U.S. SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 3

INITIAL STATEMENT OF 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(f) of the Investment Company Act of 1940

1. Name and Address of Reporting Person
   Barry, Donald
   (Last)               (First)                 (Middle)
   125 Kenney Lane
   (Street)
   Concord, MA   01742
   (City)               (State)                 (Zip)

2. Date of Event Requiring Statement (Month/Day/Year)
   1/29/98

3. IRS or Social Security Number of Reporting Person (Voluntary)

4. Issuer Name and Ticker or Trading Symbol
   Mercury Computer Systems, Inc.   MRCY

5 Relationship of Reporting Person to Issuer
   (Check all applicable)
   [ ]   Director                             [ ]   10% Owner
   [ X ]   Officer (give title below)           [ ]   Other (specify below)
   Director of the Medical Business Group

6. If Amendment, Date of Original (Month/Year)

Table I -- Non-Derivative Securities Beneficially Owned

<table>
<thead>
<tr>
<th>1. Title of Security (Instr. 4)</th>
<th>2. Amount of Securities Beneficially Owned (Instr. 4)</th>
<th>Direct (D) or Indirect (I)</th>
<th>4. Nature of Indirect Beneficial Ownership (Instr. 5)</th>
</tr>
</thead>
</table>
Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

(Print or Type Responses)

**FORM 3 (continued)**

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

<table>
<thead>
<tr>
<th>1. Title of Security (Instr. 4)</th>
<th>2. Date Exercisable and Expiration Date (Month/Day/Year)</th>
<th>3. Title and Amount of Securities Underlying Derivative Security (Instr. 4)</th>
<th>4. Conversion or Exercise Price of Derivative Security</th>
<th>5. Ownership of Securities: (D) Direct (I) Indirect</th>
<th>7. Nature of Beneficial Ownership (Instr. 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock Option</td>
<td>* 7/2/02</td>
<td>Common</td>
<td>10,000</td>
<td>3.50</td>
<td>D</td>
</tr>
<tr>
<td>Stock Option</td>
<td>(1) 7/30/06</td>
<td>Common</td>
<td>1,000</td>
<td>4.00</td>
<td>D</td>
</tr>
<tr>
<td>Stock Option</td>
<td>(2) 7/30/06</td>
<td>Common</td>
<td>500</td>
<td>4.00</td>
<td>D</td>
</tr>
<tr>
<td>Stock Option</td>
<td>(3) 9/19/06</td>
<td>Common</td>
<td>500</td>
<td>4.00</td>
<td>D</td>
</tr>
<tr>
<td>Stock Option</td>
<td>(4) 10/20/07</td>
<td>Common</td>
<td>10,000</td>
<td>8.00</td>
<td>D</td>
</tr>
</tbody>
</table>

Explanation of Responses:

* fully exercisable

1) 40% of the option is exercisable. The remainder will vest in equal increments on July 30 of each 1998, 1999, and 2000

2) The option to purchase 140 shares is vested. The option to purchase the remaining 360 shares will vest on December 19, 1998

3) 50% of the option is exercisable. 50% will vest on August 1, 199.

4) The option to purchase 2,500 shares will vest on October 20, of each 1998, 1999, 2000 and 2001

/s/Donald Barry  1/29/98

**Signature of Reporting Person** Date

**Intentional misstatements or omissions of facts constitute Federal Criminal Violations.**


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