Thatcher Robert J Form 4 July 21, 2010

FORM 4

OMB APPROVAL UNITED STATES SECURITIES AND EXCHANGE COMMISSION **OMB**

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Check this box

if no longer subject to Section 16. Form 4 or

Form 5 obligations

may continue. See Instruction

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF **SECURITIES**

Washington, D.C. 20549

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

1(b).

(Print or Type Responses)

1. Name and Address of Reporting Person * Thatcher Robert J			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)	3. Date of Earliest Transaction	(Check all applicable)		
651 CAMPU	JS DRIVE		(Month/Day/Year) 07/20/2010	Director 10% Owner _X_ Officer (give title Other (specify below) Executive VP		
	(Street)		4. If Amendment, Date Original Filed(Month/Day/Year)	6. Individual or Joint/Group Filing(Check Applicable Line) _X_ Form filed by One Reporting Person		
ST. PAUL, MN 55112				Form filed by More than One Reporting Person		
(City)	(State)	(Zip)	Table I - Non-Derivative Securities Acc	quired, Disposed of, or Beneficially Owned		

(City)	(State)	Tabl	le I - Non-I	Derivative	Secu	rities Acqu	ired, Disposed of	, or Beneficiall	y Owned
1.Title of Security (Instr. 3)	2. Transaction Date 2A. Deemed (Month/Day/Year) Execution Date any (Month/Day/Y		3. 4. Securities Acquired Transaction(A) or Disposed of (D) Code (Instr. 3, 4 and 5) (Instr. 8)			5. Amount of 6. Securities Ownership Beneficially Form: Direct Owned (D) or Following Indirect (I) Reported (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)		
C			Code V	Amount	(A) or (D)	Price	Transaction(s) (Instr. 3 and 4)	(msu. 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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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. Transacti Code (Instr. 8)	5. orNumber of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)	8	te	7. Title and A Underlying S (Instr. 3 and	Securities	8. Pri Deriv Secur (Instr
				Code V	(A) (D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares	
Stock Option (right to buy)	\$ 12.37					<u>(4)</u>	10/16/2015	Common Stock	64,700	
Stock Option (right to buy)	\$ 8.83					<u>(4)</u>	12/18/2016	Common Stock	7,764	
Stock Option (right to buy)	\$ 8.83					<u>(4)</u>	04/17/2017	Common Stock	29,762	
Stock Option (right to buy)	\$ 7.9					<u>(5)</u>	08/06/2017	Common Stock	22,645	
Stock Option (right to buy)	\$ 12.15					<u>(6)</u>	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					<u>(7)</u>	03/01/2019	Common Stock	11,646	

Reporting Owners

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

Reporting Owners 2

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.
- (3) Includes 2,552 shares acquired through the Issuer's Employee Stock Purchase Plan on June 30, 2010.
- (4) Fully exercisable.
- (5) Exercisable: 7,549 on 8/7/08 and 7,548 on 8/7/09 and 8/7/10.
- (6) Exercisable: 16,175 on 2/25/10 and 2/25/11.
- (7) 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.

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