UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 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): July 21, 2006

Mercury Computer Systems, Inc.

(Exact Name of Registrant as Specified in Charter)

Massachusetts (State or Other Jurisdiction 000-23599 (Commission File Number) 04-2741391 (IRS Employer

of Incorporation)

Identification No.)

199 Riverneck Road, Chelmsford, Massachusetts (Address of Principal Executive Offices)

01824 (Zip Code)

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

N/A

(Former Name or Former Address, if Changed Since Last Report)

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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)
- " Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- x 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 July 27, 2006, Mercury Computer Systems, Inc. (the Company) issued a press release regarding its financial results for the quarter and fiscal year ended June 30, 2006. The Company s press release is attached as Exhibit 99.1 to this Current Report on Form 8-K and incorporated by reference herein.

Information in Item 2.02 of 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.

USE OF NON-GAAP FINANCIAL MEASURES

In addition to reporting financial results in accordance with generally accepted accounting principles, or GAAP, the Company provides non-GAAP measures adjusted to exclude certain non-cash and other specified charges, which the Company believes are useful to help investors better understand its past financial performance and prospects for the future. However, the presentation of non-GAAP financial measures is not meant to be considered in isolation or as a substitute for financial information provided in accordance with GAAP. Management believes these non-GAAP financial measures assist in providing a more complete understanding of the Company s underlying operational results and trends, and management uses these measures along with their corresponding GAAP financial measures to manage the Company s business, to evaluate its performance compared to prior periods and the marketplace, and to establish operational goals.

Item 2.05. Costs Associated with Exit or Disposal Activities.

On July 21, 2006, authorized officers of the Company committed the Company to a plan to realign certain responsibilities within its Defense business unit, which plan will involve terminating the employment of 11 employees by the end of the current fiscal quarter. This workforce reduction action is expected to result in total cash expenditures of approximately \$600,000, payable over the next three quarters.

Item 8.01. Other Events.

On July 27, 2006, the Company issued a press release regarding, among other things, a Special Meeting of Shareholders at which the Company s shareholders will vote on a proposal to approve a stock option exchange program and related amendment to the Company s 2005 Stock Incentive Plan. A copy of the press release is attached as Exhibit 99.1.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No. Description

99.1 Press Release, dated July 27, 2006, of Mercury Computer Systems, Inc.

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 hereunto duly authorized.

MERCURY COMPUTER SYSTEMS, INC. (Registrant)

By: /s/ Alex N. Braverman
Alex N. Braverman
Vice President, Controller and
Chief Accounting Officer

Date: July 27, 2006

EXHIBIT INDEX

Exhibit No. Description

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