

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

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

| OMB APPROVAL                                 |           |
|--|-----------|
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|   |   |   |
|---|---|---|
| 1. Name and Address of Reporting Person*<br><u>BERTELLI JAMES R</u><br><br>(Last) (First) (Middle)<br><u>34 POWERS ROAD</u><br><br>(Street)<br><u>HOLLIS NH 03049</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 (Check all applicable)<br>Director 10% Owner<br><input checked="" type="checkbox"/> Officer (give title below) Other (specify below)<br><u>President, CEO &amp; Chairman</u> |
|   | 3. Date of Earliest Transaction (Month/Day/Year)<br><u>08/07/2006</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                    | 08/07/2006                           |  | M                              |   | 7,182   | A          | \$2   | 848,735   | D  |   |
| Common Stock                    | 08/07/2006                           |  | M                              |   | 78,794  | A          | \$4   | 927,529   | D  |   |
| Common Stock                    |                                      |  |                                |   |   |            |       | 12,400 <sup>(1)</sup>   | I  | By Spouse   |

**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 |   |  |  |   |  |
| Exercise of Incentive Stock Option         | \$2  | 08/07/2006                           |  | M                              |   | 7,182  |     | 09/08/1998   | 09/08/2007      | Common 7,182  | \$0.00 <sup>(2)</sup>                      | 0  | D   |  |
| Exercise of Incentive Stock Option         | \$4  | 08/07/2006                           |  | M                              |   | 78,794   |     | 10/20/2001   | 10/20/2007      | Common 78,794   | \$0.00 <sup>(2)</sup>                      | 0  | D   |  |

**Explanation of Responses:**

- This reporting person disclaims beneficial ownership of these securities, and this report shall not be deemed an admission that the reporting person is beneficial owner of these securities for purposes of Section 16 or for any other purposes.
- Field N/A to this transaction but was completed to allow for electronic filing only.

Craig Barrows, Attorney-in-fact

08/09/2006

\*\* 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.