

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

OMB APPROVAL	
OMB Number:	3235-0287
Estimated average burden hours per response:	0.5

1. Name and Address of Reporting Person* <u>HARTNETT JOSEPH M</u> (Last) (First) (Middle) <u>3 WHITTEMORE TERRACE</u> (Street) <u>ANDOVER MA 01810</u> (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>MERCURY COMPUTER SYSTEMS INC [MRCY]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <p style="text-align: right;"><u>VP, Finance</u></p>
	3. Date of Earliest Transaction (Month/Day/Year) <u>09/11/2006</u>	
	4. If Amendment, Date of Original Filed (Month/Day/Year)	

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			
<u>Common Stock</u>	<u>09/11/2006</u>		<u>A</u>		<u>3,750</u>	<u>A</u>	<u>\$0.00⁽¹⁾</u>	<u>10,276</u>	<u>D</u>	

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

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 Securities Underlying Derivative Security (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)	
				Code	V	(A)	(D)	Date Exercisable	Expiration Date						Title
<u>Employee Stock Option (right to buy)</u>	<u>\$23.46</u>	<u>09/11/2006</u>		<u>D</u>		<u>15,000</u>		<u>07/28/2005⁽²⁾</u>	<u>07/28/2014</u>	<u>Common</u>	<u>15,000</u>	<u>\$0.00⁽³⁾</u>	<u>0</u>	<u>D</u>	

Explanation of Responses:

- On September 11, 2006, Mercury Computer Systems, Inc., cancelled, pursuant to its option exchange program, an option granted to the reporting person on July 28, 2004. In exchange for the option, the reporting person received a restricted stock award covering 3,750 shares which vests as to two-thirds of the covered shares on September 11, 2008 and one-third of the covered shares on September 11, 2009.
- The cancelled option provide for vesting in four equal installments commencing on July 28, 2005.
- Field N/A to this transaction but was completed to allow for electronic filing only.

Craig Barrows, Attorney-in-fact 09/12/2006

** Signature of Reporting Person Date

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

* 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).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.