Thatcher Robert J
Form 4
February 25, 2009

FORM 4

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

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

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).

(Print or Type Responses)

1. Name and Address of Reporting Person *
Thatcher Robert J

(Last) (First) (Middle)

651 CAMPUS DRIVE

(Street)

ST. PAUL, MN 55112

(City) (State) (Zip)

2. Issuer Name **and** Ticker or Trading Symbol
CARDIOVASCULAR SYSTEMS INC [NONE]

3. Date of Earliest Transaction (Month/Day/Year)
02/25/2009

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

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

_____ Director _____ 10% Owner
__X__ Officer (give title below) __X__ Other (specify below)
Executive VP / Mbr of 13(d) grp owng >10%

6. Individual or Joint/Group Filing(Check Applicable Line)
_X_ 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)
			Code	V	Amount	(A) or (D)	Price			

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)

1. Title of Derivative Security	2. Conversion or Exercise	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any	4. Transaction Code	5. Number of Derivative Securities	6. Date Exercisable and Expiration Date (Month/Day/Year)	7. Title and Amount of Underlying Securities (Instr. 3 and 4)

(Instr. 3)	Price of Derivative Security		(Month/Day/Year)	(Instr. 8)	Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)						
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares
Series A-1 Conv Preferred Stock	(1)							(1)	(1)	Common Stock	12,378
Stock Option (right to buy)	$ 8							(2)	10/16/2010	Common Stock	100,000
Stock Option (right to buy)	$ 5.71							(3)	12/18/2016	Common Stock	12,000
Stock Option (right to buy)	$ 5.71							(4)	04/17/2017	Common Stock	46,000
Stock Option (right to buy)	$ 5.11							(5)	08/06/2017	Common Stock	35,000
Stock Option (right to buy)	$ 7.86							(6)	12/11/2017	Common Stock	50,000
Warrant	$ 5.71	02/25/2009		J(7)		4,707		02/25/2009	02/24/2014	Common Stock	4,707

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
Thatcher Robert J 651 CAMPUS DRIVE ST. PAUL, MN 55112			Executive VP	Mbr of 13(d) grp owng >10%

Signatures

/s/ Carlye S. Landin as Attorney-in-Fact for Robert J. Thatcher pursuant to Power of Attorney previously filed. 02/25/2009

**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) Each share of Series A-1 convertible preferred stock is convertible at any time, at the holder's election, into 1.03 shares of common stock and has no expiration date.

(2) Exercisable: 33,333 on 10/17/2006 and 10/17/2007 and 33,334 on 10/17/2008.

(3) Exercisable: 4,000 on 12/19/2007, 12/19/2008 and 12/19/2009.

(4) Exercisable: 15,333 on 4/18/2008 and 4/18/2009 and 15,334 on 4/18/2010.

(5) Exercisable: 11,667 on 8/7/2008 and 8/7/2009 and 11,666 on 8/7/2010.

(6) Exercisable: 25,000 on the first anniversary of the closing of the Company's merger with Replidyne, Inc. and 25,000 on the second anniversary of the merger.

(7) Holders of approximately 68% of the outstanding preferred stock entered into an agreement with the Company whereby effective immediately prior to the effective time of the merger of the Company with Replidyne, Inc., all preferred stock will convert into shares of common stock. The warrants were issued pro rata to each preferred shareholder, based on the percentage of preferred stock held, in consideration for entering into such conversion agreement.

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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