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

SCHEDULE 13G

UNDER THE SECURITIES EXCHANGE ACT OF 1934

(AMENDMENT NO. 1)*

Mercury Computer Systems, Inc.
- --
(Name of Issuer)

Common Stock
.
- --
(Title of Class of Securities)

589378108
- --
(CUSIP Number)

Check the following box if a fee is being paid with this statement [ ]. (A fee
is not required only if the filing person: (1) has a previous statement on file
reporting beneficial ownership of more than five percent of the class of
securities described in Item 1; and (2) has filed no amendment subsequent
thereto reporting beneficial ownership of five percent or less of such class.)
(See Rule 13d-7).

*The remainder of this cover page shall be filled out for a reporting person's
initial filing on this form with respect to the subject class of securities, and
for any subsequent amendment containing information which would alter the
disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed
to be "filed" for the purpose of Section 18 of the Securities Exchange Act of
1934 ("Act") or otherwise subject to the liabilities of that section of the Act
but shall be subject to all other provisions of the Act (however, see the
Notes).

CONFORMED COPY TO FILING MADE ON FEBRUARY 2, 2000

SEC 1745 (2-95)

- ------------------------------   -------------------------
CUSIP NO. 589378108   PAGE _____ OF_____ PAGES
- ------------------------------   -------------------------

1.   NAME OF REPORTING PERSON
      S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON

         PETER B. CANNELL & CO., INC.
         13-3346990
- --
2.   CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*   (a) [ ]
                                                                 (b) [ ]
- --
3.   SEC USE ONLY

- --
4.   CITIZENSHIP OR PLACE OF ORGANIZATION

         DELAWARE
- --
      NUMBER OF   5. SOLE VOTING POWER   1,384,860
       SHARES   ---
     BENEFICIALLY   6. SHARED VOTING POWER
      OWNED BY   ---
        EACH   7. SOLE DISPOSITIVE POWER   1,384,860
      REPORTING   ---
     PERSON WITH   8. SHARED DISPOSITIVE POWER
- --
9.   AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

      1,384,860 WHICH CONSISTS SOLELY OF COMMON STOCK
- --
10.   CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9)
      EXCLUDES CERTAIN SHARES*   [ ]

- --
11.   PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

         6.64%
- --
12.   TYPE OF REPORTING PERSON*

         IA
- --

                      *SEE INSTRUCTION BEFORE FILLING OUT!

```
Item 1(a).          Name of Issuer:

                             Mercury Computer Systems, Inc.

Item 1(b).          Address of Issuer's Principal Executive Offices:

                             199 Riverneck Road
                             Chelmsford, MA  01824

Item 2(a).          Name of Person Filing:

                             Peter B. Cannell & Co., Inc.

Item 2(b).          Address of Principal Business Office:

                             645 Madison Avenue, New York, NY  10022

Item 2(c).          Citizenship:

                             Delaware Corporation

Item 2(d).          Title of Class of Securities:

                             Common Stock

Item 2(e).          CUSIP No. 589378108

Item 3.             Person filing statement is:

      (e) [X] Investment Adviser registered under Section 203 of the
              Investment Advisers Act of 1940.

Item 4.             Ownership:

      (a)     Amount Beneficially Owned:  1,384,860

      (b)     Percent of Class:  6.64%

      (c)     Number of shares as to which such person has sole power to
              dispose or to direct the disposition of: 1,384,860

Item 5.             Ownership of Five Percent or less:  N/A

Item 6.             Ownership of More than Five Percent:  N/A
```

Item 7.   Identification and Classification of the Subsidiary: N/A.

Item 8.   Identification and Classification of Members of Group:
                 N/A.

Item 9.   Notice of Dissolution: N/A.

Item 10.   Certification.

        By signing below I certify that, to the best of my knowledge and belief,
the securities referred to above were acquired in the ordinary course of
business and were not acquired for the purpose of and do not have the effect of
changing or influencing the control of the issuer of such securities and were
not acquired in connection with or as a participant in any transaction having
such purposes or effect.

                              SIGNATURE

        After reasonable inquiry and to the best of my knowledge and belief, I
certify that the information set forth in this statement is true, complete and
correct.

                              February 2, 2000

                                   (Date)

                              Patricia Kogan

                               (Signature)

                              Patricia Kogan, Vice President

                                    (Name/Title)