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): June 27, 2006

Mercury Computer Systems, Inc.

(Exact Name of Registrant as Specified in Charter)

Massachusetts
(State or Other Jurisdiction of Incorporation)

000-23599 (Commission File Number)

04-2741391 (IRS Employer 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)

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):

- o Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- x Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- x Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 8.01. Other Events.

On June 27, 2006, Mercury Computer Systems, Inc. ("Mercury") filed with the Securities and Exchange Commission preliminary proxy materials on Schedule 14A in connection with a Special Meeting of Shareholders at which Mercury's shareholders will vote on a proposal to approve a stock option exchange program and related amendment to Mercury's 2005 Stock Incentive Plan described in the preliminary proxy materials.

On June 27, 2006, Mercury issued a press release regarding the proposed exchange program. A copy of the press release is attached as Exhibit 99.1 hereto.

Additional Information and Where to Find It

Mercury has not commenced the exchange program referred to above. If the exchange program is approved by shareholders, Mercury will provide eligible employees with written materials explaining the full terms and conditions of the program, and will also file these materials with the Securities and Exchange Commission. WHEN THESE MATERIALS BECOME AVAILABLE, EMPLOYEES ELIGIBLE FOR THE EXCHANGE PROGRAM SHOULD READ THEM CAREFULLY, AS WELL AS ANY AMENDMENTS OR SUPPLEMENTS TO THOSE DOCUMENTS, BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT THE PROPOSED OPTION EXCHANGE PROGRAM.

Mercury also plans to mail to its shareholders a proxy statement in connection with the approval of the option exchange program. The proxy statement will contain important information about Mercury, the option exchange program and related matters. Mercury, and its directors and executive officers, may be deemed to be participants in the solicitation of proxies in respect of the approval of the option exchange program. Information regarding Mercury's directors and executive officers is contained in Mercury's filings with the Securities and Exchange Commission, and additional information regarding the interests of those participants may be obtained by reading the proxy statement regarding the proposed option exchange program. SHAREHOLDERS ARE URGED TO READ THE PROXY STATEMENT AND ANY OTHER RELEVANT DOCUMENTS FILED WITH THE

SECURITIES AND EXCHANGE COMMISSION, AS WELL AS ANY AMENDMENTS OR SUPPLEMENTS TO THOSE DOCUMENTS, BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT THE PROPOSED OPTION EXCHANGE PROGRAM.

Once the materials are filed with the Securities and Exchange Commission, they will be available free of charge at www.sec.gov and on Mercury's website at www.mc.com and by contacting Mercury's Investor Relations department at 199 Riverneck Road, Chelmsford, MA 01824, telephone (978) 256-1300.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No. Description

99.1 Press release dated June 27, 2006.

2

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)

Date: June 27, 2006 By: /s/ Robert E. Hult

Robert E. Hult

Senior Vice President, Operations and Finance, Chief Financial Officer

3

EXHIBIT INDEX

Exhibit No. Description

99.1 Press release dated June 27, 2006.

News Release



FOR IMMEDIATE RELEASE

Mercury Computer Systems Files Proxy Materials for Special Meeting of Shareholders

Shareholders will be asked to approve proposed stock option exchange program

CHELMSFORD, Mass. - June 27, 2006 - Mercury Computer Systems, Inc. (NASDAQ:MRCY), today filed with the Securities and Exchange Commission preliminary proxy materials in connection with a special meeting of shareholders.

At the special meeting, shareholders will be asked to approve a program that will permit eligible employees to exchange outstanding options with exercise prices greater than \$23.00 per share for a lesser number of shares of restricted stock in accordance with a fixed 4-to-1 exchange ratio. Members of Mercury's Board of Directors and its five most highly compensated executive officers (including the chief executive officer) will not be eligible to participate. Mercury will not proceed with the program unless it is approved by shareholders.

"An equity stake in Mercury's success is a critical component of our compensation, incentive and retention programs," said Jay Bertelli, president and chief executive officer of Mercury Computer Systems, Inc. "We believe this exchange program will provide us with an opportunity to restore for eligible employees an incentive to contribute to the future growth and success of our business."

The restricted stock awards that will be issued in the exchange program will be completely unvested at the time they are granted and will generally vest in three equal annual installments commencing on the first anniversary of the date of grant. Awards granted to participating executive officers and to certain eligible non-U.S. employees will vest as to two-thirds of the covered shares on the second anniversary of the date of grant and as to the remaining one-third

-more-

199 Riverneck Road, Chelmsford, Massachusetts 01824-2820 U.S.A. 978-256-1300 · Fax 978-256-0852 · www.mc.com

Mercury Computer Systems Files Proxy Materials for Special Meeting of Shareholders

Page 2

on the third anniversary of the date of grant. These vesting schedules will apply regardless of the vesting status of the options being exchanged. A fuller description of the proposed exchange program is contained in Mercury's proxy statement.

Additional Information and Where to Find It

Mercury has not commenced the exchange program referred to in this press release. If the exchange program is approved by shareholders, Mercury will provide eligible employees with written materials explaining the full terms and conditions of the program, and will also file these materials with the Securities and Exchange Commission. WHEN THESE MATERIALS BECOME AVAILABLE, EMPLOYEES ELIGIBLE FOR THE EXCHANGE PROGRAM SHOULD READ THEM CAREFULLY, AS WELL AS ANY AMENDMENTS OR SUPPLEMENTS TO THOSE DOCUMENTS, BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT THE PROPOSED STOCK OPTION EXCHANGE PROGRAM.

Mercury also plans to mail to its shareholders a proxy statement in connection with the approval of the stock option exchange program. The proxy statement will contain important information about Mercury, the option exchange program and related matters. Mercury, and its directors and executive officers, may be deemed to be participants in the solicitation of proxies in respect of the approval of the stock option exchange program. Information regarding Mercury's directors and executive officers is contained in Mercury's filings with the Securities and Exchange Commission, and additional information regarding the interests of those participants may be obtained by reading the proxy statement regarding the proposed stock option exchange program. SHAREHOLDERS ARE URGED TO READ THE PROXY STATEMENT AND ANY OTHER RELEVANT DOCUMENTS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION, AS WELL AS ANY AMENDMENTS OR SUPPLEMENTS TO THOSE DOCUMENTS, BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT THE PROPOSED STOCK OPTION EXCHANGE PROGRAM.

Once the materials are filed with the Securities and Exchange Commission, they will be available free of charge at www.sec.gov and on Mercury's website at www.mc.com and by

Mercury Computer Systems Files Proxy Materials for Special Meeting of Shareholders

Page 3

contacting Mercury's Investor Relations department at 199 Riverneck Road, Chelmsford, MA 01824, telephone (978) 256-1300.

About Mercury Computer Systems, Inc.

Mercury Computer Systems, Inc. (NASDAQ: MRCY) is the leading provider of high-performance embedded, real-time digital signal and image processing solutions. Mercury's solutions 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, 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 provides 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.

###

Contact: Robert Hult, CFO Mercury Computer Systems, Inc. 978-967-1990