

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

| OMB APPROVAL                                 |           |
|--|-----------|
| OMB Number:                                  | 3235-0287 |
| Estimated average burden hours per response: | 0.5       |

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

|   |   |  |
|---|---|--|
| 1. Name and Address of Reporting Person*<br><u>MULLIN SHERMAN N</u><br><br>(Last) (First) (Middle)<br><u>665 MANDALAY BEACH ROAD</u><br><br>(Street)<br><u>OXNARD CA 93035-1051</u><br><br>(City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol<br><u>MERCURY COMPUTER SYSTEMS INC [ MRCY ]</u> | 5. Relationship of Reporting Person(s) to Issuer<br>(Check all applicable)<br><input checked="" type="checkbox"/> Director 10% Owner<br>Officer (give title below) Other (specify below) |
|   | 3. Date of Earliest Transaction (Month/Day/Year)<br><u>09/11/2008</u>                       |  |
|   | 4. If Amendment, Date of Original Filed (Month/Day/Year)                                    |  |

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) |   | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) |            |         | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|------------|---------|---|--|---|
|                                 |                                      |  | Code                           | V | Amount  | (A) or (D) | Price   |   |  |   |
| Common Stock                    | 09/11/2008                           |  | M                              |   | 9,974   | A          | \$7.813 | 26,010  | D  |   |

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) |   | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) |     | 6. Date Exercisable and Expiration Date (Month/Day/Year) |                 | 7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4) | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|--|--|--------------------------------------|--|--------------------------------|---|--|-----|--|-----------------|---|--|--|---|--|
|  |  |                                      |  | Code                           | V | (A)  | (D) | Date Exercisable   | Expiration Date |   |  |  |   |  |
| Non-Qualified Stock Option (Right to buy)  | \$7.813  | 09/11/2008                           |  | M                              |   | 9,974  |     | 09/30/2001   | 09/30/2008      | Common  | \$0.00 <sup>(1)</sup>                      | 0  | D   |  |

Explanation of Responses:

1. Field N/A to this transaction but was completed to allow for electronic filing only.

Karl D. Noone, Attorney-in-fact

09/12/2008

\*\* Signature of Reporting Person

Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

\* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.

Know all by these presents, that the undersigned hereby constitutes and appoints each of Robert E. Hult, Senior Vice-President and Chief Financial Officer, Kar

- (1) execute for and on behalf of the undersigned, in the undersigned's capacity as an officer, director and/or shareholder of Mercury Computer Systems, Inc. (the
- (2) do and perform any and all acts for and on behalf of the undersigned which may be necessary or desirable to complete and execute any such Form 3, 4 or 5, or
- (3) take any other action of any type whatsoever which, in the opinion of such attorney-in-fact, may be necessary or desirable in connection with the foregoing ;

The undersigned hereby grants to each such attorney-in-fact full power and authority to do and perform any and every act and thing whatsoever requisite, neces

The undersigned agrees that each such attorney-in-fact shall not be liable for any error of judgment or for any act done or omitted to be done or for any mista

This Limited Power of Attorney shall remain in full force and effect until the undersigned is no longer required to file Forms 3, 4, and 5 with respect to the and transactions in securities of the Company, unless earlier revoked by the undersigned in a signed writing delivered to the foregoing attorneys-in-fact. This Lim

IN WITNESS WHEREOF, the undersigned has caused this Limited Power of Attorney to be executed as of this 3 day of June, 2008.

/s/ Sherman N. Mullin