

Flaherty James E  
 Form 4  
 April 23, 2010

**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 \*  
 Flaherty James E

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)  
 04/21/2010

\_\_\_\_ Director \_\_\_\_\_ 10% Owner  
 Officer (give title below) \_\_\_\_\_ Other (specify below)  
 Chief Administrative Officer

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 Ownership (Instr. 4)
Common Stock				(A) or (D) Price	74,874 <sup>(1)</sup>	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)	Amount or Number of Shares
				Code V (A) (D)		Date Exercisable	Expiration Date	Title	
Stock Option (right to buy)	\$ 12.37	04/21/2010		D <sup>(2)</sup>	16,175	<u>(2)</u>	06/30/2010	Common Stock	16,175
Stock Option (right to buy)	\$ 12.37	04/21/2010		D <sup>(3)</sup>	7,764	<u>(3)</u>	11/07/2010	Common Stock	7,764
Stock Option (right to buy)	\$ 8.83					<u>(5)</u>	12/18/2016	Common Stock	9,380
Stock Option (right to buy)	\$ 8.83					<u>(6)</u>	04/17/2017	Common Stock	25,230
Stock Option (right to buy)	\$ 7.9					<u>(7)</u>	08/06/2017	Common Stock	22,640
Stock Option (right to buy)	\$ 12.15					<u>(8)</u>	12/11/2017	Common Stock	32,350
Stock Option (right to buy)	\$ 8.75					<u>(9)</u>	03/02/2019	Common Stock	10,990
Stock Option (right to buy)	\$ 9.28	04/21/2010		A	4,852	<u>(4)</u>	11/15/2014	Common Stock	4,852
Stock Option (right to buy)	\$ 12.37	04/21/2010		A <sup>(2)</sup>	16,175	<u>(2)</u>	06/30/2015	Common Stock	16,175
	\$ 12.37	04/21/2010		A <sup>(3)</sup>	7,764	<u>(3)</u>	11/07/2015		7,764

Stock  
Option  
(right to  
buy)

Common  
Stock

## Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
Flaherty James E 651 CAMPUS DRIVE ST. PAUL, MN 55112			Chief Administrative Officer	

## Signatures

/s/ John R. Remakel as Attorney-in-Fact for James E. Flaherty pursuant to Power of Attorney previously filed.

04/23/2010

\_\_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) Includes 2,002 shares acquired through the Issuer's Employee Stock Purchase Plan on December 31, 2009.
- (2) The two reported transactions involved an amendment of an outstanding option, resulting in the deemed cancellation of the "old" option and the grant of a replacement option. The option was originally granted on July 1, 2005 and is fully exercisable.
- (3) The two reported transactions involved an amendment of an outstanding option, resulting in the deemed cancellation of the "old" option and the grant of a replacement option. The option was originally granted on November 8, 2005 and is fully exercisable.
- (4) Fully exercisable.
- (5) Exercisable: 3,127 on 12/19/07, 12/19/08 and 12/19/09.
- (6) Exercisable: 8,411 on 4/18/08, 4/18/09 and 4/18/10.
- (7) Exercisable: 7,549 on 8/7/08 and 7,548 on 8/7/09 and 8/7/10.
- (8) Exercisable: 16,175 on 2/25/10 and 2/25/11.
- (9) Exercisable: 5,500 on 3/2/10 and 5,499 on 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.

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