SEC Form 4

**FORM 4**

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

**UNITED STATES SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

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><br> BASS JAMES K | 2. Issuer Name **and** Ticker or Trading Symbol <br><br> MERCURY COMPUTER SYSTEMS INC [ MRCY ] | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) |
|---|---|---|
| (Last)          (First)          (Middle) <br> 201 RIVERNECK ROAD | 3. Date of Earliest Transaction (Month/Day/Year) <br> 10/21/2010 | X   Director                        10% Owner <br> Officer (give title below)   Other (specify below) |
| (Street) <br> CHELMSFORD  MA          01824 <br> (City)          (State)          (Zip) | 4. If Amendment, Date of Original Filed (Month/Day/Year) | 6. Individual or Joint/Group Filing (Check Applicable Line) <br> X   Form filed by One Reporting Person <br> Form filed by More than One Reporting Person |

**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 | 10/21/2010 | | A | | 10,000[1] | A | $0.00 | 10,000 | 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 | Title | Amount or Number of Shares | | | | |
| Non-Qualified Stock Option (Right to buy) | $14.12 | 10/21/2010 | | A | | 15,000 | | 10/21/2011[2] | 10/21/2017 | Common | 15,000 | $0.00[3] | 15,000 | D | |

**Explanation of Responses:**

1. These shares of restricted stock vest in two annual equal installments beginning on October 21, 2011.
2. This stock option vests in two annual equal installments beginning on October 21,2011.
3. Field N/A to this transaction but was completed to allow for electronic filing only.

Charles A. Speicher, Attorney-in-fact                    10/22/2010

** 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.**