

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

**FORM 10-Q/A
AMENDMENT NO. 1**

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

FOR THE QUARTERLY PERIOD ENDED DECEMBER 31, 2004

COMMISSION FILE NUMBER 0-23599

MERCURY COMPUTER SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

MASSACHUSETTS
(State or other jurisdiction of
incorporation or organization)

**199 RIVERNECK ROAD
CHELMSFORD, MA**
(Address of principal executive offices)

04-2741391
(I.R.S. Employer
Identification No.)

01824
(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 No

Indicate by check mark whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Exchange Act). Yes No

Number of shares outstanding of the issuer's classes of common stock as of January 31, 2005:

<u>Class</u>	<u>Number of Shares Outstanding</u>
Common Stock, par value \$.01 per share	21,083,213

EXPLANATORY NOTE

We are filing this Amendment No. 1 on Form 10-Q/A solely to amend our disclosures in Item 4 of Part I of our quarterly report on Form 10-Q for the quarterly period ended December 31, 2004, which was originally filed with the Securities and Exchange Commission on February 8, 2005. The purpose of this Amendment No. 1 is to address comments that we received from the Staff of the Division of Corporation Finance of the SEC in connection with the filing of the Form 10-Q and to correct a typographical error that referenced incorrectly our "first fiscal quarter" instead of our "second fiscal quarter." Pursuant to Rule 12b-15 under the Securities and Exchange Act of 1934, as amended, this Amendment No. 1 contains the complete text of Item 4 of Part I and Item 6 of Part II, as amended. Unaffected items have not been repeated in this Amendment No. 1. This Amendment No. 1 speaks as of the date of the original filing of the Form 10-Q and has not been updated to reflect events occurring subsequent to the original filing date.

PART I

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures. Based on our management's evaluation (with the participation of our principal executive officer and principal financial officer), as of the end of the period covered by this report, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) were effective. We continue to review our disclosure controls and procedures and may from time to time make changes aimed at enhancing their effectiveness and to ensure that our systems evolve with our company's business.

Changes in Internal Control over Financial Reporting. There was no change in our internal control over financial reporting that occurred during our second fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II

ITEM 6. EXHIBITS

ITEM NO.	DESCRIPTION OF EXHIBIT
3.1	Restated Articles of Organization, as amended. (Incorporated herein by reference to Exhibit 3.1 of the Company's Annual Report on Form 10-K for the year ended June 30, 2003).
3.2*	Amendment to Restated Articles of Organization dated November 15, 2004.
3.3	By-laws, as amended. (Incorporated herein by reference to Exhibit 3.2 of the Company's Quarterly Report on Form 10-Q for the period ended September 30, 2004).
10.1	1997 Stock Option Plan, as amended. (Incorporated herein by reference to the Company's Current Report on Form 8-K, dated November 15, 2004 and filed with the SEC on November 18, 2004).
10.2	Long Term Incentive Plan. (Incorporated herein by reference to the Company's Current Report on Form 8-K, dated December 22, 2004 and filed with the SEC on December 23, 2004).
12.1*	Ratios of Earnings to Fixed Charges.
31.1	Certification of the Company's Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of the Company's Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1**	Certification of the Company's Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2**	Certification of the Company's Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

* Previously filed with the quarterly report on Form 10-Q for the quarter ended December 31, 2004.

** Previously furnished with the quarterly report on Form 10-Q for the quarter ended December 31, 2004.

CERTIFICATION

I, James R. Bertelli, President and Chief Executive Officer of Mercury Computer Systems, Inc., certify that:

1. I have reviewed this quarterly report on Form 10-Q/A of Mercury Computer Systems, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. [Intentionally Omitted]
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 19, 2005

/s/ James R. Bertelli

James R. Bertelli
PRESIDENT AND CHIEF EXECUTIVE OFFICER
[PRINCIPAL EXECUTIVE OFFICER]

CERTIFICATION

I, Robert E. Hult, Senior Vice President and Chief Financial Officer of Mercury Computer Systems, Inc., certify that:

1. I have reviewed this quarterly report on Form 10-Q/A of Mercury Computer Systems, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. [Intentionally Omitted]
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 19, 2005

/s/ Robert E. Hult

Robert E. Hult
SENIOR VICE PRESIDENT AND
CHIEF FINANCIAL OFFICER
[PRINCIPAL FINANCIAL OFFICER]