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): December 14, 2007

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

Not Applicable

(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))

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

Item 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers

On December 14, 2007, Mercury Computer Systems, Inc. (the "Company") entered into a Second Amendment (the "Second Amendment") to the Employment Agreement, dated March 8, 2007 and amended September 26, 2007 (the "Employment Agreement"), with Robert E. Hult, Senior Vice President, Chief Financial Officer and Treasurer of the Company. In connection with entering into the Second Amendment, Mr. Hult agreed to postpone his previously-announced retirement, which had been scheduled for February 1, 2008, and to instead remain an employee of the Company.

The Second Amendment extends the term of the Employment Agreement to December 14, 2009. The Second Amendment also eliminates the retention bonuses that were potentially payable to Mr. Hult on September 15, 2008 and September 15, 2009; extends the notice period for the termination by Mr. Hult of his employment to 180 days; and provides for the payment of cash consulting fees and the continued vesting of certain restricted stock awards in accordance with their original vesting schedules so long as Mr. Hult continues to be available to provide consulting services to the Company through December 14, 2009. Except to the extent expressly amended by the Second Amendment, the terms of Mr. Hult's Employment Agreement remain in full force and effect.

The foregoing summary is qualified in its entirety by reference to the Second Amendment, a copy of which is filed as Exhibit 10.1 to this Current Report on Form 8-K and is incorporated herein by reference, and to Mr. Hult's original Employment Agreement (a copy of which was filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the Securities and Exchange Commission on March 13, 2007) and the First Amendment to the Employment Agreement (a copy of which was filed as Exhibit 10.2 to the Company's Current Report on Form 8-K filed with the SEC on September 28, 2007), both of which are also incorporated herein by reference.

Also in connection with the postponement of his retirement, Mr. Hult's annual base salary was increased to \$290,000. and he was granted an option to purchase 25,000 shares of the Company's common stock with an exercise price of \$15.10 per share, which was the closing price of the Company's common stock on December 14, 2007, the date of grant.

Item 5.03 Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year

On December 17, 2007, the Board of Directors of the Company approved amendments to Sections 8.3 and 8.5 of the Company's By-Laws to allow for the issuance and transfer of uncertificated shares of the Company, which amendments were effective immediately. The purpose of these amendments was to ensure that the Company would be eligible to participate in a Direct Registration Program, as required by NASDAQ Rule 4350. The full text of the amendments is attached hereto as Exhibit 3.1 and is incorporated herein by reference.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits

Exhibit No.	Description
3.1	Amendment to By-Laws of Mercury Computer Systems, Inc. dated December 17, 2007
10.1	Second Amendment to Employment Agreement, dated as of December 14, 2007, by and between Mercury Computer Systems, Inc. and Robert E. Hult

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.

Dated: December 19, 2007

MERCURY COMPUTER SYSTEMS, INC.

By: /s/ Mark Aslett

Mark Aslett President and Chief Executive Officer

EXHIBIT INDEX

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Amendment to By-Laws of Mercury Computer Systems, Inc.

The By-laws of Mercury Computer Systems, Inc., a Massachusetts corporation, are hereby amended by deleting Sections 8.3 and 8.5 in their entirety and replacing such sections with the following:

"Section 8.3 Certificates of Stock

Each stockholder shall be entitled to a certificate in such form as may be prescribed from time to time by the Directors, stating the number and the class and the designation of the series, if any, of the shares held by him. Such certificates shall be signed by the President or a Vice President and by the Treasurer or an Assistant Treasurer. Such signatures may be facsimiles if the certificate is signed by a transfer agent, or by a registrar, other than a Director, officer or employee of the Corporation. In case any officer who has signed or whose facsimile signature has been placed on such certificate shall have ceased to be such officer before such certificate is issued, it may be issued by the Corporation with the same effect as if he were such officer at the time of its issue.

Every certificate issued by the Corporation for shares of stock at a time when such shares are subject to any restriction on transfer pursuant to the Articles of Organization, the By-Laws or any agreement to which the Corporation is a party shall have the restriction noted conspicuously on the certificate and shall also set forth on the face or back of the certificate either the full text of the restriction, or a statement of the existence of such restriction and a statement that the Corporation will furnish a copy thereof to the holder of such certificate upon written request and without charge. Every stock certificate either the full text of the preferences, voting powers, qualifications and special and relative rights of the shares of each class and series, if any, authorized to be issued, as set forth in the Articles of Organization, or a statement of the existence of such certificate upon written request and without charge. Notwithstanding anything to the contrary provided in these By-Laws and consistent with Section 6.26 of the Massachusetts Business Corporation Act as now in effect and hereafter amended, the Board of Directors of the Corporation may authorize the issue of some or all of the shares of any or all of the classes or series without certificates. The authorization shall not effect shares already represented by certificates, until they are surrendered to the Corporation, and by the approval and adoption of these By-Laws, the Board of Directors has determined that all classes or series of shares without certificate shares, whether upon original issue, re-issuance or subsequent transfer. Within a reasonable time after the issue or transfer of shares without certificates, the Corporation shall send the shareholder a written statement of the information required on

certificates by Sections (b) and (c) of Section 6.25 and, if applicable, Section 6.27 of the Massachusetts Business Corporation Act, as now in effect and from time to time amended.

Section 8.5 Transfers

Subject to the restrictions, if any, imposed by the Articles of Organization, the By-Laws or any agreement to which the Corporation is a party, and unless otherwise provided by the Board of Directors, shares of stock of the Corporation that are represented by a certificate shall be transferred on the books of the Corporation only by the surrender to the Corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment of such shares or by a written power of attorney to sell, assign or transfer such shares, properly executed, with necessary transfer stamps affixed, and with such proof that the endorsement, assignment or power of attorney is genuine and effective as the Corporation or its transfer agent may reasonably require. Shares of stock that are not represented by a certificate shall be transferred or assignable on the stock transfer books of the Corporation, by the holders submitting to the Corporation or its transfer agent, such evidence of transfer and following such other procedures as the Corporation or its transfer agent may reasonably require. Except as may otherwise be required by law, the Corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect thereto, regardless of any transfer, pledge or other disposition of such stock, until the shares have been transferred on the books of the Corporation in accordance with the requirements of these By-Laws. It shall be the duty of each stockholder to notify the Corporation of his post office address."

The foregoing is certified as an Amendment to the By-laws of Mercury Computer Systems, Inc. as adopted by the Board of Directors on December 17, 2007.

/s/ Anthony J. Medaglia, Jr. Anthony J. Medaglia, Jr. Secretary

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SECOND AMENDMENT TO EMPLOYMENT AGREEMENT

THIS SECOND AMENDMENT TO EMPLOYMENT AGREEMENT (this "Second Amendment"), dated as of December 14, 2007, is made and entered into by and between Mercury Computer Systems, Inc., a Massachusetts corporation (the "Company"), and Robert E. Hult (the "Executive").

WHEREAS, the Company and the Executive are parties to an Employment Agreement dated March 8, 2007 and amended September 26, 2007 (the "Agreement"), pursuant to which the Executive is entitled to certain benefits in the event of his continued employment with the Company and under certain circumstances following the cessation of his employment with the Company; and

WHEREAS, the Executive had notified the Company of his intention to retire, effective February 1, 2008, in accordance with the terms of the Agreement, but subsequently decided to postpone his retirement and instead remain an employee of the Company; and

WHEREAS, the Company desires to retain the services of the Executive as Senior Vice President, Chief Financial Officer and Treasurer, and the Executive is willing to defer his retirement and remain an employee of the Company, subject to the terms and conditions of the Agreement, as modified by this Second Amendment; and

WHEREAS, capitalized terms used herein and not otherwise defined herein shall have the meanings ascribed to them in the Agreement.

NOW, THEREFORE, in consideration of the foregoing and other respective covenants and agreements of the parties herein contained, the parties hereto agree as follows:

1. Section 1 of the Agreement is hereby amended by deleting such section in its entirety and substituting therefor the following:

"1. <u>Employment</u>. The term of this Agreement shall extend from the Commencement Date until December 14, 2009. The term of this Agreement shall be subject to termination as provided in Section 4 and may be referred to herein as the "Term."

2. Section 3(c) of the Agreement is hereby amended by deleting such section in its entirety. The Executive acknowledges and agrees that the Executive shall hereafter have no right to receive any cash retention bonuses under the Agreement if the Executive remains employed by the Company for any period.

3. Section 4(e) of the Agreement is hereby amended by deleting such section in its entirety and substituting therefor the following:

"(e) <u>Termination by the Executive</u>. At any time during the Term, the Executive may terminate his employment hereunder for any reason, including retirement, upon 180 days' written notice to the Company."

4. Section 5(b)(v) of the Agreement is hereby amended by deleting such section in its entirety and substituting therefor the following:

"(v) upon the date of termination, the Executive shall become entitled to exercise a certain number of shares of the Company's common stock underlying the stock option granted to him on June 1, 2006. Said number shall be determined by multiplying 62,000 by a fraction (which fraction may not be greater than 1.0), the numerator of which shall be the number of days the Executive was employed as a full-time employee from June 1, 2006 through the date of termination and the denominator of which shall be 1096."

5. Section 5(c) of the Agreement is hereby amended by deleting such section in its entirety and substituting therefor the following:

"(c) <u>Termination by the Executive</u>. If the Executive terminates his employment for any reason, including retirement, as provided in Section 4(e), then the Company shall, through the date of termination, pay the Executive his Accrued Benefit. In addition, if the Executive elects to retire in accordance with the terms hereof during the Term, and the Executive is willing to provide consulting services to the Company, that are commensurate with his current position and duties, such as attending investor relations conferences and participating in preparation of annual reports, at such time and frequencies as reasonably requested by the Company but not to exceed 400 hours per year ("Consulting Services"),

(i) so long as the Executive continues to be willing to provide Consulting Services to the Company, the Company shall pay the Executive an annual amount equal to Fifty Percent (50%) of the Executive's Base Salary (the "Consulting Amount") from the date of termination through December 14, 2009 (including on a pro rata basis for any period of less than one year). The Consulting Amount shall be paid out in substantially equal bi-weekly installments; and

(ii) from the date of termination through December 14, 2009, so long as the Executive continues to be willing to provide Consulting Services to the Company, the restricted stock awards granted to the Executive on August 12, 2005, February 20, 2006 and June 5, 2007, respectively, shall continue to vest on the terms set forth in the relevant stock award agreements, in each case as if the Executive remained continuously employed by the Company from the date of termination through each applicable vesting date; and

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(iii) subject to signing by the Executive of a general release of claims in a form and manner satisfactory to the Company, upon the date of termination, the Executive shall become entitled to exercise a certain number of shares of the Company's common stock underlying the stock option granted to him on June 1, 2006. Said number shall be determined by multiplying 62,000 by a fraction (which fraction may not be greater than 1.0), the numerator of which shall be the number of days the Executive was employed as a full-time employee from June 1, 2006 through the date of termination and the denominator of which shall be 1096.

If the Executive does not agree to provide Consulting Services to the Company in accordance with the terms of this Agreement, the Company has no obligation to the Executive other than payment of his Accrued Benefit. For the avoidance of doubt, the Executive shall be entitled to be paid the Consulting Amount, and the restricted stock awards shall continue to vest in accordance with subsection (ii) above, even if the Company does not request Consulting Services so long as the Executive continues to be willing to provide such services in accordance with this Agreement upon the Company's request."

6. Anything in the Agreement, as amended by this Second Amendment, to the contrary notwithstanding, if at the time of the Executive's termination of employment, the Executive is considered a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, and if any payment that the Executive becomes entitled to under the Agreement, as amended by this Second Amendment, is considered deferred compensation subject to interest and additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, then no such payment shall be payable prior to the date that is the earliest of (i) six months after the Executive's date of termination, (ii) the Executive's death, or (iii) such other date as will cause such payment not to be subject to such interest and additional tax, and the initial payment shall include a catch-up amount covering amounts that would otherwise have been paid during the first six-month period but for the application of this Section 5 of this Second Amendment.

7. Except to the extent expressly amended hereby, the provisions of the Agreement shall remain in full force and effect.

8. The validity, interpretation, construction and performance of this Second Amendment shall be governed by the laws of the Commonwealth of Massachusetts.

9. This Second Amendment may be executed in several counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same instrument.

[Signature Page Follows]

IN WITNESS WHEREOF, the undersigned officer, on behalf of Mercury Computer Systems, Inc., and the Executive have hereunto set their hands as an agreement under seal, all as of the date first above written.

MERCURY COMPUTER SYSTEMS, INC.

By: /s/ Mark Aslett

Mark Aslett President and Chief Executive Officer

EXECUTIVE:

/s/ Robert E. Hult Robert E. Hult

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