

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

**SCHEDULE 14A**

**Proxy Statement Pursuant to Section 14(a) of the Securities  
Exchange Act of 1934 (Amendment No.    )**

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Pursuant to §240.14a-12

**Mercury Computer Systems, Inc.**

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required.
- Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

(1) Title of each class of securities to which transaction applies:

---

(2) Aggregate number of securities to which transaction applies:

---

(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

---

(4) Proposed maximum aggregate value of transaction:

---

(5) Total fee paid:

---

Fee paid previously with preliminary materials:

Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the form or schedule and the date of its filing.

(1) Amount previously paid:

---

(2) Form, Schedule or Registration Statement No.:

---

(3) Filing Party:

---

(4) Date Filed:

---

**Excerpts from Mercury Computer Systems, Inc. Quarterly Conference Call held on April 28, 2009:**

Mark Aslett, President and Chief Executive Officer:

“Before I hand it over to Bob, I’d like to briefly note the special meeting of shareholders scheduled for Friday, May 8th. As outlined in our April 13th proxy statement, the purpose of the meeting is to approve a stock option exchange program, which we feel is critical to employee retention as we execute on our turnaround. The program is structured to provide our employees with meaningful performance incentives while also being shareholder friendly in its design. Bob will provide some of the details in a few minutes. We encourage those of you who are shareholders to vote your shares in favor of this proposal.”

Robert E. Hult, Senior Vice President and Chief Financial Officer:

“I’d like to call your attention to a couple of important corporate items.... Second is the recently mailed proxy statement related to our proposed stock option exchange program for employees. Mark discussed the reasons for the proposal earlier. I’ll expand briefly on the mechanics, which we believe are shareholder friendly in their design. Our executive officers and board of directors are not eligible for the program. It has been structured as a value-for-value exchange for the participants, so it’s FAS-123R neutral to the extent practicable with minimal impact on the P&L. And it only includes stock options with exercise prices that exceed the 52-week high price of our stock. In addition, assuming full participation by the eligible participants, the program would represent approximately a 1.3% net reduction in the company’s equity award overhang. We believe the program is in the best interest of all of our shareholders, and we encourage you to vote in favor of the proposal.”