

SCHEDULE 14A
(RULE 14a-101)

INFORMATION REQUIRED IN PROXY STATEMENT
SCHEDULE 14A INFORMATION

PROXY STATEMENT PURSUANT TO SECTION 14(a) OF THE SECURITIES
EXCHANGE ACT OF 1934 (AMENDMENT NO.)

FILED BY THE REGISTRANT FILED BY A PARTY OTHER THAN THE REGISTRANT

Check the appropriate box:

- Preliminary Proxy Statement
 Definitive Proxy Statement
 Definitive Additional Materials
 Soliciting Material Pursuant to sec.240.14a-11(c) or sec.240.14a-12
 Confidential, for Use of the Commission Only
(as permitted by Rule 14a-6(e)(2))

MERCURY COMPUTER SYSTEMS, INC.
(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement)

PAYMENT OF FILING FEE (CHECK THE APPROPRIATE BOX):

- No fee required.
 Fee computed on table below per Exchange Act Rules 14a-6(i)(4) and 0-11.

- 1) Title of each class of securities to which transaction applies:
- 2) Aggregate number of securities to which transaction applies:
- 3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (Set forth the amount on which the filing fee is calculated and state how it was determined):
- 4) Proposed maximum aggregate value of transaction:
- 5) Total fee paid:

Fee paid previously with preliminary materials.

Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

- 1) Amount Previously Paid:
- 2) Form, Schedule or Registration Statement No.:
- 3) Filing Party:
- 4) Date Filed:

MERCURY COMPUTER SYSTEMS, INC.
199 RIVERNECK ROAD
CHELMSFORD, MA 01824
(978) 256-1300

October 5, 2001

Dear Stockholder:

As you know, Mercury Computer Systems, Inc. achieved outstanding results in fiscal 2001, reporting both record revenues and record net income. In fact, your company has recorded ten consecutive years of profitability and has consistently turned in outstanding financial performance. The stock performance chart included in the Proxy Statement shows that Mercury's stock has outperformed, by a wide margin, the Russell 2000 Index over the last three years ending June 30, 2001, providing an average compound annual total return of 89.7 percent. Your management team is quite proud of what we have accomplished for our customers and our stockholders.

In order to continue to deliver the outstanding results that you expect from Mercury, we need your help to ensure that, in the future, the best and brightest individuals will choose Mercury as their employer. Hiring, retaining, and motivating high-quality people continues to be one of the biggest challenges we face. To increase our potential market size, maintain our technology leadership, and ensure the future success of the company, we must be able to attract and retain the most highly talented and creative people. To do this, Mercury has to compete by either substantially increasing the cash compensation paid to associates or we must continue on our proven successful path of creating associate stockholders through the granting of stock options. Unlike the immediate effect on Earnings Per Share ("EPS") caused by increases in cash compensation, grants of stock options have no effect on EPS until our stock increases in value beyond the option exercise price. For income statement purposes, there is no compensation expense for associate stock options that are granted with an exercise price equal to the market value of the company's stock.

Mercury has consistently outperformed our peers, with forty-two consecutive quarters of profitability. We made this happen with your support, and we are working aggressively to continue to grow the company. But we can only be successful in our endeavors if you, the stockholders, allow me to build and motivate the Mercury team by continuing to grant them stock options.

What about the dilutive effect of these options on EPS? Well, diluted EPS is calculated by dividing the company's net income by the number of shares outstanding, including the effect of options. If there are more shares and options outstanding, and if the earnings remain the same, then, obviously, EPS is diluted. But, at Mercury, we have successfully used stock options to motivate our associates to increase earnings. So any slight increase in the number of shares outstanding due to stock options has, in the past, been more than compensated for by an increase in earnings. With the current market uncertainty, it is even more important that we continue to motivate our associates using stock options to improve our overall operating effectiveness and to maximize our earnings potential.

In the past, when Mercury needed additional options we went to the stockholders and asked them to approve additional shares, and in the past you have agreed. Your management has been most grateful for your continued support. However, the process of contacting stockholders is both time-consuming and expensive. In response to this increasing burden, this year we are proposing an amendment (Proposal 3) to our 1997 Stock Option Plan. With this amendment, effective July 1, 2002 and each July 1 thereafter during the term of the 1997 Stock Option Plan, the maximum number of shares of Common Stock available for grants of stock

options made after such July 1 under the 1997 Stock Option Plan shall be increased automatically by an amount equal to 4.0% of the total number of issued and outstanding shares of Common Stock (including shares held in treasury) as of the close of business on June 30 of the preceding year, such additional amount being subject to downward adjustment by the Board of Directors. By approving this amendment, you will help the Company avoid the expensive and time-consuming task of seeking stockholder approval for this routine matter. I am requesting your support and vote in favor of this amendment (Proposal 3) that will provide Mercury with the tools to attract and retain the best and the brightest associates.

I am asking you to separately approve two additional proposals. Proposal 2 is an amendment to the Corporation's 1997 Stock Option Plan that authorizes the Corporation to reserve an additional 1 million shares for issuance upon the exercise of stock options under the 1997 Plan. You will note that Proposal 3 will not increase shares until July 2002. Proposal 4 is an amendment to the Corporation's Articles of Organization that would increase the number of shares of Common Stock that the Corporation has the authority to issue from 40,000,000 shares to 65,000,000 shares.

Please read the enclosed description of each of these proposals that have been recommended, unanimously, for approval by the Board of Directors.

As a significant stockholder of Mercury, you can be sure that I am strongly motivated to protect stockholders' interests. My goal is the same as yours . . . to increase stockholder value. Please help to ensure our continued success by voting YES on each of these important proposals either in person at the upcoming stockholder meeting (10:00 am on November 15, 2001 in the d'Arbeloff Suite, Museum of Science, Boston, Mass.) or by mailing in the enclosed proxy card.

Thank you for your support and commitment to Mercury Computer Systems.

If you have any further questions concerning the Meeting or any of the proposals, please feel free to contact the Corporation at (978) 256-1300.

Sincerely yours,

/s/ James R. Bertelli
JAMES R. BERTELLI
President and Chief Executive Officer

MERCURY COMPUTER SYSTEMS, INC.

NOTICE OF SPECIAL MEETING OF STOCKHOLDERS IN LIEU OF THE
2001 ANNUAL MEETING OF STOCKHOLDERS

TO BE HELD NOVEMBER 15, 2001

To the Stockholders:

A Special Meeting of the Stockholders of MERCURY COMPUTER SYSTEMS, INC. in lieu of the 2001 Annual Meeting of Stockholders will be held on Thursday, November 15, 2001 at 10:00 a.m. at The Boston Museum of Science, Science Park, Boston, Massachusetts, for the following purposes:

1. To elect Dr. Albert P. Belle Isle as a Director for a term of three years, as more fully described in the accompanying Proxy Statement.
2. To elect Mr. James A. Dwyer as a Director for a term of three years, as more fully described in the accompanying Proxy Statement.
3. To elect Mr. Melvin Sallen as a Director for a term of three years, as more fully described in the accompanying Proxy Statement.
4. To consider and act upon a proposal to amend the Corporation's 1997 Stock Option Plan to increase the number of shares of Common Stock reserved for issuance thereunder by 1,000,000 shares, from 4,650,000 shares to 5,650,000 shares.
5. To consider and act upon a proposal to amend the Corporation's 1997 Stock Option Plan to increase automatically on an annual basis the number of shares of Common Stock reserved for issuance thereunder, as more fully described in the enclosed Proxy Statement.
6. To consider and act upon a proposal to amend the Articles of Organization of the Corporation to increase the number of shares of Common Stock which the Corporation has the authority to issue from 40,000,000 shares to 65,000,000 shares.
7. To consider and act upon any other business which may properly come before the meeting.

The Board of Directors has fixed the close of business on September 28, 2001, as the record date for the meeting. All stockholders of record on that date are entitled to notice of and to vote at the meeting.

PLEASE COMPLETE AND RETURN THE ENCLOSED PROXY IN THE ENVELOPE PROVIDED WHETHER OR NOT YOU INTEND TO BE PRESENT AT THE MEETING IN PERSON.

By order of the Board of Directors

/s/ Anthony J. Medaglia, Jr.
ANTHONY J. MEDAGLIA, JR.Chelmsford, Massachusetts
October 5, 2001

MERCURY COMPUTER SYSTEMS, INC.

PROXY STATEMENT

This Proxy Statement is furnished in connection with the solicitation of proxies by the Board of Directors of Mercury Computer Systems, Inc. (the "Corporation") for use at the Special Meeting of Stockholders in lieu of the 2001 Annual Meeting of Stockholders to be held on Thursday, November 15, 2001, at the time and place set forth in the notice of the meeting, and at any adjournments thereof (the "Meeting"). The approximate date on which this Proxy Statement and form of proxy are first being sent to stockholders is October 5, 2001.

VOTING AND REVOCABILITY OF PROXIES

If the enclosed proxy is properly executed and is received prior to the Meeting, it will be voted in the manner directed by the stockholder. If no instructions are specified with respect to any particular matter to be acted upon, proxies will be voted for the election of Directors as set forth in this Proxy Statement and for the proposals set forth in the Notice of Meeting. Any person giving the enclosed form of proxy has the power to revoke it by voting in person at the Meeting, or by giving written notice of revocation to the Clerk of the Corporation any time before the proxy is exercised.

The holders of a majority in interest of all Common Stock issued, outstanding and entitled to vote are required to be present in person or to be represented by proxy at the Meeting in order to constitute a quorum for the transaction of business. The election of the nominees for Director will be decided by plurality vote. The proposal to amend the Articles of Organization to increase the number of authorized shares of Common Stock requires the affirmative vote of a majority of the shares of Common Stock outstanding and entitled to vote thereon. All other matters being submitted to stockholders requires the affirmative vote of a majority of voting shares present in person or represented by proxy at the Meeting (following the determination of a quorum). Both abstentions and broker "non-votes" are counted as present for the purposes of determining the existence of a quorum for the transaction of business. However, for purposes of determining the number of shares voting on a particular proposal, abstentions and broker "non-votes" are not counted as votes cast or shares voting.

The Corporation's principal executive offices are located at 199 Riverneck Road, Chelmsford, Massachusetts 01824, telephone number (978) 256-1300.

RECORD DATE AND VOTING SECURITIES

Only stockholders of record at the close of business on September 28, 2001 are entitled to notice of and to vote at the Meeting. On that date the Corporation had outstanding and entitled to vote 21,XXX,XXX shares of Common Stock, par value \$.01 per share. Each outstanding share of the Corporation's Common Stock entitles the record holder to one vote.

PROPOSAL TO ELECT CLASS I DIRECTORS

Pursuant to Massachusetts law, the Board of Directors is divided into three classes, with each class as nearly equal in number as possible. Presently, the Board of Directors consists of seven members, with Mr. James A. Dwyer, Dr. Albert Belle Isle and Mr. Melvin Sallen serving as Class I Directors; Dr. Gordon Baty and Mr. Sherman Mullin serving as Class II Directors; and Mr. James Bertelli and Mr. Russell K. Johnsen serving as Class III Directors. The terms of the Class I, Class II, and Class III Directors expire in 2001, 2002, and 2003, respectively. Following expiration of its respective current term, each class is then nominated for election for a subsequent three-year term.

It is proposed that the Class I nominees listed below, whose terms expire at this meeting, be elected to serve a term of three years and until their successors are duly elected and qualified or until they sooner die, resign or are removed.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE FOR THE ELECTION OF THE CLASS I NOMINEES LISTED BELOW. The persons named in the accompanying proxy will vote, unless authority is withheld, for the election of the Class I nominees named below. If such nominees should become unavailable for election, which is not anticipated, the persons named in the accompanying proxy will vote for such substitute as the Board of Directors may recommend. Messrs. Belle Isle, Dwyer and Sallen are not related to any Executive Officer of the Corporation or its subsidiaries.

YEAR FIRST ELECTED A POSITION WITH THE CORPORATION OR PRINCIPAL NAME OF NOMINEE AGE DIRECTOR OCCUPATION DURING PAST FIVE YEAR -----

 - NOMINATED FOR A TERM ENDING IN 2004: Dr. Albert P. Belle Isle..... 58 1986 Dr. Belle Isle is an independent investor in technology-based companies, was President of Custom Silicon, Inc., a semiconductor company, and has also served as a Vice President of Wang laboratories, Inc. and in various technical and business management positions during fifteen years with the General Electric Company.
 James A.

Dwyer.....
 64 2000 Mr. Dwyer is currently President of Wireless One Network, L.P., a former cellular operator in Florida, Previously, Mr. Dwyer was President of American Cellular Telephone Corp., and Attorney and Vice President, International Relations of Western Union International. Mr. Dwyer currently serves on the Board of Directors of the Cellular Telecommunications Industry Association, and was previously Chairman of its Executive Committee and Chairman of its Legislative and Regulatory Committee.
 Melvin

Sallen.....
 73 1990 Mr. Sallen served as Senior Vice President of Analog Devices, Inc. from 1966 through 1992. Since 1992, Mr. Sallen has served as President of Komon International, Inc., an international consulting company. Mr. Sallen is also a director of Tech On Line, Inc. and Copley Controls Corporation.

YEAR FIRST ELECTED A
POSITION WITH THE
CORPORATION OR PRINCIPAL
NAME OF NOMINEE AGE
DIRECTOR OCCUPATION DURING
PAST FIVE YEAR -----

----- SERVING A TERM
ENDING IN 2002: Dr. Gordon
B. Baty.....
62 1983 Dr. Baty has been a
partner of Zero Stage
Capital Co., Inc., a
venture capital firm, since
1986. Dr. Baty was the
founder and Chief Executive
Officer of Icon
Corporation, Context
Corporation, and Wormser
Engineering, Inc. Dr. Baty
is also a Director of nine
private companies. Sherman
N.

Mullin.....
65 1994 Mr. Mullin served
as President of Lockheed
Advanced Development Co., a
defense contractor, from
1990 through 1994. Mr.
Mullin currently serves as
an ad-hoc advisor to the
U.S. Air Force Scientific
Advisory Board. SERVING A
TERM ENDING IN 2003: James
R.

Bertelli.....
61 1981 Mr. Bertelli co-
founded the Corporation in
1981, and has served as the
Corporation's President,
Chief Executive Officer,
and a Director since that
time. Prior to founding the
Corporation, Mr. Bertelli
founded a manufacturer's
representative organization
after a brief period at
Analogic Corporation in
sales management positions.
Prior to that, Mr. Bertelli
served as a marketing
manager for Digital
Equipment Corporation's
telephone industry products
group. After a tour of duty
in the Army Signal Corps,
Mr. Bertelli began his
high-tech career with RCA
Corporation as a computer
systems analyst, and later
moved into computer sales
with RCA and Univac.
Russell K.

Johnsen.....
tbd 2001 Mr. Johnsen is
currently the Vice
President, Corporate
Business Development at
Analog Devices. Mr. Johnsen
has held various positions
at Analog Devices since
1993. Prior to his years at
Analog Devices, Mr. Johnsen
held positions at National
Semiconductor Corporation.

INFORMATION CONCERNING THE BOARD OF DIRECTORS

During fiscal year 2001, there were thirteen (13) meetings of the Board of Directors of the Corporation, two (2) meetings of the Audit Committee (see below) and thirteen (13) meetings of the Compensation Committee (see below). The Nominating Committee was established in August 2001, and hence did not meet during fiscal year 2001(see below). All of the Directors attended at least 75% of the aggregate of (i) the total number of meetings of the Board of Directors and (ii) the total number of meetings held by committees of the Board of Directors on which they served, except that Directors Berman and Dwyer attended 67% and 50% of such meetings, respectively. Each Director receives cash compensation in the amount of \$9,000 for the fiscal year, paid quarterly, plus an additional \$2,000 for each meeting attended, as well as reimbursement for reasonable expenses incurred in connection with attendance at Board and committee meetings. In addition, committee members and the committee chairman receive an annual retainer of \$1,000 and \$1,750, respectively, paid quarterly, as well as an additional \$300 for attending a meeting not held on the same day as a meeting of the Board of Directors. The cash compensation paid to Directors in their capacity as such during fiscal year 2001 was as follows:

DIRECTOR CASH COMPENSATION -----	
-- Gordon B.	
Baty.....	\$29,850
Albert P. Belle	
Isle.....	\$29,100
R. Schorr	
Berman.....	\$14,800
James R.	
Bertelli.....	\$ 0
James A.	
Dwyer.....	\$17,500
Russell K.	
Johnsen.....	\$11,300
Sherman N.	
Mullin.....	\$28,800
Melvin	
Sallen.....	\$29,550
Michael I.	
Schneider.....	\$13,800

In addition to cash compensation, Directors are also granted options pursuant to the Mercury Computer Systems, Inc. 1997 Stock Option Plan

The Board of Directors has a standing Audit Committee, Compensation Committee and Nominating Committee. The members of the Audit Committee are Dr. Baty, Dr. Belle Isle and Mr. Johnsen. The Audit Committee reviews the scope of the Corporation's engagement of its independent public accountant and their reports. The Audit Committee also meets with the financial staff of the Corporation to review accounting procedures and reports. The Compensation Committee was comprised of Messrs. Mullin, Sallen and Schneider until September 2001. Mr. Schneider served as a member of the Compensation Committee until his death on September 6, 2001. The Compensation Committee is authorized to review and make recommendations to the Board of Directors regarding the salaries and bonuses to be paid executive officers and to administer the Corporation's various stock option and stock purchase plans. The Nominating Committee was established in August 2001 to recommend nominees to the Board of Directors, and has recommended the nominees for election at the Meeting. The members of the Nominating Committee are Dr. Baty, Dr. Belle Isle and Mr. Bertelli. The Nominating Committee will consider nominees recommended by stockholders, though no formal procedures are in place for such process.

PROPOSAL TO INCREASE THE SHARES RESERVED FOR ISSUANCE UNDER THE MERCURY COMPUTER SYSTEMS, INC. 1997 STOCK OPTION PLAN TO 5,650,000 SHARES

There will be presented at the Meeting a proposal to approve an amendment to the Corporation's 1997 Stock Option Plan (the "1997 Stock Option Plan") which amendment was approved by the Board of Directors on August 21, 2001, whereby the number of shares of Common Stock reserved for issuance under the 1997 Stock Option Plan was increased from 4,650,000 shares to 5,650,000 shares. As of August 31, 2001, options for the purchase of 2,741,950 shares of Common Stock were outstanding under the 1997 Stock Option Plan.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE FOR THE PROPOSED INCREASE IN SHARES OF COMMON STOCK RESERVED FOR ISSUANCE UNDER THE 1997 STOCK OPTION PLAN TO 5,650,000 SHARES.

PROPOSAL TO INCREASE AUTOMATICALLY ON AN ANNUAL BASIS THE SHARES RESERVED FOR ISSUANCE UNDER THE MERCURY COMPUTER SYSTEMS, INC. 1997 STOCK OPTION PLAN

There will be presented at the Meeting a proposal to approve an amendment to the 1997 Stock Option Plan, which amendment was approved by the Board of Directors on August 21, 2001, whereby the number of shares of Common Stock reserved for issuance under the 1997 Stock Option Plan would increase automatically on an annual basis. Effective July 1, 2002 and each July 1 thereafter during the term of the 1997 Stock Option Plan, the maximum number of shares of Common Stock available for grants of stock options made after such July 1 under the 1997 Stock Option Plan shall be increased automatically by an amount equal to 4.0% of the total number of issued and outstanding shares of Common Stock (including shares held in treasury) as of the close of business on June 30 of the preceding year, such additional amount being subject to downward adjustment by the Board of Directors. Notwithstanding the foregoing, the maximum cumulative number of shares of Common Stock available for grants of Incentive Stock Options under the 1997 Stock Option Plan shall be 5,650,000 shares.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE FOR THE PROPOSAL TO INCREASE AUTOMATICALLY ON AN ANNUAL BASIS THE NUMBER OF SHARES OF COMMON STOCK RESERVED FOR ISSUANCE UNDER THE 1997 STOCK OPTION PLAN.

MERCURY COMPUTER SYSTEMS, INC. 1997 STOCK OPTION PLAN

The 1997 Stock Option Plan (the "Plan") provides for the granting of both incentive stock options meeting the requirements of Section 422 of the Internal Revenue Code of 1986, as amended (the "Code") and non-qualified options which are not intended to meet the requirements of the Code.

The Plan is intended to encourage ownership of the stock of the Corporation by employees of, and other key individuals engaged to provide services to, the Corporation and its subsidiaries, including directors, to induce qualified personnel to enter and remain in the employ of, or otherwise provide services to, the Corporation or its subsidiaries and to provide additional incentive for optionees to promote the success of its business. The Plan is administered by a Committee (the "Committee"), consisting of two or more members of the Corporation's Board of Directors, each of whom is a disinterested person as defined in Rule 16b-3, promulgated under the Securities Exchange Act of 1934 (the "1934 Act"). The members of the Committee are appointed by the Board of Directors and the Board may from time to time appoint a member or members of the Committee in substitution for or in addition to the member or members then in office, and may fill vacancies on the Committee, however caused. The present members of the Committee are Melvin J. Sallen,

Chairman, and Sherman N. Mullin, c/o Mercury Computer Systems, Inc., 199 Riverneck Road, Chelmsford, Massachusetts, 01824.

The amendment increased the number of shares of Common Stock reserved for issuance under the Plan from 4,650,000 shares to 5,650,000 shares. The maximum number of shares of the Corporation's Common Stock for which options may be granted under the Plan is subject to adjustments for capital changes. Shares issued under the Plan may be authorized but unissued shares of Common Stock or shares of Common Stock held in the treasury. As of August 31, 2001, options for the purchase of 2,741,950 shares of Common Stock were outstanding under the Plan and 1,091,847 shares were available for new grants under the Plan.

Set forth below is a summary of other principal provisions of the Plan, a copy of which may be obtained from the Clerk of the Corporation upon request. THE BOARD OF DIRECTORS RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE AMENDMENT TO THE PLAN INCREASING THE NUMBER OF SHARES OF COMMON STOCK RESERVED FOR ISSUANCE THEREUNDER TO 5,650,000 SHARES, AND FOR THE AMENDMENT TO THE PLAN PERMITTING AUTOMATIC INCREASES ON AN ANNUAL BASIS IN THE NUMBER OF SHARES OF COMMON STOCK ISSUABLE UNDER THE PLAN. The affirmative vote of the holders of at least a majority of the shares of Common Stock voting in person or by proxy at the Meeting will be required for approval of the amendment to the 1997 Stock Option Plan.

Options. The Plan provides that options designated as incentive stock options may be granted only to employees (including officers and directors who are also employees) of the Corporation or any subsidiary. Options designated as non-qualified options may be granted to officers, directors, employees, consultants and advisors of the Corporation or any of its subsidiaries.

In determining the eligibility of an individual to be granted an option, as well as in determining the number of options to be granted to any individual, the Committee takes into account the position and responsibilities of the individual being considered, the nature and value to the Corporation or its subsidiaries of the individual's service and accomplishments, his or her present and potential contribution to the success of the Corporation or its subsidiaries and such other factors as the Committee deems relevant.

The maximum number of shares with respect to which an option or options may be granted to any employee in any one taxable year of the Corporation shall not exceed 100,000, taking into account shares granted during such taxable period under options that have terminated.

Terms and Provisions of Options. Options granted under the Plan are exercisable at such times and during such period as is set forth in the option agreement, but no option granted under the Plan can have a term in excess of 10 years from the date of grant. The option agreement may contain such provisions and conditions as may be determined by the Committee. The option exercise price for options designated as non-qualified stock options granted under the Plan is determined by the Committee, but in no event shall be less than 50% of the fair market value of the underlying Common Stock at the time such option is granted. The option exercise price for incentive stock options granted under the Plan shall be no less than fair market value of the Common Stock of the Corporation at the time the option is granted. Options granted under the Plan may provide for the payment of the exercise price by delivery of cash or shares of Common Stock of the Corporation owned by the optionee having a fair market value equal in amount to the exercise price of the options being exercised, or any combination thereof; provided, however, that the payment of the exercise price by delivery of shares of Common Stock of the Corporation owned by the optionee may be made only if the payment does not result in a charge to earnings for financial accounting purposes, as determined by the Committee.

The right of any optionee to exercise an option granted under the Plan is not assignable or transferable by such optionee otherwise than by will or the laws of descent and distribution, and any such option shall be exercisable during the lifetime of such optionee only by him or her; provided, however, that in the case of a

non-qualified stock option, the Committee may permit transferability of such options on such terms and conditions as determined by the Committee and set forth in an option agreement.

An option granted to any employee or consultant optionee who ceases to be an employee or consultant of the Corporation or one of its subsidiaries shall terminate ten (10) days after the date such optionee ceases to be an employee or consultant of the Corporation or one of its subsidiaries. If such termination of employment or consultancy is because of dismissal for cause or because the employee or consultant is in breach of any employment or consultant agreement, such an option will terminate immediately on the date the optionee ceases to be an employee or consultant of the Corporation or one of its subsidiaries. If such termination of employment or consultancy is because the optionee has become permanently disabled, the option shall terminate on the last day of the twelfth month from the date such optionee ceases to be an employee or consultant. In the event of the death of the optionee, the option shall terminate on the last day of the twelfth month from the date of death. In no event shall an option be exercisable after the date upon which it expires by its terms. The Committee has the authority to extend the expiration date of any outstanding option in circumstances in which it deems such action to be appropriate.

An option granted to an employee optionee who ceases to be an employee of the Corporation or one of its subsidiaries shall be exercisable only to the extent that the right to purchase shares under such option has accrued and is in effect on the date such optionee ceases to be an employee of the Corporation or one of its subsidiaries. In the event of the death of any optionee, the option granted to such optionee may be exercised by the estate of such optionee, or by any person or persons who acquired the right to exercise such option by bequest or inheritance or by reason of the death of such optionee.

Recapitalization; Reorganization; Change of Control. The Plan provides that the number and kind of shares as to which options may be granted thereunder and as to which outstanding options then unexercised shall be exercisable shall be adjusted to prevent dilution in the event of any reorganization, merger, consolidation, recapitalization, reclassification, stock split-up, combination of shares or dividends payable in capital stock. In addition, unless otherwise determined by the Committee in its sole discretion, in the case of any sale or conveyance to another entity of all or substantially all of the property and assets of the Corporation or a Change of Control as defined in the Plan, the purchaser of the Corporation's assets or stock may deliver to the optionee the same kind of consideration that is delivered to the stockholders of the Corporation as a result of the sale, conveyance or Change of Control or the Committee may cancel all outstanding options in exchange for consideration in cash or in kind, which consideration shall be equal in value to the value of those shares of stock or other securities the optionee would have received had the option been exercised (to the extent then exercisable) and no disposition of the shares acquired upon such exercise has been made prior to such sale, conveyance or Change of Control, less the option price therefor.

The Committee shall also have the power to accelerate the exercisability of any options, notwithstanding any limitations in the Plan or in the option agreement, upon such a sale, conveyance or Change of Control. Change of Control is defined in the Plan as having occurred if any of the following conditions have occurred: (1) the merger or consolidation of the Corporation with another entity where the Corporation is not the surviving entity and where after the merger or consolidation (i) its stockholders prior to the merger or consolidation hold less than 50% of the voting stock of the surviving entity and (ii) its Directors prior to the merger or consolidation are less than a majority of the Board of the surviving entity; (2) the sale of all or substantially all of the Corporation's assets to a third party and subsequent to the transaction (i) its stockholders hold less than 50% of the stock of said third party and (ii) its Directors are less than a majority of the Board of said third party; (3) a transaction or series of related transactions, including a merger of the Corporation with another entity where the Corporation is the surviving entity, whereby 50% or more of the voting stock of the Corporation is transferred to parties who are not prior thereto stockholders or affiliates of the Corporation; or (4) the Continuing Directors shall not constitute a majority of the Board of Directors of

the Corporation. The term "Continuing Directors" shall mean a member of the Board of Directors of the Corporation who either was a member of the Board of Directors of the Corporation on the date the Plan was adopted by the Board of Directors or who subsequently became a director of the Corporation and whose initial appointment, initial election or initial nomination for election by the Corporation's shareholders subsequent to such date was approved by a vote of a majority of the Continuing Directors then on the Board of Directors of the Corporation.

Upon dissolution or liquidation of the Corporation, all options granted under the Plan shall terminate, but each optionee shall have the right, immediately prior to such dissolution or liquidation, to exercise his or her option to the extent then exercisable. The Committee shall have the right to accelerate the vesting of any award or take such other action with respect thereto as the Committee shall in its sole discretion determine in the event of any contemplated dissolution or liquidation of the Corporation.

Termination and Amendment. Unless sooner terminated, the Plan shall terminate ten (10) years from June 5, 1997, the date upon which it was adopted by the Board of Directors. The Board of Directors may at any time terminate the Plan or make such modification or amendment as it deems advisable; provided, however, that the Board of Directors may not, without stockholder approval, increase the maximum number of shares for which options may be granted or change the designation of the class of persons eligible to receive options under the Plan or make any other change in the Plan which requires stockholder approval under applicable law or regulations, including any approval requirement which is a prerequisite for exemptive relief under Section 16 of the 1934 Act. The Committee may terminate, amend or modify any outstanding option without the consent of the optionholder; provided, however, that without the consent of the optionee, the Committee shall not change the number of shares subject to an option nor the exercise price thereof, nor extend the term of such option.

TAX EFFECTS OF PLAN PARTICIPATION

Options granted under the Plan are intended to be either incentive stock options, as defined in Section 422 of the Code, or non-qualified stock options.

Incentive Stock Options. Except as provided below with respect to the alternative minimum tax, the optionee will not recognize taxable income upon the grant or exercise of an incentive stock option. If the optionee holds the shares received pursuant to the exercise of the option for at least one year after the date of exercise and for at least two years after the option is granted, the optionee will recognize long-term capital gain or loss upon the disposition of the stock measured by the difference between the option exercise price (the stock's basis) and the amount received for such shares upon disposition.

In the event that the optionee disposes of the stock prior to the expiration of the required holding periods (a "disqualifying disposition"), the optionee generally will realize ordinary income equal to the difference between the exercise price and the lower of the fair market value of the stock at the date of the option exercise or the sale price of the stock. The basis in the stock acquired upon exercise of the option will equal the amount of income recognized by the optionee plus the option exercise price. Upon eventual disposition of the stock, if the optionee holds the stock as a capital asset, the optionee will recognize long-term or short-term capital gain or loss, depending on the holding period of the stock and the difference between the amount realized by the optionee upon disposition of the stock and the optionee's basis in the stock.

For alternative minimum tax purposes, the excess of the fair market value of stock on the date of the exercise of the incentive stock option over the exercise price of the option is included in alternative minimum taxable income for alternative minimum tax purposes. If the alternative minimum tax applies to the optionee, an alternative minimum tax credit may reduce the regular tax upon eventual disposition of the stock.

The Corporation will not be allowed an income tax deduction upon the grant or exercise of an incentive stock option. However, upon a disqualifying disposition by the optionee of shares acquired upon exercise of the incentive stock option, the Corporation will be allowed a deduction in an amount equal to the ordinary income recognized by the optionee.

The Internal Revenue Service will treat the exercise of an option with previously acquired stock of the Corporation will be treated as, in effect, two separate transactions. Pursuant to Section 1036 of the Code, the first transaction will be a tax-free exchange of the previously acquired shares for the same number of new shares. The new shares will retain the basis and the holding periods of the previously acquired shares. The second transaction will be the issuance of additional new shares having a value equal to the difference between the aggregate fair market value of all of the new shares being acquired and the aggregate option exercise price for those shares. Because the exercise of an incentive stock option does not result in the recognition by the optionee of income, this issuance will also be tax-free (unless the alternative minimum tax applies, as described above). The optionee's basis in these additional new shares will be zero and the optionee's holding period for these shares will commence on the date on which the shares are transferred. For purposes of the one and two-year holding period requirements which must be met for favorable incentive stock option tax treatment to apply, the holding periods of previously acquired shares are disregarded.

Non-qualified Stock Options. As in the case of incentive stock options, no income is recognized by the optionee on the grant of a non-qualified stock option. On the exercise by an optionee of a non-qualified option, generally the excess of the fair market value of the stock when the option is exercised over its cost to the optionee will be (a) taxable to the optionee as ordinary income and (b) deductible for income tax purposes by the Corporation. The optionee's tax basis in his stock will equal his cost for the stock plus the amount of ordinary income the optionee had to recognize with respect to the non-qualified stock option.

The Internal Revenue Service will treat the exercise of a non-qualified stock option with already owned stock of the Corporation as two transactions. First, there will be a tax-free exchange of the old shares for a like number of shares under Section 1036 of the Code, with such exchanged shares retaining the basis and holding period of the old shares. Second, there will be an issuance of additional new shares having a value equal to the difference between the fair market value of all new shares being acquired (including the exchanged shares and the additional new shares) and the aggregate option price for those shares. The employee will recognize ordinary income under Section 83 of the Code, in an amount equal to the fair market value of the additional new shares (i.e., the spread on the option). The additional new shares will have a basis equal to the fair market value of the additional new shares and the optionees holding period for the additional new shares will commence on the date on which the shares are transferred.

If the optionee holds the stock as a capital asset, upon a subsequent disposition of stock acquired upon the exercise of a non-qualified stock option, the optionee will recognize short-term or long-term capital gain or loss, depending upon the holding period of the stock equal to the difference between the amount realized upon disposition of the stock by the optionee and the optionee's basis in the stock.

For all options, different tax rules may apply if the optionee is subject to Section 16 of the Securities Exchange Act of 1934.

NEW PLAN BENEFITS

It is not possible to state the persons who will receive options or awards under the Plan in the future, nor the amount of options or awards which will be granted thereunder. The following table provides information with respect to options granted since the beginning of fiscal 2001 under the Plan. See "Mercury Computer Systems, Inc. 1997 Stock Option Plan" for a description of the options which are provided for under the Plan.

1997 PLAN NAME AND POSITION	DOLLAR VALUE STOCK OPTIONS	-----
James R. Bertelli, President and CEO.....	\$ 832,282(1)	42,381
G. Mead Wyman, Senior Vice President and CFO.....	302,503(1)	14,000
Vincent A. Mancuso, Vice President and General Manager, Government Electronics Group.....	151,252(1)	7,000
Steven M. Chasen, Vice President, Special Projects.....	432,148(1)	20,000
Douglas F. Flood, Vice President, Corporate Development.....	226,878(1)	10,500
All Executive Officers as a Group.....	1,945,063(1)	93,881
All Non-Executive Officer Directors.....	20,841,475(1)	834,200

(1) The dollar value of each option granted is estimated on the date of grant using the Black-Scholes option-pricing model utilizing the following weighted-average assumptions: (1) expected risk-free interest rate of 4.97% in 2001, (2) expected option life of 6 years; (3) expected stock volatility of 80% for June 30, 2001, and (4) expected dividend yield of 0.0%.

PROPOSED AMENDMENT TO THE CORPORATION'S ARTICLES OF ORGANIZATION INCREASING THE NUMBER OF SHARES OF COMMON STOCK WHICH THE CORPORATION HAS AUTHORITY TO ISSUE FROM 40,000,000 SHARES TO 65,000,000 SHARES

On August 23, 2001, the Board of Directors adopted the following resolution regarding the proposed amendment to the Articles of Organization (the "Amendment"):

RESOLVED: THAT THIS CORPORATION'S ARTICLES OF ORGANIZATION BE AMENDED TO INCREASE THE NUMBER OF SHARES OF COMMON STOCK AUTHORIZED FOR ISSUANCE FROM 40,000,000 SHARES TO 65,000,000 SHARES, AND THAT THE PROPOSAL BE BROUGHT BEFORE THE STOCKHOLDERS FOR ADOPTION.

The affirmative vote of at least a majority of shares of Common Stock entitled to vote at the Meeting is required to approve the Amendment.

Increase in Number of Shares of Common Stock. If approved by the stockholders, the Amendment will authorize the Corporation to issue an additional 25,000,000 shares of the Corporation's Common Stock, par value \$.01 per share. As of August 31, 2001, there were 40,000,000 shares of Common Stock authorized, of which 21,889,977 shares were outstanding, 1,091,847 shares remained reserved for issuance pursuant to the Corporation's 1997 Employee Stock Purchase Plan, and 1,154,411 shares remained available for issuance pursuant to all the Corporation's stock option plans. The Board of Directors is empowered under the Articles of Organization of the Corporation to issue shares of authorized stock without further stockholder approval. The holders of the Corporation's Common Stock do not have preemptive rights.

Appraisal Rights in Respect of the Proposed Amendment. Under the applicable provisions of the Massachusetts Business Corporation Law, the Corporation's stockholders have no appraisal rights with respect to the Amendment.

Recommendations of the Board of Directors. As of August 31, 2001 there were 13,577,115 shares available for issuance and not otherwise reserved of the Corporation's Common Stock. Accordingly, the Board of Directors believes that the number of authorized shares of Common Stock should be increased by 25,000,000 to provide sufficient shares for use for such corporate purposes as may be determined advisable by the Board of Directors, without further action or authorization by the stockholders. Such corporate purposes might include the acquisition of capital funds through the sale of stock, the acquisition of other corporations or properties, or the declaration of stock dividends in the nature of a stock split. There are no current plans, agreements, arrangements, or understandings with respect to the issuance of any of the shares of Common Stock which would be authorized by the Amendment; however, the Board of Directors believes that the availability of shares would afford the Corporation flexibility in considering and implementing any of the corporate transactions enumerated above.

Possible Effects of the Amendment. If the stockholders approve the Amendment, the Corporation will have additional authorized but unissued shares of Common Stock that may be issued without further action or authorization of the stockholders (except as required by law or the rules of the Nasdaq Stock Market or other stock exchange on which the Corporation's securities may then be listed). The issuance of additional shares of Common Stock may have a dilutive effect on earnings per share. In addition, the issuance of additional shares of Common Stock could have a dilutive effect on the voting power of the current stockholders because they do not have preemptive rights. Finally, the Amendment could, under certain circumstances, have an anti-takeover effect, because it would enable the Board of Directors to issue shares of Common Stock to persons who are opposed to a takeover bid. This could deter transactions that may result in a change of control of the Corporation, including transactions in which stockholders may receive a premium for their shares over the current market prices. The Board of Directors, however, has presented the Amendment for the purposes described above and not with the intent that it be utilized as a type of anti-takeover device.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE FOR THE AMENDMENT TO
THE CORPORATION'S ARTICLES OF ORGANIZATION INCREASING THE NUMBER
OF SHARES OF COMMON STOCK WHICH THE CORPORATION HAS AUTHORITY
TO ISSUE FROM 40,000,000 SHARES TO 65,000,000 SHARES.

COMPENSATION COMMITTEE INTERLOCKS AND INSIDER PARTICIPATION

During fiscal year 2001, Messrs. Mullin, Sallen and Schneider served on the Compensation Committee of the Corporation's Board of Directors for the entire year. The Corporation had no outstanding loans to the Directors during fiscal year 2001.

PRINCIPAL HOLDERS OF VOTING SECURITIES

The following table shows, as of August 31, 2001, any person who is known by the Corporation to be the beneficial owner of more than five percent of any class of voting securities of the Corporation. For purposes of this Proxy Statement, beneficial ownership is defined in accordance with Rule 13d-3 under the Securities Exchange Act of 1934 and means generally the power to vote or dispose of the securities, regardless of any economic interest therein.

NAME AND ADDRESS NATURE OF BENEFICIAL OWNERSHIP	AMOUNT OF BENEFICIAL CLASS -----	AND PERCENT OF BENEFICIAL -----
----- ----- Scudder Kemper Investments, Inc. (1).....	1,731,700	7.9%
Capital Research and Management Company(2).....	1,482,180	6.8%
SMALLCAP World Fund, Inc. (3).....	1,300,000	5.9%

(1) The address of Scudder Kemper Investments, Inc. is 345 Park Avenue, New York, NY 10154.

(2) The address of Capital Research and Management Company is 333 South Hope Street, 55th Floor, Los Angeles, CA 90071. Capital Research and Management Company, a registered investment advisor, is deemed to be the beneficial owner of the listed shares as a result of acting as investment advisor to various registered investment companies, including SMALLCAP World Fund, Inc.

(3) The address of SMALLCAP World Fund, Inc. is 333 South Hope Street, 55th Floor, Los Angeles, CA 90071. SMALLCAP World Fund, Inc. is a registered investment company which is advised by Capital Research and Management Company.

SECURITY OWNERSHIP OF DIRECTORS AND NAMED EXECUTIVE OFFICERS

The following information is furnished as of August 31, 2001, with respect to Common Stock of the Corporation beneficially owned within the meaning of Rule 13d-3 by (i) all Directors of the Corporation and nominees (the "Directors"); (ii) the Chief Executive Officer of the Corporation and the four most highly compensated executive officers of the Corporation other than the Chief Executive Officer (collectively, the "Named Executive Officers"); and (iii) all Directors and Named Executive Officers as a group. Unless otherwise indicated, the individuals named below held sole voting and investment power over the shares listed below.

NAME AND ADDRESS	AMOUNT	NATURE OF BENEFICIAL OWNERSHIP	PERCENT OF CLASS
----- James			
		R.	
Bertelli(1)	969,020	4.4% Vincent A.	
Mancuso(2)	36,302	* G. Mead	
Wyman(3)	76,155	* Gordon B.	
Baty(4)	110,835	* Albert P. Belle	
Isle(4)	109,356	* Sherman N.	
Mullin(5)	37,036	* James A.	
Dwyer	4,000	* Russell	
Johnson	0	* Melvin	
Sallen(6)	64,998	* Michael I.	
Schneider	7,000	* Douglas	
Flood(7)	14,691	* Steven	
Chasen(8)	41,360	* All Directors and Named Executive Officers As a Group (12X persons)	
(10)	1,470,753	6.7%	

* Less than 1.0%.

- (1) Includes 2,400 shares owned by Mr. Bertelli's spouse, and options to purchase 125,400 shares exercisable within sixty days of August 31, 2001.
- (2) Includes options to purchase 27,050 shares exercisable within sixty days of August 31, 2001.
- (3) Includes options to purchase 16,000 shares exercisable within sixty days of August 31, 2001.
- (4) Includes options to purchase 27,356 shares exercisable within sixty days of August 31, 2001.
- (5) Includes options to purchase 20,306 shares exercisable within sixty days of August 31, 2001.
- (6) Includes 800 shares owned by Mr. Sallen's wife, 4,000 shares owned by the Lois S. Sallen Trust, of which Mr. Sallen is a co-trustee and beneficiary, and options to purchase 23,698 shares exercisable within sixty days of August 31, 2001.
- (7) Includes options to purchase 14,219 shares exercisable within sixty days of August 31, 2001.
- (8) Includes options to purchase 21,118 shares exercisable within sixty days of August 31, 2001.
- (9) Includes 303,533 shares which certain Directors and Executive Officers have the right to acquire upon the exercise of outstanding options, exercisable presently or within sixty days of August 31, 2001.

Notwithstanding anything to the contrary set forth in any of the Corporation's previous filings under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, that might incorporate future filings, including this Proxy Statement, in whole or in part, the following Report of the Compensation Committee, Report of the Audit Committee and the Performance Graph on page 17 shall not be incorporated by reference into any such filing.

REPORT OF THE COMPENSATION COMMITTEE ON EXECUTIVE COMPENSATION

The Compensation Committee (the "Committee") of the Board of Directors has

furnished the following report on executive compensation.

The Committee administers the Corporation's stock option plans, makes annual recommendations to the full Board of Directors regarding the chief executive officer's salary, bonus, and equity-based compensation,

and oversees the executive compensation program for the Corporation's other employees, including its executive officers. The Committee is composed of three independent directors who are not employees of the Corporation.

COMPENSATION PHILOSOPHY

The Corporation's compensation policies for executive officers are based on the belief that the interests of executives should be closely aligned with those of the Corporation's shareholders. The compensation policies are designed to achieve the following objectives:

- Offer compensation opportunities that attract highly qualified executives, reward exceptional initiative and achievement, and retain the leadership and skills necessary to build long-term stockholder value.
- Maintain a significant portion of executives' total compensation at risk, tied to both the annual and long-term financial performance of the Corporation and the creation of stockholder value.
- Further the Corporation's short and long-term strategic goals and values by aligning compensation with business objectives and individual performance.

EXECUTIVE COMPENSATION

Compensation of executive officers other than the chief executive officer is determined by the chief executive officer and is subject to review by the Committee. The Committee historically has obtained outside survey data regarding executive and senior level compensation and provided this data to the chief executive officer to assist him in making compensation decisions. Compensation for executive officers is comprised of base salary, annual cash bonuses and periodic stock option grants.

Base salary. Annual determinations of base salaries are made based in part on the competitive pay practices of companies in the same industry of similar size and market capitalization, the skills, performance level, and contribution to the business of the individual executives, and the needs of the Corporation.

Annual cash incentive awards. The Corporation's executive officers are eligible to receive annual cash bonus awards designed to motivate executives to attain short-term and longer-term corporate and individual management goals. Award levels vary depending upon the achievement of performance criteria established by the chief executive officer. The bonus criteria for each executive officer are tailored to the achievement of financial and operational goals specifically developed for that officer's area or responsibility, as well as overall corporate performance and the attainment of other individual objectives. Consequently, there is a direct link between the compensation of the executive officers and the Corporation's performance.

Industry benchmark bonus: When Mercury's results exceed the performance of the 50th percentile of the high-tech universe of the Russell 2000, an add-on will be applied to the executive officers compensation. In calculating this bonus, Mercury's performance is based on revenue growth, earnings growth and profit before tax percentage of sales.

Long-term incentives: The Committee believes that stock options are an excellent vehicle for compensating its officers and employees. The Corporation provides long-term incentives through its stock option plans, a purpose of which is to create a direct link between executive compensation and increases in stockholder value. Stock options are granted at fair market value and vest in installments, generally over four years. When determining option awards for an executive officer, the Committee considers the executive's current contribution to Corporation performance, the anticipated contribution to meeting the Corporation's long-term strategic performance goals, and industry practices and norms. Long-term incentives granted in prior years and existing levels of stock ownership are also taken into consideration. Because the receipt of value by an executive officer under a stock option is dependent upon an increase in the price of the

Corporation's Common Stock, this portion of the executive's compensation is directly aligned with an increase in stockholder value.

Deferred Compensation Plan. An executive deferred compensation plan ("Deferred Compensation Plan") was established during fiscal 2001. In accordance with the Deferred Compensation Plan, executives of the Company may elect to contribute up to 35% of their total compensation in a deferral account.

CHIEF EXECUTIVE COMPENSATION

The chief executive officer's compensation is comprised of base salary, annual cash incentive awards and stock option grants.

In determining the base salary paid to Mr. Bertelli for the year ended June 30, 2001, the Committee considered his level of responsibility, salary increases awarded to him in the past, his experience, his potential, and compensation programs of other companies of similar size and characteristics.

Annual cash bonuses and stock option grants to Mr. Bertelli are based on the attainment of individual and corporate performance targets established at the beginning of the fiscal year. The annual cash bonus and option grants to Mr. Bertelli for the fiscal year ended June 30, 2001 reflect the achievement of predetermined targets based on the Corporation's revenue, pre-tax income, and certain non-financial goals.

Mr. Bertelli's base compensation increased 6%, from \$332,750 during the fiscal year ended June 30, 2000 to \$352,715 during the fiscal year ended June 30, 2001. Cash bonuses and stock options, if any, were not paid or granted to Mr. Bertelli as of the date of this Proxy Statement.

In 1993, the Internal Revenue Code was amended to limit the deduction a public Corporation is permitted for compensation paid in 1994 and thereafter to the chief executive officer and to the four most highly compensated executive officers, other than the chief executive officer. Generally, amounts paid in excess of \$1,000,000 to a covered executive, other than performance-based compensation, cannot be deducted. In order to qualify as performance-based compensation under the new tax law, certain requirements must be met, including approval of the performance measures by the stockholders. The Committee intends to consider ways to maximize deductibility of executive compensation, while retaining the discretion the Committee considers appropriate to compensate executive officers at levels commensurate with their responsibilities and achievements.

By the Compensation Committee of the
Board of Directors of Mercury
Computer Systems, Inc.

Melvin J. Sallen, Chairman
Sherman N. Mullin
Michael I. Schneider

REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS

The Audit Committee of the Corporation's Board of Directors is currently composed of three members and acts under a written charter first adopted and approved in 2000. The Audit Committee charter is attached to this Proxy Statement as Appendix A. The members of the Audit Committee are independent directors, as defined by its charter and in accordance with the listing standards of the National Association of Securities Dealers, and possess the financial sophistication required by such charter and rules. The Audit Committee held two meetings during the fiscal year 2001.

Management is responsible for the Corporation's internal controls and the financial reporting process. The Corporation's independent accountants are responsible for performing an independent audit of the Corporation's financial statements in accordance with generally accepted accounting principles and issue a report on those financial statements. The Audit Committee is responsible for monitoring and overseeing these processes. As appropriate, the Audit Committee reviews and evaluates, and discusses with the Corporation's management, financial and accounting personnel and the independent auditors, the following:

- the plan for, and the independent auditors' report on, each audit of the Corporation's financial statements;
- the Corporation's financial disclosure documents, including all financial statements and reports filed with the Securities and Exchange Commission or sent to shareholders;
- changes in the Corporation's accounting practices, principles, controls or methodologies;
- significant developments or changes in accounting rules applicable to the Corporation; and
- the adequacy of the Corporation's internal controls, and financial and accounting personnel.

The Audit Committee reviewed the Corporation's audited financial statements for the fiscal year ended June 30, 2001, and discussed these financial statements with the Corporation's management. Management represented to the Audit Committee that the Corporation's financial statements had been prepared in accordance with generally accepted accounting principles. The Audit Committee also reviewed and discussed the audited financial statements and the matters required by Statement on Auditing Standards 61 (Codification of Statements on Auditing Standard, AU 380), with the Corporation's independent auditors. SAS 61 requires the Corporation's independent auditors to discuss with the Corporation's Audit Committee, among other things, the following:

- methods to account for significant unusual transactions;
- the effect of significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus;
- the process used by management in formulating particularly sensitive accounting estimates and the basis for the auditors' conclusions regarding the reasonableness of those estimates; and
- disagreements with management over the application of accounting principles, the basis for management's accounting estimates and the disclosures in the financial statements.

The Corporation's independent auditors also provided the Audit Committee with the written disclosures and the letter required by Independence Standards Board Standard No. 1 (Independence Discussions with Audit Committees). Independence Standards Board Standard No. 1 requires auditors annually to disclose in writing all relationships that in the auditor's professional opinion may reasonably be thought to bear on independence, confirm their perceived independence and engage in a discussion of independence. In addition, the Audit Committee discussed with the independent auditors their independence from the Corporation.

Based on its discussions with management and the independent auditors, and its review of the representations and information provided by management and the independent auditors, the Audit Committee recommended to the Corporation's Board of Directors that the audited financial statements be included in the Corporation's Annual Report on Form 10-K for the year ended June 30, 2001.

Management has advised us that for the year ended June 30, 2001, the Corporation was billed by its independent auditors, PricewaterhouseCoopers LLP ("PwC") for services in the following categories:

AUDIT FEES: PwC billed the Corporation an aggregate of \$198,000 in fees for professional services rendered in connection with the audit of the Corporation's financial statements for the most recent fiscal year and the reviews of the financial statements included in each of the Corporation's Quarterly Reports on Form 10-Q during the last fiscal year.

FINANCIAL INFORMATION SYSTEMS DESIGN AND IMPLEMENTATION FEES: PwC did not bill the Corporation for any professional services rendered for the most recent fiscal year in connection with financial information systems design or implementation, the operation of the Corporation's information system or the management of its local area network.

ALL OTHER FEES: PwC billed the Corporation an aggregate of \$500,000 for all other services rendered for the most recent fiscal year. All Other Fees includes fees for the following routine audit and tax services:

Tax advice and tax return assistance.....	\$358,000
Due diligence, accounting and tax advice in support of acquisitions and related offering statements.....	\$142,000

We have considered and determined that the provision of the non-audit services noted in the foregoing table is compatible with maintaining PwC's independence.

BY THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS OF MERCURY COMPUTER SYSTEMS, INC.

Audit Committee for 2001
Gordon B. Baty, Chairman
Albert P. Belle Isle
Russell K. Johnsen

PERFORMANCE GRAPH

Set forth below is a line graph comparing the cumulative total stockholder return of the Corporation's Common Stock against the cumulative total return of the MG Group 810 Diversified Computer Systems Index (consisting of 12 companies) and the Russell 2000 Index for the period 1/31/98 through 6/30/01. The graph and table assume that \$100 was invested on 1/31/98 in each of the Corporation's Common Stock, the MG Group 810 Diversified Computer Systems Index, and the Russell 2000 Index and that all dividends were reinvested. This data was furnished by Media General Financial Services, Richmond, Virginia.

COMPARE 5-YEAR CUMULATIVE TOTAL RETURN
AMONG MERCURY COMPUTER SYSTEMS, INC.,
RUSSELL 2000 INDEX AND MG GROUP INDEX

PERFORMANCE GRAPH

MERCURY
COMPUTER
SYSTEMS,
INC. MG
GROUP
INDEX
RUSSELL
2000
INDEX -

- -----

-- -----

1/31/98
100.00
100.00
100.00
6/30/98
138.10
108.24
106.61
6/30/99
307.14
230.49
107.19
6/30/00
615.48
274.74
120.96
6/30/01
840.00
184.10
119.89

ASSUMES \$100 INVESTED ON JAN. 31, 1998
ASSUMES DIVIDEND REINVESTED
FISCAL YEAR ENDING JUNE 30, 2001

EXECUTIVE OFFICERS

NAME AGE POSITION -----
 --- James R.
 Bertelli.....
 61 President, Chief Executive
 Officer, Director and Co-founder
 G. Mead
 Wyman.....
 61 Senior Vice President, Chief
 Financial Officer and Treasurer
 Vincent A.
 Mancuso.....
 54 Vice President and Director
 of Government Electronics Group
 Douglas
 Flood.....
 44 Vice President, Corporate
 Development

MR. BERTELLI co-founded the Corporation in 1981, and has served as the Corporation's President, Chief Executive Officer and a Director since that time. For further information, see "Election of Directors."

MR. WYMAN has been Senior Vice President, Chief Financial Officer and Treasurer of the Corporation since September 1998. From November 1996 until September 1998, he served as Vice President, Chief Financial Officer and Treasurer. Prior to joining Mercury, Mr. Wyman was Chief Financial Officer at Dataware Technologies, Inc., a software design firm, from 1992 to 1996. Previously, he was a general partner at Hambrecht and Quist Venture Partners, and was the first Chief Financial Officer at Lotus Development Corporation. Mr. Wyman also has held senior financial management positions at Prime Computer Inc. and Millipore Corporation.

MR. MANCUSO joined the Corporation in January 1997 as Vice President and Director of Government Electronics Group. Before joining Mercury, Mr. Mancuso was Director of Federal Sales at Siemens Pyramid Information Systems, Inc. from 1995 to 1996. From 1993 to 1995, he was Vice President of consulting at Federal Sources, Inc., an information services company. From 1991 to 1992, he was Vice President and General Manager at Government Technology Services, Inc., Advanced Systems Division. Mr. Mancuso served nineteen years at Hewlett Packard in various sales and marketing management positions.

MR. FLOOD has served as Vice President, Corporate Development since 1998. Prior to joining the Corporation, Mr. Flood was Senior Vice President for Business Development and Planning at FTP Software, Inc. from 1993 to 1998. Mr. Flood has also held positions at the law firm of Fish & Richardson, Dun & Bradstreet Corp., and Raytheon Company.

EXECUTIVE COMPENSATION

The following table sets forth all compensation awarded to, earned by or paid to the Corporation's Chief Executive Officer and each of the Corporation's four other most highly compensated executive officers (the "Named Executive Officers") for the Corporation's three most recent fiscal years ended June 30:

SUMMARY COMPENSATION TABLE

LONG-TERM COMPENSATION -----
 ----- ANNUAL COMPENSATION
 SECURITIES -----
 ----- UNDERLYING OTHER
 ANNUAL OPTIONS/ ALL OTHER NAME AND
 PRINCIPAL POSITION YEAR SALARY(\$)
 BONUS(\$) COMPENSATION SARS(#)
 COMPENSATION -----

 ----- James R.
 Bertelli,
 2001 \$352,715 --(1) \$18,169(2) 42,381
 \$21,771(3) President and CEO 2000
 \$332,750 \$241,620 \$ 8,451(2) 30,104
 \$25,437(4) 1999 \$302,500 \$136,730 \$
 6,000(2) 15,052 \$23,537(5) G. Mead
 Wyman,
 2001 \$214,000 \$137,435 \$14,890(2)
 14,000 \$16,075(6) Senior Vice
 President, 2000 \$200,000 \$ 92,086 \$
 2,398(2) 26,000 \$16,795(7) Treasurer
 and CFO 1999 \$185,000 \$ 41,847 --
 5,000 \$14,895(8) Vincent A.
 Mancuso,
 2001 \$178,500 --(1) \$16,387(2) 7,000
 \$17,347(9) Vice President and 2000
 \$170,000 \$117,975 \$ 2,596(2) 18,000
 \$12,042(10) Director of Government
 Electronics Group 1999 \$170,000
 \$125,000 -- 2,000 \$ 4,220(11) Douglas
 Flood,
 2001 \$187,250 \$104,446 \$14,890(2)
 10,500 \$24,420(12) Vice President,
 2000 \$175,000 \$ 72,025 \$ 2,398(2)
 18,000 \$ 5,100(13) Corporate
 Development 1999 \$111,346 \$ 45,500 --
 80,000 \$ 1,500(14) Steven
 Chasen,
 2001 \$169,964 \$120,224 \$14,890(2)
 20,000 \$11,764(15) Vice President
 Special Projects 2000 \$175,000 \$
 83,376 \$ 2,398(2) 18,000 \$13,033(16)
 1999 \$145,000 \$ 41,847 -- 2,000
 \$11,133(17)

-
- (1) Bonus for fiscal year ended June 30, 2001 has not yet been determined.
 - (2) Represents automobile allowance and compensation related to automobile leases provided by the Corporation.
 - (3) Represents \$5,100 matching contribution by the Corporation into Mr. Bertelli's 401(k) plan for the benefit of Mr. Bertelli, and a premium of \$16,671 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Bertelli.
 - (4) Represents \$5,100 matching contribution by the Corporation into Mr. Bertelli's 401(k) plan for the benefit of Mr. Bertelli, and a premium of \$20,337 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Bertelli.
 - (5) Represents \$3,200 matching contribution by the Corporation into Mr. Bertelli's 401(k) plan for the benefit of Mr. Bertelli, and a premium of \$20,337 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Bertelli.
 - (6) Represents \$5,100 matching contribution by the Corporation into Mr. Wyman's

401(k) plan for the benefit of Mr. Wyman, and a premium of \$10,975 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Wyman.

- (7) Represents \$5,100 matching contribution by the Corporation into Mr. Wyman's 401(k) plan for the benefit of Mr. Wyman, and a premium of \$11,695 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Wyman.

- (8) Represents \$3,200 matching contribution by the Corporation into Mr. Wyman's 401(k) plan for the benefit of Mr. Wyman, and a premium of \$11,695 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Wyman.
- (9) Represents \$5,100 matching contribution by the Corporation into Mr. Mancuso's 401(k) plan for the benefit of Mr. Mancuso , and a premium of \$12,247 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Mancuso.
- (10) Represents \$5,100 matching contribution by the Corporation into Mr. Mancuso's 401(k) plan for the benefit of Mr. Mancuso , and a premium of \$6,942 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Mancuso.
- (11) Represents \$3,200 matching contribution by the Corporation into Mr. Mancuso's 401(k) plan for the benefit of Mr. Mancuso, and a premium of \$1,020 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Mancuso.
- (12) Represents \$5,100 matching contribution by the Corporation into Mr. Flood's 401(k) plan for the benefit of Mr. Flood, and a premium of \$19,320 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Mancuso.
- (13) Represents \$5,100 matching contribution by the Corporation into Mr. Flood's 401(k) plan for the benefit of Mr. Flood.
- (14) Represents \$1,500 matching contribution by the Corporation into Mr. Flood's 401(k) plan for the benefit of Mr. Flood.
- (15) Represents \$4,333 matching contribution by the Corporation into Mr. Chasen's 401(k) plan for the benefit of Mr. Chasen, and a premium of \$7,431 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Chasen.
- (16) Represents \$5,100 matching contribution by the Corporation into Mr. Chasen's 401(k) plan for the benefit of Mr. Chasen, and a premium of \$7,933 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Chasen.
- (17) Represents \$3,200 matching contribution by the Corporation into Mr. Chasen's 401(k) plan for the benefit of Mr. Chasen, and a premium of \$7,933 paid by the Corporation for a split dollar life insurance policy for the benefit of Mr. Chasen.

STOCK OPTION AND STOCK PURCHASE PLANS

The Corporation had in effect its 1998 Stock Option Plan for Non-Employee Directors (the "1998 Plan"), which was terminated in August 2001, no options having been granted under such Plan in 2001; however, certain persons continue to hold options to purchase shares of common stock granted under the 1998 Plan. Additionally, the Corporation has in effect its 1997 Employee Stock Purchase Plan, 1997 Stock Option Plan, 1993 Stock Option Plan for Non-Employee Directors, 1991 Stock Option Plan, and 1982 Stock Option Plan (together with the 1998 Plan, collectively the "Stock Option and Purchase Plans"). The Corporation is no longer permitted to grant options under its 1982 Stock Option Plan, its 1993 Stock Option Plan for Non-Employee Directors, or its 1998 Stock Option Plan for Non-Employee Directors; however, certain persons continue to hold options to purchase shares of common stock granted under such plans. The Compensation Committee of the Board of Directors is responsible for the administration and interpretation of the Stock Option and Purchase Plans. Copies of the Stock Option and Purchase Plans are available from the Clerk of the Corporation upon request.

OPTION GRANTS, EXERCISES AND HOLDINGS

Option Grants. The following table sets forth certain information regarding options granted to the Named Executive Officers during the year ended June 30, 2001. The Corporation did not issue any stock appreciation rights ("SARs") during the three most recent fiscal years ended June 30, 2001.

OPTION GRANTS IN LAST FISCAL YEAR

INDIVIDUAL GRANTS POTENTIAL REALIZABLE ----- ----- ----- -----	VALUE AT ASSUMED NUMBER OF PERCENT OF ANNUAL RATES OF STOCK SECURITIES TOTAL OPTION PRICE APPRECIATION FOR UNDERLYING GRANTED TO EXERCISE OPTION TERM(1) OPTION EMPLOYEES IN PRICE -- ----- -----	NAME GRANTED(#) FISCAL YEAR (%) (\$/SHARE) DATE 5% (\$) 10% (\$) --- ----- ----- ----- ----- -----
		--- James R. Bertelli (2)..... 32,381 3.7% \$27.500 9/18/00 \$560,017 \$1,419,192 James R. Bertelli (3)..... 10,000 1.1% \$26.750 9/20/00 168,229 426,326 G. Mead Wyman (4)..... 14,000 1.6% \$30.063 10/10/00 264,690 670,778 Vincent A.

Mancuso
 (5)....
 7,000 0.8%
 \$30.063
 10/10/00
 132,345
 335,389
 Douglas
 Flood
 (6).....
 10,500 1.2%
 \$30.063
 10/10/00
 198,518
 503,083
 Steven
 Chasen
 (7).....
 20,000 2.3%
 \$30.063
 10/10/00
 378,129
 958,254

-
- (1) In accordance with the rules of the Securities and Exchange Commission (the "Commission"), shown are the gains or "option spreads" that would exist for the respective options granted. These gains are based on the assumed rates of annual compound stock price appreciation of 5% and 10% from the date the option was granted over the full option term. These assumed annual compound rates of stock price appreciation are mandated by the rules of the Commission and do not represent the Corporation's estimate or projection of future Common Stock prices.
 - (2) Options vest in increments of 8,095 shares on September 18 in each of 2001, 2002, 2003 and 2004 so long as Mr. Bertelli's employment with the Corporation has not been terminated.
 - (3) At June 30, 2001, 10,000 shares were exercisable.
 - (4) No shares were exercisable at June 30, 2001. Options vest as to 14,000 shares in increments of 3,500 shares on October 10 in each of 2001, 2002, 2003 and 2004 so long as Mr. Wyman's employment with the Corporation has not been terminated.
 - (5) No shares were exercisable at June 30, 2001. Options vest as to 7,000 shares in increments of 1,750 shares on October 10 in each of 2001, 2002, 2003 and 2004 so long as Mr. Mancuso's employment with the Corporation has not been terminated.
 - (6) No shares were exercisable at June 30, 2001. Options vest as to 10,500 shares in increments of 2,625 shares on October 10 in each of 2001, 2002, 2003 and 2004 so long as Mr. Flood's employment with the Corporation has not been terminated.
 - (7) No shares were exercisable at June 30, 2001. Options vest as to 20,000 shares in increments of 5,000 shares on October 10 in each of 2001, 2002, 2003 and 2004 so long as Mr. Chasen's employment with the Corporation has not been terminated.

AGGREGATED OPTION EXERCISES IN LAST
FISCAL YEAR AND 6/30/01 OPTION VALUES

The following table provides information on option exercises and on the value of the Named Executive Officers' unexercised options at June 30, 2001.

NUMBER OF SECURITIES VALUE OF UNEXERCISED UNDERLYING UNEXERCISED IN- THE-MONEY OPTIONS SHARES OPTIONS AT FISCAL YEAR-END AT FISCAL YEAR- END (\$)(1) ACQUIRED ON VALUE ----- ----- ----- -----	- NAME EXERCISE (#) REALIZED (\$)(2) EXERCISABLE UNEXERCISABLE EXERCISABLE UNEXERCISABLE - ----- ----- ----- ----- -----
----- James	
R.	
Bertelli.....	
0 \$ 0 84,478	
80,259	
\$3,555,500	
\$2,659,362 G.	
Mead	
Wyman.....	
0 0 52,500	
85,500	
2,331,903	
3,216,577	
Vincent A.	
Mancuso..... 0	
0 25,300 32,900	
1,100,779	
1,063,396	
Douglas	
Flood.....	
12,500 479,350	
0 80,000 0	
2,844,925	
Steven	
Chasen.....	
14,902 377,318	
2,498 48,640	
65,103	
1,427,977	

(1) Value of unexercised in-the-money stock options represents the difference between the exercise prices of the stock options and the closing price of the Corporation's Common Stock on The Nasdaq National Market on June 30, 2001.

(2) Value realized on exercise represents the difference between the exercise prices of stock options exercised and the trading price of the Corporation's Common Stock on The Nasdaq National Market on the date of such exercise.

OTHER MATTERS

Independent Public Accountants. The Board of Directors has appointed PricewaterhouseCoopers LLP as independent auditors to examine the consolidated financial statements of the Corporation and its subsidiaries for the fiscal year ended June 30, 2002. A representative of PricewaterhouseCoopers LLP is expected to be present at the Meeting and will have the opportunity to make a statement if he or she so desires and to respond to appropriate questions. The engagement of PricewaterhouseCoopers LLP was approved by the Board of Directors at the recommendation of the Audit Committee of the Board of Directors.

Section 16(a) Beneficial Ownership Reporting Compliance. Section 16(a) of the Securities Exchange Act of 1934 requires the Corporation's officers and Directors and persons beneficially owning more than 10% of the outstanding Common Stock of the Corporation to file reports of beneficial ownership and changes in beneficial ownership with the Securities and Exchange Commission ("SEC"). Officers, Directors, and greater than 10% beneficial owners of Common Stock are required by SEC regulation to furnish the Corporation with copies of all Section 16(a) forms they file.

Based solely on copies of such forms furnished as provided above, or written representations that no Forms 5 were required, the Corporation believes that during the fiscal year ended June 30, 2000, all Section 16(a) filing requirements applicable to its officers, Directors, and beneficial owners of greater than 10% of its Common Stock were complied with, except that (i) through inadvertence, two reports relating in the aggregate to five transactions by Gordon Baty were not timely filed; (ii) through inadvertence, two reports relating in the aggregate to five transactions by Steve Chasen were not timely filed; (iii) through inadvertence, a Form 3 by James Dwyer was not timely filed; (iv) through inadvertence, a Form 3 by Russell Johnsen was not timely filed; (v) through inadvertence, six reports relating in the aggregate to ten transactions by Vincent Mancuso were not timely filed; (vi) through inadvertence, six reports relating in the aggregate to seven transactions by Sherman Mullin were not timely filed; (vii) through inadvertence, a Form 3 by Michael Schneider was not timely filed; and (viii) through inadvertence, nine reports relating in the aggregate to eighteen transactions by G. Mead Wyman were not timely filed.

Deadlines for Submission of Stockholder Proposals. Under regulations adopted by the Securities and Exchange Commission, any proposal submitted for inclusion in the Corporation's Proxy Statement relating to the Annual Meeting of Stockholders to be held in 2002 must be received at the Corporation's principal executive offices in Chelmsford, Massachusetts on or before June 25, 2002. Receipt by the Corporation of any such proposal from a qualified stockholder in a timely manner will not ensure its inclusion in the proxy material because there are other requirements in the proxy rules for such inclusion. Stockholders interested in submitting such a proposal are advised to contact knowledgeable counsel with regards to the detailed requirements of such securities rules. In accordance with the provisions of Rule 14a-4(c) promulgated under the Securities Exchange Act of 1934, if the Corporation does not receive notice of a stockholder proposal to be raised at its 2002 Annual Meeting of Stockholders on or before June 25, 2002, then in such event, the proxies shall be allowed to use their discretionary voting authority when the proposal is raised at the 2002 Annual Meeting of Stockholders.

In addition to the Securities and Exchange Commission requirements regarding stockholder proposals, the Corporation's By-Laws contain provisions regarding matters to be brought before stockholder meetings. If stockholder proposals, including proposals regarding the election of Director, are to be considered at the 2002 Annual Meeting of Stockholders, notice of them whether or not they are included in the Corporation's proxy statement and form of proxy, must be given by personal delivery or by United States mail, postage prepaid, to the Clerk of the Corporation on or before August 6, 2002.

Other Matters. Management knows of no matters which may properly be and are likely to be brought before the meeting other than the matters discussed herein. However, if any other matters properly come before the meeting, the persons named in the enclosed proxy will vote in accordance with their best judgment.

EXPENSES AND SOLICITATION

The cost of solicitation of proxies will be borne by the Corporation, and in addition to soliciting stockholders by mail through its regular employees, the Corporation may request banks, brokers, and other custodians, nominees and fiduciaries to solicit their customers who have stock of the Corporation registered in the names of a nominee, and, if so, will reimburse such banks, brokers and other custodians, nominees and fiduciaries for their reasonable out-of-pocket costs. Solicitation by officers and employees of the Corporation may also be made of some stockholders in person or by mail, telephone or telegraph following the original solicitation. The Corporation may retain a proxy solicitation firm to aid in soliciting proxies from its stockholders. The fees of such firm are not expected to exceed \$10,000 plus reimbursement for out-of-pocket expenses.

10-K REPORT

THE CORPORATION WILL PROVIDE EACH BENEFICIAL OWNER OF ITS SECURITIES WITH A COPY OF AN ANNUAL REPORT ON FORM 10-K, INCLUDING THE FINANCIAL STATEMENTS AND SCHEDULES THERETO, REQUIRED TO BE FILED WITH THE SECURITIES AND EXCHANGE COMMISSION FOR THE CORPORATION'S MOST RECENT FISCAL YEAR, WITHOUT CHARGE, UPON RECEIPT OF A WRITTEN REQUEST FROM SUCH PERSON. SUCH REQUEST SHOULD BE SENT TO MR. G. MEAD WYMAN, CHIEF FINANCIAL OFFICER, MERCURY COMPUTER SYSTEMS, INC., 199 RIVERNECK ROAD, CHELMSFORD, MASSACHUSETTS 01824.

VOTING PROXIES

The Board of Directors recommends an affirmative vote on all proposals specified. Proxies will be voted as specified. If signed proxies are returned without specifying an affirmative or negative vote on any proposal, the shares represented by such proxies will be voted in favor of the Board of Directors' recommendations.

By order of the Board of Directors

/s/ Anthony J. Medaglia, Jr.
ANTHONY J. MEDAGLIA, JR., Clerk

Chelmsford, Massachusetts
October 5, 2001

MERCURY COMPUTER SYSTEMS, INC.
SPECIAL MEETING IN LIEU OF
ANNUAL MEETING OF STOCKHOLDERS
NOVEMBER 15, 2001

The undersigned hereby appoints James R. Bertelli and Anthony J. Medaglia, Jr., and each of them, with full power of substitution, proxies to represent the undersigned at the Special Meeting in Lieu of the 2001 Annual Meeting of Stockholders of Mercury Computer Systems, Inc. to be held on November 15, 2001 at 10:00 a.m. at the Boston Museum of Science, Science Park, Boston, Massachusetts, and at any adjournment or adjournments thereof, to vote in the name and place of the undersigned, with all powers which the undersigned would possess if personally present, upon such business as may properly come before the meeting including the proposals as set forth on the reverse side of this Proxy Card.

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS. THE BOARD RECOMMENDS AN AFFIRMATIVE VOTE ON ALL PROPOSALS SPECIFIED. SHARES WILL BE VOTED AS SPECIFIED. IF NO SPECIFICATION IS MADE, THE SHARES REPRESENTED WILL BE VOTED IN FAVOR OF THE PROPOSALS.

PLEASE VOTE, DATE, AND SIGN THIS PROXY IN THE SPACE PROVIDED AND RETURN IN THE ENCLOSED ENVELOPE, WHETHER OR NOT YOU EXPECT TO ATTEND THE MEETING IN PERSON.

Please sign exactly as your name(s) appear(s) on the Proxy. When shares are held by joint tenants, both should sign. When signing as attorney, executor, administrator, trustee or guardian, please give full title as such. If a corporation, please sign in full corporate name by President or other authorized officer. If a partnership, please sign in partnership name by authorized person.

HAS YOUR ADDRESS CHANGED?

DO YOU HAVE ANY COMMENTS?

{Top half of Proxy Card}

(X) PLEASE MARK VOTES AS IN THIS EXAMPLE.

MERCURY COMPUTER SYSTEMS, INC.

Mark box at right if you plan to attend the Meeting. ()

Mark box at right if an address change or comment has been noted on the reverse side of this card. ()

RECORD DATE SHARES: _____

1. Election of Directors:

Dr. Albert P. Belle Isle	FOR ()	WITHHELD ()
Mr. James A. Dwyer	FOR ()	WITHHELD ()
Mr. Melvin Sallen	FOR ()	WITHHELD ()

2. Authorization to amend the Mercury Computer Systems, Inc. 1997 Stock Option Plan to increase the number of shares of Common Stock reserved for issuance thereunder by 1,000,000 shares, from 4,650,000 shares to 5,650,000 shares.

FOR ()	AGAINST ()	ABSTAIN ()
------------	----------------	----------------

3. Authorization to amend the Mercury Computer Systems, Inc. 1997 Stock Option Plan to increase automatically on an annual basis the number of shares of Common Stock reserved for issuance thereunder, as more fully described in the Proxy Statement.

FOR ()	AGAINST ()	ABSTAIN ()
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4. Approval of the amendment to the Mercury Computer Systems, Inc. Articles of Organization increasing the number of authorized shares of Common Stock from 40,000,000 shares to 65,000,000 shares.

FOR ()	AGAINST ()	ABSTAIN ()
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5. In their discretion, the proxies are authorized to vote upon such other business as may properly come before the Meeting.

PLEASE BE SURE TO DATE AND SIGN THIS PROXY.

DATE: _____

SHAREHOLDER SIGN HERE: _____

CO-OWNER SIGN HERE: _____

DETACH CARD

DETACH CARD

DETACH CARD

{Bottom half of Proxy Card}

MERCURY COMPUTER SYSTEMS, INC.

Dear Stockholder:

Please take note of the important information enclosed with this Proxy Card. There are a number of issues related to the management of your company that require your immediate attention and approval. These are discussed in detail in the enclosed proxy materials.

Your vote counts, and you are strongly encouraged to exercise your right to vote your shares.

Please mark the boxes on this Proxy Card to indicate how your shares will be voted. Then sign the card, detach it, and return your proxy vote in the enclosed postage paid envelope.

Your vote must be received prior to the Special Meeting of Stockholders on November 15, 2001.

Thank you in advance for your prompt consideration of these matters.

Sincerely,

Mercury Computer Systems, Inc.

APPENDIX A
AUDIT COMMITTEE CHARTER

MERCURY COMPUTERS SYSTEMS, INC.
AUDIT COMMITTEE CHARTER

PURPOSE

The primary purpose of the Audit Committee (the "Committee") is to assist the Board of Directors (the "Board") in fulfilling its responsibility to oversee management's conduct of the Company's financial reporting process, including by overseeing the financial reports and other financial information provided by the Company's systems of internal accounting and financial controls, and the annual independent audit of the Company's financial statements.

In discharging its oversight role, the Committee is empowered to investigate any matter brought to its attention with full access to all books, records, facilities and personnel of the Company and the power to retain outside counsel, auditors or other experts for this purpose. The Board and the Committee are in place to represent the Company's shareholders; accordingly, the outside auditor is ultimately accountable to the Board and the Committee.

The Committee shall review the adequacy of this Charter on an annual basis.

MEMBERSHIP

The Committee shall be comprised of not less than three members of the Board, and the Committee's composition will meet the requirements of the Audit Committee Policy of the NASD.

Accordingly, all of the members will be directors:

1. Who have no relationship to the Company that may interfere with the exercise of their independence from management and the Company; and
2. Who are financially literate or who become financially literate within a reasonable period of time after appointment to the Committee. In addition, at least one member of the Committee will have accounting or related financial management expertise.

KEY RESPONSIBILITIES

The Committee's job is one of oversight and it recognizes that the Company's management is responsible for preparing the Company's financial statements and that the outside auditors are responsible for auditing those financial statements. Additionally, the Committee recognizes that financial management, as well as the outside auditors, have more time, knowledge and more detailed information on the Company than do Committee members; consequently, in carrying out its oversight responsibilities, the Committee is not providing any expert or special assurance as to the Company's financial statements or any professional certification as to the outside auditor's work.

The following functions shall be the common recurring activities of the Committee in carrying out its oversight function. These functions are set forth as a guide with the understanding that the Committee may diverge from this guide as appropriate given the circumstances.

- The Committee shall review with management and the outside auditors the audited financial statements to be included in the Company's Annual Report on Form 10-K (or the Annual Report to Shareholders if distributed prior to the filing of Form 10-K) and review and consider with the outside auditors the matters required to be discussed by Statement of Auditing Standards ("SAS") No. 61, to assist the Committee in fulfilling its oversight responsibilities.
- As a whole, or through the Committee chair, the Committee shall review with the outside auditors the matters (if any) required to be discussed by SAS No. 61 in connection with the interim financial reviews conducted by the outside auditors to assist the Committee in fulfilling its oversight responsibilities; this review will occur prior to the Company's filing of the Form 10-Q.
- The Committee shall discuss with management and the outside auditors the quality and adequacy of the Company's internal controls, accounting policies and estimates.
- The Committee shall:
 - request from the outside auditors annually, a formal written statement delineating all relationships between the auditor and the Company consistent with Independence Standards Board Standard Number 1;
 - discuss with the outside auditors any such disclosed relationships and their impact on the outside auditor's independence; and
 - recommend that the Board take appropriate action to oversee the independence of the outside auditor.
- The Committee, subject to any action that may be taken by the full Board, shall have the ultimate authority and responsibility to select (or nominate for shareholder approval), evaluate and, where appropriate, replace the outside auditor.
- The Committee will prepare the report required by the rules of the Securities and Exchange Commission to be included in the Company's annual proxy statement, commencing with the proxy statement for the 2001 Annual Meeting.
- Based on the criteria set forth in Item 306(a) of Regulation S-K and, if so determined by the Committee, recommend to the Board of Directors that the audited financial statements for each fiscal year be included in the Company's Annual Report on Form 10-K in respect of such year.
- The Committee will perform such other functions as may be required by law, the Company's Certificate of Incorporation or its By-Laws.