Martin David Form 4 April 23, 2010

FORM 4

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

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF

SECURITIES

OMB Number:

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OMB APPROVAL

if no longer subject to Section 16. Form 4 or Form 5 obligations

may continue.

See Instruction

Check this box

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)

Common

Stock

1(b).

1. Name and Address of Reporting Person * 5. Relationship of Reporting Person(s) to 2. Issuer Name and Ticker or Trading Martin David Issuer Symbol Cardiovascular Systems Inc [CSII] (Check all applicable) (First) (Middle) (Last) 3. Date of Earliest Transaction (Month/Day/Year) _X__ Director 10% Owner X_ Officer (give title Other (specify 651 CAMPUS DRIVE 04/21/2010 below) below) President and CEO (Street) 4. If Amendment, Date Original 6. Individual or Joint/Group Filing(Check Filed(Month/Day/Year) Applicable Line) _X_ Form filed by One Reporting Person Form filed by More than One Reporting ST. PAUL, MN 55112 Person (City) (State) (Zip) Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned 1.Title of 2. Transaction Date 2A. Deemed 3. 4. Securities 5. Amount of 6. Ownership 7. Nature of Security (Month/Day/Year) Execution Date, if TransactionAcquired (A) or Securities Form: Direct Indirect (Instr. 3) Code Disposed of (D) Beneficially (D) or Beneficial (Instr. 3, 4 and 5) Indirect (I) Ownership (Month/Day/Year) (Instr. 8) Owned

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

Persons who respond to the collection of SEC 1474 information contained in this form are not (9-02)required to respond unless the form displays a currently valid OMB control number.

Following

Reported

Transaction(s)

(Instr. 3 and 4)

168,311 (1)

(A)

or

(D)

Price

(Instr. 4)

D

(Instr. 4)

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

Code V Amount

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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. Transactio Code (Instr. 8)	5. Number of iorDerivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amou Underlying Secur (Instr. 3 and 4)	
	Security			Code V	(A)	(D)	Date Exercisable	Expiration Date	Title	Am Nur Sha
Stock Option (right to buy)	\$ 8.83	04/21/2010		D(2)		71,170	(2)	07/16/2011	Common Stock	71
Stock Option (right to buy)	\$ 8.83	04/21/2010		A(2)	71,170		(2)	07/16/2016	Common Stock	71
Stock Option (right to buy)	\$ 8.83	04/21/2010		D(3)		38,820	(3)	08/14/2011	Common Stock	38
Stock Option (right to buy)	\$ 8.83	04/21/2010		A(3)	38,820		(3)	08/14/2016	Common Stock	38
Stock Option (right to buy)	\$ 8.83	04/21/2010		D <u>(4)</u>		349,380	<u>(4)</u>	02/14/2012	Common Stock	34
Stock Option (right to buy)	\$ 8.83	04/21/2010		A <u>(4)</u>	349,380		<u>(4)</u>	02/14/2017	Common Stock	34
Stock Option (right to buy)	\$ 7.9						<u>(5)</u>	06/11/2017	Common Stock	90
Stock Option (right to buy)	\$ 12.15						<u>(6)</u>	12/11/2017	Common Stock	24
Stock Option (right to buy)	\$ 8.75						<u>(7)</u>	03/01/2019	Common Stock	32

Reporting Owners

Reporting Owner Name / Address	Relationships						
	Director	10% Owner	Officer	Other			
Martin David							
651 CAMPUS DRIVE	X		President and CEO				
ST. PAUL, MN 55112							

Signatures

/s/ John R. Remakel as Attorney-in-Fact for David L. Martin 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 6,007 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 17, 2006 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 August 15, 2006 and is fully exercisable.
- (4) 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 February 15, 2007 and is fully exercisable.
- (5) Exercisable: 30,194 on 6/12/08 and 30,193 on 6/12/09 and 6/12/10.
- (6) Exercisable: 121,313 on 2/25/10 and 121,312 on 2/25/11.
- (7) Exercisable: 16,175 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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