

Speicher Charles A
 Form 4
 August 17, 2012

FORM 4

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

OMB APPROVAL

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

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person *
 Speicher Charles A

2. Issuer Name and Ticker or Trading Symbol
 MERCURY COMPUTER SYSTEMS INC [MRCY]

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

(Last) (First) (Middle)
 201 RIVERNECK ROAD
 (Street)

3. Date of Earliest Transaction (Month/Day/Year)
 08/15/2012

____ Director _____ 10% Owner
 Officer (give title below) _____ Other (specify below)
 VP, Controller, and CAO

CHELMSFORD, MA 01844

(City) (State) (Zip)

4. If Amendment, Date Original Filed(Month/Day/Year)

6. Individual or Joint/Group Filing(Check Applicable Line)
 Form filed by One Reporting Person
 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 Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|--|
| | | | | (A) or (D) | Price | | |
| Common Stock | 08/15/2012 | | A | 17,533 (1) | \$ 0 | D | |
| Common Stock | 08/16/2012 | | S | 479 (2) | \$ 9.631 | D | |

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

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SEC 1474 (9-02)

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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 Underlying Securities (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Nu Deriv Deriv Secur Bene Own Follo Repo Trans (Instr |
|--|--|--------------------------------------|--|--------------------------------|---|--|---|--|--|
| | | | | Code V (A) (D) | | Date Exercisable Expiration Date | Title or Number of Shares | | |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|--|---------------|-----------|-------------------------|-------|
| | Director | 10% Owner | Officer | Other |
| Speicher Charles A 201 RIVERNECK ROAD CHELMSFORD, MA 01844 | | | VP, Controller, and CAO | |

Signatures

Charles A. Speicher 08/17/2012

__Signature of Reporting Person Date

Explanation of Responses:

- * 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).

- (1) These shares of restricted stock vest in four equal annual installments beginning August 15, 2013.
- (2) The disposition of shares was to cover the required tax withholding triggered by the vesting of restricted stock.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.