1934

Date of Report (Date of earliest event reported)	October 14, 2004	
	MERCURY COMPUTER SYSTEMS, INC. (Exact name of registrant as specified in its charter)	
	(Exact nume of registrant as specifica in its charter)	
Massachusetts	000-23599	04-2741391
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification No.)
199 Riverneck Road, Chelmsford, Massachusetts		01824
(Address of principal executive offices)		(Zip Code)
Registrant's telephone number, including area code	(978) 256-1300	
	N/A	
	Former name or former address, if changed since last report)	

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

□ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

□ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

Dere-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 2.02. Results of Operations and Financial Condition.

On October 14, 2004, Mercury Computer Systems, Inc. (the "Company") issued a press release regarding its financial results for the quarter ended September 30, 2004. The Company's press release is attached as Exhibit 99.1 to this Current Report on Form 8-K and incorporated by reference herein.

The information in this Current Report on Form 8-K and the Exhibit attached hereto shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934 (the "Exchange Act") or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933 or the Exchange Act, regardless of any general incorporation language in such filing.

Item 9.01. Financial Statements and Exhibits.

(c) Exhibits.	
Exhibit No.	Description
99.1	Press Release, dated October 14, 2004, of Mercury Computer Systems, Inc.

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SIGNATURES

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.

By: /s/ Joseph M. Hartnett

Joseph M. Hartnett Vice President, Controller and Chief Accounting Officer

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Date: October 14, 2004

EXHIBIT INDEX

Exhibit No.	Description

99.1 Press Release, dated October 14, 2004, of Mercury Computer Systems, Inc.

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Mercury Computer Systems Reports Record First Quarter Revenues of \$55 Million

First Quarter Earnings Per Share of \$0.23

Cash Flow from Operations of \$11.2 Million

CHELMSFORD, Mass. – October 14, 2004 – Mercury Computer Systems, Inc. (NASDAQ: MRCY) today reported results for its first quarter ended September 30, 2004. The Company posted its 55th consecutive quarter of profitable performance.

- First quarter revenues were \$55.0 million, an increase of 35.7% over the prior year's first quarter, and a record for first quarter revenues.
- First quarter operating income was \$8.0 million, representing 14.5% of revenues.
- First quarter net income was \$5.1 million, or 9.3% of revenues. Diluted earnings per share (EPS) were \$0.23 for the first quarter, exceeding guidance by \$0.01.
- Cash flows from operating activities were \$11.2 million in the first quarter.

"We are proud to announce record first quarter revenues of \$55 million, which is also the second highest revenue quarter in the Company's history," said Jay Bertelli, president and chief executive officer of Mercury Computer Systems. "This quarter marks our 55th consecutive quarter of profitability, and a strong start to our fiscal year. We are well-positioned to execute on our growth initiatives for fiscal 2005 and beyond, with the objective to sustain a 25% or better long-term revenue growth rate."

Backlog

The Company's total backlog at the end of the quarter was \$83.0 million, a \$19.6 million increase over the same quarter last year. Of the current total backlog, \$73.3 million represents shipments scheduled over the next 12 months.

Defense Electronics

Defense electronics revenues grew to \$31.0 million, representing 56% of total revenues for the quarter and an increase of 8% over last year. Revenues were particularly strong in signals intelligence and defense technology segments.

Imaging and Visualization Solutions

Imaging and visualization solutions revenues grew to \$10.5 million, representing 19% of total revenues for the quarter and an increase of 46% over last year. Revenues were particularly strong in the area of digital X-ray.

OEM Solutions

OEM solutions revenues grew to \$13.5 million, representing 25% of total revenues for the quarter and an increase of \$9.0 million from last year. Revenues were driven by design wins in semiconductor inspection applications that moved into production.

Business Outlook

This section presents our current expectations and estimates, given current visibility, on our business outlook. It is possible that actual performance will differ materially from the ranges and estimates given - either on the upside or on the downside. Investors should consider all of the risks, including those listed in the Safe Harbor Statement below, with respect to these estimates and make themselves aware of the risk factors that may impact the Company's actual performance.

On October 11, the Financial Accounting Standards Board (FASB) ratified the Emerging Issues Task Force (EITF), Item 04-08, "Accounting Issues Related to Certain Features of Contingently Convertible Debt and the Effect on Diluted Earnings Per Share."

Our guidance anticipates this FASB-proposed change in accounting treatment relative to our contingent convertible debt offering completed earlier in the year. This change in accounting treatment will become effective with the next quarter reporting cycle, ending December 31, 2004. The impact of this accounting change is included within the guidance provided below.

The impact of this new accounting treatment for contingent convertibles would be to first adjust net income by adding back interest expense and amortization of debt issuance costs, net of tax; and then to increase the total shares outstanding by converting the debt to equivalent shares at the conversion price.

The new FASB regulation would impact the Company's second quarter reported earnings per share in the following manner. Net income would be increased by approximately \$0.6 million, and shares outstanding would be increased by approximately 4.1 million shares.

In the second quarter of fiscal year 2005, revenues are expected to be in the range of \$56 to \$58 million. At these revenue levels, and under this new FASB accounting, the Company projects a range of \$0.25 to \$0.28 for earnings per share for the second quarter ending December 31, 2004.

For the full year, the Company continues to project revenues to be in the range of \$225 to \$230 million. At these revenue levels, the Company had projected a range of \$1.20 to \$1.25 for full-year earnings per share. Due entirely to the pending FASB accounting change related to contingent convertibles, the Company now projects a range of \$1.10 to \$1.15.

Recent Highlights

- September Mercury was featured on the cover of the September issue of Advanced Imaging magazine and in the feature article "High-Performance Systems for Multi-dimensional Medical Imaging."
- September Mercury's Ensemble development system was highlighted at SNDF 2004 Europe, the premier event for developers in the networking industry. Mercury participated in joint announcements with Xilinx, Inc. and Enea Embedded Systems on Ensemble's interoperability and technology and standards support, that includes serial RapidIO[®], the OSE real-time operating system, and the Advanced Telecom Computing Architecture (AdvancedTCA).
- September Mercury introduced the MCP3 FCN, the first of a new family of rugged, 3U CompactPCI signal processing modules. The MCP3 FCN integrates a PowerPC 7447 processor, a Virtex-II Pro FPGA, and a PMC site, and is designed for deployment in harsh environments.
- August Mercury introduced the first multi-chassis, serial RapidIO systems. The Mercury ImpactRT[™] 3200 and PowerStream[®] 7000 systems provide high-bandwidth serial RapidIO over fiber connections in a single, cohesive system, and enable twice the system performance to address the increasingly larger computational challenges in commercial and defense applications.

- August Mercury is the technology feature story "New infrastructure for deployed military environments" in the August issue of VMEbus Systems magazine.
- July Mercury announced a follow-on order for RACE++[®] systems for the development and implementation of the SOSTAR-X (Stand-Off Surveillance and Target Acquisition Radar) system from the Research Establishment for Applied Science. SOSTAR-X is a European radar development system comprising ground surveillance and target identification, synthetic aperture radar (SAR), classification and data exploitation technologies.
- July Mercury shipped RACE++ systems to Telephonics Corporation for the Canadian Air Force's CP-140 Aurora Incremental Modernization Program. The Aurora aircraft is used for search and rescue, sovereignty, and counter-drug patrols. Mercury's multicomputers will be installed in the advanced APS-143B(V)3-MPA OceanEye Surveillance Radar on the CP-140 Aurora and will enable the Canadian Air Force to detect, classify and track targets or objects at sea; detect and image land targets; and provide ground mapping.

Conference Call Information

Management will host a conference call today at 11:00 a.m. ET to review the first quarter results, and discuss the outlook for fiscal 2005. To listen to the conference call, dial (800) 289-0494 in the USA and Canada, and for international, dial (913) 981-5520. The conference code number is 905044. Please call five to ten minutes prior to the scheduled start time. This call will also be broadcast live over the web at www.mc.com/investor under Investor Events.

A replay of the call by telephone will be available from approximately 2:00 p.m. ET on Thursday, October 14 through midnight ET on Thursday, October 28. To access the replay, dial (888) 203-1112 in the USA and Canada, and for international, dial (719) 457-0820. Enter access code 905044. A replay of the webcast of the call will be available for an extended period of time on the Investor Events page of the Company's website at www.mc.com/investor.

Forward-Looking Safe Harbor Statement

This press release contains certain forward-looking statements, as that term is defined in the Private Securities Litigation Reform Act of 1995, including those relating to anticipated fiscal 2005 business performance and beyond. You can identify these statements by our use of the words "may," "will," "should," "plans," "expects," "anticipates," "continue," "estimate," "project," "intend," and similar expressions. These forward-looking statements involve risks and uncertainties that could cause actual results to differ materially from those projected or anticipated. Such risks and uncertainties include, but are not limited to, general economic and business conditions, including unforeseen economic weakness in the Company's markets, effects of continued geo-political unrest and regional conflicts, competition, changes in technology and methods of marketing, delays in completing various engineering and manufacturing programs, changes in customer order patterns, changes in product mix, continued success in technological advances and delivering technological innovations, the failure to locate favorable acquisition and partnership opportunities, continued functional risk factors as are discussed in the Company's recent filings with the U.S. Securities and Exchange Commission, including its Annual Report on Form 10-K for the year ended June 30, 2004. The Company cautions readers not to place undue reliance upon any such forward-looking statements, which speak only as of the date made. The Company may, in its discretion, provide information in future public announcements regarding its outlook that may be of interest to the investment community. The format and extent of future outlooks may be different from the format and extent of the information contained in this release.

About Mercury Computer Systems, Inc.

Contact:

Mercury Computer Systems, Inc. (NASDAQ: MRCY) is the leading provider of commercial off-the-shelf (COTS) embedded digital signal and image processing computer systems. Mercury's products play a critical role in a wide range of applications, transforming sensor data to information for analysis and interpretation. In military reconnaissance and surveillance platforms the Company's systems process real-time radar, sonar, and signals intelligence data. Mercury's systems are also used in state-of-the-art medical diagnostic imaging devices including MRI, CT, PET, and digital X-ray, and in semiconductor imaging applications including photomask generation and wafer inspection. Mercury provides advanced 3D image processing and visualization software and optimized systems to diverse end markets including life sciences, geosciences, and simulation. The Company also develops radio frequency (RF) products for enhanced communications capabilities in military and commercial applications.

Based in Chelmsford, Massachusetts, Mercury serves customers in North America, Europe and Asia through its direct sales force and a network of subsidiaries and distributors. Visit Mercury on the web at www.mc.com.

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Diane Basile Vice President, Investor Relations & Corporate Communications 978-256-1300 ImpactRT is a trademark, and PowerStream and RACE++ are registered trademarks of Mercury Computer Systems, Inc. Product and company names mentioned may be trademarks and/or registered trademarks of their respective holders.

MERCURY COMPUTER SYSTEMS, INC.

Consolidated Balance Sheet (in thousands)

	September 30, 2004	June 30, 2004
	(unaudited)	
Assets		
Current assets:		
Cash and cash equivalents	\$ 125,076	\$148,995
Marketable securities	61,201	54,898
Accounts receivable, net	30,759	41,609
Inventory	11,793	10,746
Deferred tax assets, net	3,819	3,819
Prepaid expenses and other current assets	4,091	5,370
Total current assets	236,739	265,437
Marketable securities	54,218	34,391
Property and equipment, net	25,972	25,866
Goodwill	28,963	29,009
Acquired intangible assets, net	5,113	5,529
Deferred tax assets, net	3,612	3,612
Other assets	8,880	5,894
Total assets	\$ 363,497	\$369,738
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 9,169	\$ 10,884
Accrued expenses	10,148	5,715
Accrued compensation	9,196	13,147
Amounts payable for acquisition	7,512	7,512
Notes payable	990	948
Income taxes payable	3,564	6,922
Deferred revenues and customer advances	5,847	5,851
Total current liabilities	46,426	50,979
Notes payable	135,643	135,827
Deferred compensation	1,140	1,122
Other long-term liabilities	870	953
Total liabilities	184,079	188,881
Stockholders' equity:		
Common stock	210	223
Additional paid-in capital	15,847	53,882
Treasury stock, at cost		(31,336
Retained earnings	163,006	157,908
Accumulated other comprehensive income	355	180
Total stockholders' equity	179,418	180,857
Total liabilities and stockholders' equity	\$ 363,497	\$369,738

MERCURY COMPUTER SYSTEMS, INC. UNAUDITED CONSOLIDATED STATEMENTS OF INCOME (in thousands, except per share data)

		Three months ended September 30,	
	2004	2003	
Net revenues	\$54,982	\$40,521	
Cost of revenues	19,464	14,539	
Gross profit	35,518	25,982	
Operating expenses:			
Selling, general and administrative	16,023	12,796	
Research and development	11,522	8,734	
Total operating expenses	27,545	21,530	
Income from operations	7,973	4,452	
Interest income	994	429	
Interest expense	(1,054)	(223)	
Other income (expense), net	(189)	116	
Income before income taxes	7,724	4,774	
Income tax provision	2,626	1,480	
Net income	\$ 5,098	\$ 3,294	
Net income per share:			
Basic	\$ 0.24	\$ 0.16	
Diluted	\$ 0.23	\$ 0.15	
Weighted average shares outstanding:			
Basic	21,178	21,002	
Diluted	21,916	21,580	

MERCURY COMPUTER SYSTEMS, INC. UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)

204203Cash flows from operating activities:\$ 5,098\$ 3,294Depreciation and amortization2,0501,916Other and non-cash items, net2,74426Changes in operating assets and liabilities3,7513,527Net cash provided by operating activities11,1739,162Cash flows from investing activities.(26,192)2,319Purchases of property and equipment(1,707)(1,011)Net cash used in investing activities(27,899)1,308Cash flows from financing activities:7575Purchases of property and equipment(1,707)(1,011)Net cash used in investing activities7575Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(39)21Effect of exchange rate changes on cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158Cash and cash equivalents23,91910,692			Three months ended September 30,	
Net income\$ 5,098\$ 3,294Depreciation and amortization2,0501,916Other and non-cash items, net2,744,215Changes in operating assets and liabilities3,7513,527Net cash provided by operating activities11,1739,162Cash flows from investing activities:2,3192,319Purchases of property and equipment(26,192)2,319Net cash used in investing activities(27,899)1,308Cash flows from financing activities(27,899)1,308Cash flows from employee stock plans867375Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period27,15827,158		2004	2003	
Depreciation and amortization2,0501,916Other and non-cash items, net274425Changes in operating assets and liabilities3,7513,527Net cash provided by operating activities11,1739,162Cash flows from investing activities: Sales (purchases) of marketable securities, net(26,192)2,319Purchases of property and equipment(1,707)(1,011)Net cash used in investing activities: Proceeds from employee stock plans867375Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(7,155)201Effect of exchange rate changes on cash and cash equivalents(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period2148,99527,158	Cash flows from operating activities:			
Other and non-cash items, net274425Changes in operating assets and liabilities3,7513,527Net cash provided by operating activities11,1739,162Cash flows from investing activities:26,192)2,319Purchases of property and equipment(1,707)(1,011)Net cash used in investing activities(27,899)1,308Cash flows from financing activities:(27,899)1,308Cash flows from financing activities:(27,899)1,308Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(38)21Effect of exchange rate changes on cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158	Net income	\$ 5,098	\$ 3,294	
Changes in operating assets and liabilities3,7513,527Net cash provided by operating activities11,1739,162Cash flows from investing activities:26,1922,319Purchases of property and equipment(1,707)(1,011)Net cash used in investing activities27,8991,308Cash flows from financing activities:867375Proceeds from employee stock plans867375Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(7,155)201Effect of exchange rate changes on cash and cash equivalents(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158	Depreciation and amortization	2,050	1,916	
Net cash provided by operating activities11,1739,162Cash flows from investing activities: Sales (purchases) of marketable securities, net Purchases of property and equipment(26,192)2,319Purchases of property and equipment(1,707)(1,011)Net cash used in investing activities(27,899)1,308Cash flows from financing activities: Proceeds from employee stock plans867375Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(7,155)201Effect of exchange rate changes on cash and cash equivalents(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158	Other and non-cash items, net	274	425	
Cash flows from investing activities: Sales (purchases) of marketable securities, net Purchases of property and equipment(26,192) (1,011)Net cash used in investing activities(27,899)1,308Cash flows from financing activities: Proceeds from employee stock plans867375Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(38)21Net cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158	Changes in operating assets and liabilities	3,751	3,527	
Cash flows from investing activities: Sales (purchases) of marketable securities, net Purchases of property and equipment(26,192) (1,011)Net cash used in investing activities(27,899)1,308Cash flows from financing activities: Proceeds from employee stock plans867375Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(38)21Net cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158			·	
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Sales (purchases) of marketable securities, net(26,192)2,319Purchases of property and equipment(1,707)(1,011)Net cash used in investing activities(27,899)1,308Cash flows from financing activities:867375Proceeds from employee stock plans867375Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(7,155)201Effect of exchange rate changes on cash and cash equivalents(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158			·	
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Cash flows from financing activities: Proceeds from employee stock plans867375Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(7,155)201Effect of exchange rate changes on cash and cash equivalents(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158	Purchases of property and equipment	(1,707)	(1,011)	
Cash flows from financing activities: Proceeds from employee stock plans867375Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(7,155)201Effect of exchange rate changes on cash and cash equivalents(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158				
Proceeds from employee stock plans867375Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(7,155)201Effect of exchange rate changes on cash and cash equivalents(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158	Net cash used in investing activities	(27,899)	1,308	
Proceeds from employee stock plans867375Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(7,155)201Effect of exchange rate changes on cash and cash equivalents(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158	Cash flows from financing activities:			
Purchases of common stock(7,844)-Principal payments under notes payable(178)(174)Net cash provided by (used in) financing activities(7,155)201Effect of exchange rate changes on cash and cash equivalents(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158		867	375	
Net cash provided by (used in) financing activities(7,155)201Effect of exchange rate changes on cash and cash equivalents(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158		(7,844)		
Effect of exchange rate changes on cash and cash equivalents(38)21Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158	Principal payments under notes payable	(178)	(174)	
Net increase (decrease) in cash and cash equivalents(23,919)10,692Cash and cash equivalents at beginning of period148,99527,158	Net cash provided by (used in) financing activities	(7,155)	201	
Cash and cash equivalents at beginning of period 27,158	Effect of exchange rate changes on cash and cash equivalents	(38)	21	
	Net increase (decrease) in cash and cash equivalents	(23,919)	10,692	
Cash and cash equivalents at end of period \$125.076 \$37.850	Cash and cash equivalents at beginning of period	148,995	27,158	
	Cash and cash equivalents at end of period	\$125,076	\$37,850	