

Thatcher Robert J
 Form 4
 July 21, 2010

FORM 4

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

OMB APPROVAL

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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 *
 Thatcher Robert J

2. Issuer Name and Ticker or Trading Symbol
 Cardiovascular Systems Inc [CSII]

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

(Last) (First) (Middle)
 651 CAMPUS DRIVE
 (Street)

3. Date of Earliest Transaction (Month/Day/Year)
 07/20/2010

____ Director _____ 10% Owner
 Officer (give title below) _____ Other (specify below)
 Executive VP

ST. PAUL, MN 55112
 (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 Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|---|
| Common Stock | 07/20/2010 | | S ⁽¹⁾ | 5,947 D | 4.1555 ⁽²⁾ \$ 51,940 ⁽³⁾ | 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)

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

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| 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 Underlying Securities (Instr. 3 and 4) | |
|--|--|--------------------------------------|--|--------------------------------|---|--|---|--|----------------------------|
| | | | | Code | V (A) (D) | Date Exercisable | Expiration Date | Title | Amount or Number of Shares |
| Stock Option (right to buy) | \$ 12.37 | | | | | (4) | 10/16/2015 | Common Stock | 64,700 |
| Stock Option (right to buy) | \$ 8.83 | | | | | (4) | 12/18/2016 | Common Stock | 7,764 |
| Stock Option (right to buy) | \$ 8.83 | | | | | (4) | 04/17/2017 | Common Stock | 29,762 |
| Stock Option (right to buy) | \$ 7.9 | | | | | (5) | 08/06/2017 | Common Stock | 22,645 |
| Stock Option (right to buy) | \$ 12.15 | | | | | (6) | 12/11/2017 | Common Stock | 32,350 |
| Warrant | \$ 8.83 | | | | | 02/25/2009 | 02/24/2014 | Common Stock | 3,045 |
| Stock Option (right to buy) | \$ 8.75 | | | | | (7) | 03/01/2019 | Common Stock | 11,646 |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|--------------------------------|---------------|-----------|--------------|-------|
| | Director | 10% Owner | Officer | Other |
| Thatcher Robert J | | | Executive VP | |

651 CAMPUS DRIVE
ST. PAUL, MN 55112

Signatures

/s/ John R. Remakel as Attorney-in-Fact for Robert J. Thatcher pursuant to Power of Attorney previously filed.

07/20/2010

____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) In connection with the vesting and delivery of restricted stock, and pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on August 26, 2009, shares were sold and the net proceeds were used to pay required withholding taxes.
The price reported in Column 4 is a weighted average price. These shares were sold at prices ranging from \$4.15 to \$4.17 inclusive. The reporting person undertakes to provide Cardiovascular Systems, Inc., any security holder of Cardiovascular Systems, Inc. or the staff of the Securities and Exchange Commission, upon request, full information regarding the number of shares sold at each separate price within the range set forth in this footnote.
- (2) Includes 2,552 shares acquired through the Issuer's Employee Stock Purchase Plan on June 30, 2010.
- (3) Fully exercisable.
- (4) Exercisable: 7,549 on 8/7/08 and 7,548 on 8/7/09 and 8/7/10.
- (5) Exercisable: 16,175 on 2/25/10 and 2/25/11.
- (6) Exercisable: 5,823 on 3/2/10 and 3/2/11.

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.