MERRIMAC INDUSTRIES INC
Form 10KSB40
March 29, 2002

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

FORM 10-KSB

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15 (D) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended DECEMBER 29, 2001 Commission file number 0-11201

MERRIMAC INDUSTRIES, INC.

(Name of Small Business Issuer as specified in Its Charter)

DELAWARE	22-1642321
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

41 FAIRFIELD PLACE
WEST CALDWELL, NEW JERSEY 07006

(Address of principal executive offices)

973-575-1300

Registrant's telephone number

Securities registered pursuant to Section 12(b) of the Exchange Act: None

COMMON STOCK COMMON STOCK PURCHASE RIGHTS	AMERICAN STOCK EXCHANGE AMERICAN STOCK EXCHANGE
(Title of each Class)	(Name of each Exchange on which registered)

Securities registered pursuant to Section 12(g) of the Exchange Act: None

Check whether registrant (1) has filed all reports required to be filed by Section 13 or 15 (d) of the Exchange Act during the 12 months (or for such shorter period that registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes X No

Check if there is no disclosure of delinquent filers in response to Item 405 of Regulation S-B contained in this form, and no disclosure will be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-KSB

or any amendment to this Form 10-KSB. [X]

State registrant's revenues for its most recent fiscal year: $25,792,631

The aggregate market value of voting stock held by non-affiliates based upon the average price of such stock as quoted on The American Stock Exchange on March 22, 2002, was $22,210,000.

The number of shares of registrant's Common Stock outstanding at March 22, 2002, was 3,183,858 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of Registrant's Annual Report to Stockholders for Fiscal Year Ended December 29, 2001, are incorporated into Parts I and II of this Form 10-KSB.

Portions of Registrant's Proxy Statement for the 2002 Annual Meeting of Stockholders are incorporated into Part III of this Form 10-KSB.

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CAUTIONARY STATEMENT

This Annual Report on Form 10-KSB contains statements relating to future results of Merrimac Industries, Inc. ("Merrimac" and together with its subsidiaries, the "Company"), including certain projections and business trends, that are "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those projected as a result of certain risks and uncertainties. These risks and uncertainties include, but are not limited to: general economic and industry conditions; slower than anticipated penetration into the satellite communications, defense and wireless markets; the risk that the benefits expected from the acquisition of Filtran Microcircuits Inc. are not realized; the ability to protect proprietary information and technology; competitive products and pricing pressures; the risk that Merrimac will not be able to continue to raise sufficient capital to expand its operations as currently contemplated by its business strategy; risks relating to governmental regulatory actions in communications and defense programs; risks associated with demand for and market acceptance of existing and newly developed products; and inventory risks due to technological innovation and product obsolescence, as well as other risks and uncertainties, including but not limited to those detailed from time to time in Merrimac's Securities and Exchange Commission filings. These forward-looking statements are made only as of the date hereof, and Merrimac undertakes no obligation to update or revise the forward-looking statements, whether as a result of new information, future events or otherwise.

PART I

ITEM 1. BUSINESS

GENERAL

Merrimac is a leader in passive RF and microwave components for industry, government and science. Merrimac components are today found in applications as diverse as satellites, military and commercial aircraft, cellular radio systems, magnetic resonance medical diagnostic instruments, personal communications systems ("PCS") and wireless Internet connectivity.

Merrimac has become a versatile technologically oriented company specializing in miniature radio frequency lumped-element components, integrated networks, microstrip and stripline microwave components, subsystems and ferrite attenuators. Of special significance has been the combination of two or more of these technologies into single components to achieve superior performance and reliability while minimizing package size and weight.

In 1998, Merrimac introduced the Multi-Mix(R) Microtechnology processes to the marketplace. The Multi-Mix(R) process is an enabling technology that employs three-dimensional designs of multiple circuit layers bonded together using a fusion bonding process to help build components and subassemblies at a fraction of the size, weight and cost of conventional microstrip and stripline products.

In February 1999, Merrimac completed the acquisition of all the outstanding stock of Filtran Microcircuits Inc. ("FMI"), a manufacturer of microwave micro circuitry. FMI produces technically intricate microstrip, banded stripline and thick metal-backed Teflon(R) circuits for satellite, aerospace, telecommunications, automotive adaptive cruise control, navigation and defense applications worldwide. Merrimac acquired FMI to enable Merrimac to incorporate FMI's competency in fine line etching into the Multi-Mix(R) Microtechnology processes and accelerate Merrimac's penetration into the satellite communications, defense and wireless markets. FMI is operated as a wholly-owned subsidiary of Merrimac.

Merrimac was originally incorporated as Merrimac Research and Development, a New York corporation, in 1954. Merrimac was reincorporated as a New Jersey corporation in 1994 and subsequently reincorporated as a Delaware corporation in 2001.

DESCRIPTION OF BUSINESSES

RF MICROWAVE AND MULTI-MIX(R) MICROTECHNOLOGY PRODUCT GROUPS

In 1998, Merrimac introduced Multi-Mix(R) Microtechnology capabilities, a new innovative process for microwave, multilayer integrated circuits and micro-multifunction module (MMFM(R)) technology and subsystems. This process is based on fluoropolymer composite substrates, which are bonded together into a multilayer structure using a fusion bonding process. The fusion process provides a homogeneous dielectric medium for superior electrical performance at microwave frequencies. This 3-dimensional Multi-Mix(R) design consisting of stacked circuit layers permits the manufacture of

components and subsystems that are a fraction of the size and weight of conventional microstrip and stripline products.

In July 2001, Merrimac introduced its Multi-Mix PICO(TM) Microtechnology. Through Multi-Mix PICO(TM) technology, Merrimac offers a powerful group of products at a greatly reduced size, weight and cost that includes hybrid junctions, directional couplers, quadrature hybrids, power dividers and inline couplers, filters, vector modulators along with 802.11a and 802.11b Wireless LAN (Local Area Network) modules. When compared to conventional multilayer quadrature hybrids and directional coupler products, Multi-Mix PICO(TM) is smallest in size, by more than 84% without the loss of power or performance. Merrimac has completed the development of integrated inline multi-couplers and are introducing these Multi-Mix PICO(TM) products to major basestation customers.

In December 2001, Merrimac received and started to ship, its first 3G production order for a Multi-Mix PICO(TM) integrated solution to be used by one of the world's largest suppliers of wireless power amplifiers in the design of new, 3G broadband basestations.

In addition to wireless communications, Multi-Mix PICO(TM) products are currently under evaluation for applications in airborne electronic

countermeasures, radar systems, smart antennas, satellite communications receiver modules and security equipment.

In the area of broadband communications, Merrimac is working on solutions that will bring dual-way Internet access to homes and offices through a multimedia broadband interactive satellite system.

Merrimac manufactures and sells approximately 1,500 components and subsystems used in signal processing systems (the extraction of useable information from radio signals) in the frequency spectrum of D.C. to 65 GHz. Merrimac's products are designed to process signals having wide bandwidths and are of relatively small size and lightweight. When integrated into subsystems, advantages of lower cost and smaller size are realized due to the reduced number of connectors, cases and headers. Merrimac's components range in price from $20 to $10,000 and its subsystems range from $500 to more than $100,000.

Merrimac has traditionally developed and offered for sale products built to specific customer needs, as well as standard catalog items. Approximately 30% of 2001 revenues were derived from initial orders for products custom designed for specific customer applications, 50% from repeat orders for such products and 20% from catalog sales.

Merrimac maintains a current electronic catalog on its Internet website. The Merrimac catalog includes hundreds of standard components, and provides a selection of passive signal processing components. These components often form the platform-basis for customization of designs in which the size, package, finish, electrical parameters, environmental performance, reliability and other features are tailored for a specific customer application.

Merrimac's strategy is to be a reliable supplier of high quality, technically innovative signal processing products. Merrimac coordinates its marketing, research and development, and manufacturing operations to develop new products and expand its markets. Merrimac's marketing and development activities focus on identifying and producing prototypes for new military and commercial programs and applications in aerospace, navigational systems, telecommunications and cellular analog and digital wireless telecommunications electronics. Merrimac's research and development efforts are targeted towards providing customers with more complex, reliable, and compact products at lower costs.

The major aerospace companies purchase from Merrimac components and subsystems that include many complex I&Q networks, quadraphase modulators and antenna beamformers. Merrimac design engineers work to develop solutions to customer requirements that are unique or require special performance. Merrimac is committed to continuously enhancing its leading position in high-performance electronic signal processing components for communications, defense and aerospace applications.

Improved production efficiencies coupled with the capacity of the low-cost manufacturing facility in Costa Rica and more extensive use of automated test equipment such as Hewlett Packard network analyzers have resulted in a considerable reduction of the set-up time to take measurements, calibrate test equipment and print out hard copy of data. In addition, computerized cost controls such as closed job history and up-to-date work in process costs are also enhancing Merrimac's competitive position. Laser marking continues to be incorporated into the process of metal packages, providing totally permanent marking, greater flexibility and lower costs.

Merrimac has also begun to use the Internet to communicate with its customers more efficiently. Merrimac's On-Line Co-Design(R) system, an innovative service, allows RF and microwave circuit designers to create and test their products on-line over the Internet. The customer uses electronic design automation software together with proprietary circuit elements from the Multi-Mix(R) library of pre-engineered components and assemblies. This service allows Merrimac engineers to work more directly with customers as they design their products.

For a discussion of financial information about Merrimac's business segments and geographic data, reference is made to Note 11 of Notes to Consolidated Financial Statements in Merrimac's Annual Report to Stockholders for the Fiscal Year Ended December 29, 2001, which note is incorporated herein by reference.

PRODUCTS

Merrimac's major product categories are: (1) power dividers/combiners that equally divide input signals or combine coherent signals for nearly lossless power combinations; (2) I&Q networks (a subassembly of circuits which allows two information signals (incident and quadrature) to be carried on a single radio signal for use in digital communication and navigational positioning); (3) directional couplers that allow for signal sampling along transmission lines; (4) phase shifters that accurately and repeatedly alter a signal's phase transmission to achieve desired signal processing or demodulation; (5) hybrid junctions that serve to split input signals into two output signals with 0 degree phase difference or 180 degrees out of phase with respect to each other; (6) balanced mixers that convert input frequencies to another frequency; (7) variable attenuators that serve to control or reduce power flow without distortion; (8) beamformers that permit an antenna to electronically track or transmit a signal; and (9) quadrature couplers that serve to split input signals into two output signals 90 degrees out of phase with respect to each other or combine equal amplitude quadrature signals. Merrimac's other product categories include single side band modulators, image reject mixers, vector modulators and a wide variety of specialized integrated Micro-Multifunction Modules (MMFM(R)) assemblies. In the last fiscal year, no one product accounted for more than ten percent of total net sales.

Approximately 55% of Merrimac's sales in 2001 were derived from the sales of products for use in high-reliability aerospace, satellite, and missile applications. These products are designed to withstand severe environments without failure or maintenance over prolonged periods of time (from 5 to

20 years). Merrimac provides facilities dedicated to the design, development, manufacture, and testing of these products along with special program management and documentation personnel.

Merrimac's products are also used in a broad range of other defense and commercial applications, including radar, navigation, missiles, satellites, electronic warfare and counter-measures, cellular analog and digital wireless telecommunications electronics and communications equipment. Merrimac's products are also utilized in systems to receive and distribute television signals from satellites and through other microwave networks including cellular radio.

FILTRAN MICROCIRCUITS INC.

GENERAL

Established in 1983, Filtran Microcircuits, Inc. ("FMI") is a leading manufacturer of microwave micro circuitry for the high frequency communications industry. FMI produces microstrip, bonded stripline, and thick metal-backed Teflon(R) (PTFE) microcircuits for wireless telecommunications, including satellite, aerospace, PCS, fiber optic telecommunications, automotive, navigational and defense applications worldwide. FMI participates in the market for millimeter-wave applications, a technology experiencing high growth. Merrimac believes that FMI's technical capability and ability to provide the reliable processing required by customers enable it to address this market. FMI also supplies mixed dielectric multilayer and high speed interconnect circuitry to meet customer demand for high performance and cost-effective packaging.

FMI's strong technical team, proprietary processes and equipment allow FMI to manufacture precise circuits, with edge resolution of .0005 inch or better. The accuracy provided by FMI is particularly valued by customers in high-end applications who require microwave circuitry with significant reliability.

FMI, through its innovative processing, has developed a proprietary sodium etch formulation for plated-through hole ("PTH") and edge plating which gives tight control of processing, thereby easing the difficult process of achieving reliable plated through holes. FMI has also successfully pioneered sputtering techniques for PTH applications on thick-metal backed PTFE circuitry that offer superior reliability, performance and mechanical strength.

FMI has also achieved significant results in the area of accuracy of circuit board imaging. FMI employs specially developed processes using liquid photo-resists and high-intensity, collimated UV exposure techniques in fine line processing for single, double-sided and multi-layer PTH boards.

PRODUCTS

FMI produces precision microwave circuitry, having operating frequencies that typically range from 500 MHz to 100 GHz, through the processing of microstrip, bonded stripline, thick metal-backed PTFE and mixed dielectric multilayer. FMI also produces aluminum, copper and brass backed circuits. Although FMI generally purchases pre-bonded materials, it also has the capability to bond substrates to thick metal carriers when requested by customers. FMI also processes thin film circuits on hard substrates such as ceramic, ferrite and glass.

FMI has developed innovative processing that provides customers with reliable and high performance circuitry. FMI has the capability to process: (1) 1 mil lines and spaces with +/- .2 mil tolerance; (2) embedded resistors; (3) proprietary sodium etch formulation for reliable PTH and edge

plating; (4) proprietary sputtering techniques for blind holes in thick metal-backed PTFE; (5) proprietary copper Thin Film metallization on ceramic; (6) high purity, wire-bondable gold; (7) plated through hole aspect ratios up to 10:1; and (8) multi-layer bonding. FMI has machining capabilities in computer

numerically controlled routing, drilling, milling and laser machining. Machining tolerance ranges from +/- .005 inch to +/- .001 inch.

FMI maintains a quality assurance program which involves a stringent program of in-house inspection to assure that, when customers request specified standards based on certain needs, such as MIL-P-5510, IPC-RB-276 and IPC-HF-318, FMI meets such standards.

Worldwide applications include: millimeter wave (PCS backhaul, local and multipoint distribution systems automotive radar, sensors and point to multipoint), satellite, aerospace, automotive and defense.

MARKETING

The Company markets its products in the United States and Canada directly to customers through a marketing staff comprised of 14 employees, including five employees located at FMI in Ottawa, Canada, and through 22 independent domestic sales organizations. The Company utilizes 19 independent sales organizations to market its products elsewhere in the world. The Company's marketing program focuses on identifying new programs and applications for which the Company can develop prototypes leading to volume production orders.

Merrimac's customers are primarily major industrial corporations that integrate Merrimac's products into a wide variety of defense and commercial systems. Merrimac's customers include The Boeing Company, Raytheon Company, Northrop Grumman Corporation, Lockheed Martin Corporation, Loral Space & Communications Ltd., TRW, Inc. and General Dynamics Corporation. Sales to the foreign geographic area of Europe were 14.7% of net sales in 2001. Sales to any one foreign geographic area did not exceed 10% of net sales for 2000 and 1999. Sales to Lockheed Martin Corporation were 13.8%, 12.2% and 10% of net sales in 2001, 2000 and 1999, respectively. Sales to The Boeing Company (which acquired the space and communications business from Hughes Electronics Corporation, a former customer of the Company, in 2000) were 15.0% and 9.1% of net sales in 2001 and 2000, respectively. Pro forma combined sales to The Boeing Company and Hughes Electronics Corporation were 21.3% of net sales in 1999. In 1999, sales to The Boeing Company were 10.4% and sales to Hughes Electronics Corporation were 10.9% of net sales, respectively.

FMI's key customers include M/A Com, Inc., Raytheon Company, Filtronic Broadband Ltd., Arcom, Inc., VertiCom, Inc., Endwave Corporation, Sierra Technologies, Inc., Trak Microwave Corp., Thales Air Defence SA and Signal Technology Corporation.

Both Merrimac (www.merrimacind.com or www.multi-mix.com) and FMI (www.filtranmicro.com) have Internet addresses and have established a commercial presence on the World Wide Web. Merrimac's product catalog is available on its website.

EXPORT CONTROLS

The Company's products are subject to the Export Administration Regulations (the "EAR") administered by the U.S. Department of Commerce and may, in certain instances, be subject to the International Traffic in Arms Regulations (the "ITAR") administered by the U.S. Department of State. The EAR restrict the export of dual-use products and technical data to certain countries, while the ITAR

restrict the export of defense products, technical data and defense services. Merrimac believes that it has implemented internal export procedures and controls in order to achieve compliance with the applicable U.S. export control regulations. However, the U.S. government agencies responsible for administering the EAR and the ITAR have significant discretion in the interpretation and enforcement of these regulations, and it is possible that these regulations could adversely affect the Company's ability to sell its products to non-U.S. customers.

RESEARCH AND DEVELOPMENT

During fiscal 2001 and 2000, research and development expenditures amounted to $3,382,000 and $1,871,000, respectively. With the exception of $432,000 of expenses at FMI, substantially all of the research and development funds in fiscal 2001 were expended for new Multi-Mix(R) Microtechnology products. Merrimac plans to commit research and development funds at the same level in fiscal 2002, and will focus its efforts on new product development for specific customer applications requiring integration of circuitry and further miniaturization, precision and volume applications.

Merrimac's research and development activities include the development of prototypes for new programs and applications and the implementation of new technologies to enhance Merrimac's competitive position. Projects focusing on surface mounted devices, multilayer, and micro-electronic assemblies are directed toward development of more circuitry in smaller, lower cost, and more reliable packaging that is easier for customers to integrate into their products. Merrimac continues to expand its use of computer aided design and manufacturing (CAD/CAM) in order to reduce design and manufacturing costs as well as development time. Current research and development programs at FMI include: laser machining, resistors on organic materials, high-resolution circuit techniques, resistor trimming and electroless nickel on aluminum housings.

ENVIRONMENTAL REGULATION

Federal, state and local requirements relating to the discharge of substances into the environment, the disposal of hazardous waste and other activities affecting the environment have had and will continue to have an impact on Merrimac's manufacturing operations. Thus far, compliance with current environmental requirements has been accomplished without material effect on Merrimac's liquidity and capital resources, competitive position or financial statements, and management believes that such compliance will not have a material adverse effect on Merrimac's liquidity and capital resources, competitive position or financial statements in the future. Management cannot assess the possible effect of compliance with future requirements.

BACKLOG

Merrimac manufactures specialized components and subsystems pursuant to firm orders from customers and standard components for inventory. As of December 29, 2001, Merrimac had a firm backlog of orders of approximately $11,856,000. Merrimac estimates that approximately 90% of the orders in its backlog as of December 29, 2001 will be shipped within one year. Merrimac does not consider its business to be seasonal.

COMPETITION

Merrimac encounters competition in all aspects of its business. Merrimac competes both domestically and internationally in the military and commercial markets and specifically within the

aerospace and telecommunications areas. Merrimac's competitors consist of entities of all sizes. Occasionally, smaller companies offer lower prices due to lower overhead expenses, and generally, larger companies have greater financial and operating resources than Merrimac and well-recognized brand names. Merrimac competes with all such corporations on a basis of technological performance, quality, reliability and dependability in meeting shipping schedules as well as on the basis of price. Merrimac believes that its performance with respect to the above factors have served well in earning the respect and loyalty of many customers in the industry. These factors have enabled Merrimac over the years to successfully maintain a stable customer base and have directly contributed to Merrimac's ability to attract new customers.

MANUFACTURING, ASSEMBLY AND SOURCE OF SUPPLY

Manufacturing operations consist principally of design, assembly and testing of components and subsystems built from purchased electronic materials and components, fabricated parts, and printed circuits. Manual and semi-automatic methods are utilized depending principally upon production volumes. Merrimac has its own machine shop employing CAD/CAM techniques and etching facilities to handle soft and hard substrate materials. In addition, Merrimac maintains testing and inspection procedures intended to minimize production errors and enhance product reliability. Merrimac began manufacturing in Costa Rica in the second half of 1996. In January 1998, these operations were moved to a larger facility.

Effective January 2001, the Company modified its existing lease, and entered into a resource sharing arrangement with a previous customer, for its Costa Rica manufacturing facility.

In February 2001, the Company entered into a new five-year lease in Costa Rica for approximately 36,200 square-feet for a new Multi-Mix(R) Microtechnology manufacturing facility. It is anticipated that the leasehold improvements and capital equipment for this manufacturing facility, which is expected to cost approximately $4,500,000, should become operational during the second quarter of 2002.

FMI's manufacturing facility consists of CAD/CAM, chemical and mechanical processes, quality systems and R&D of bare circuit board materials specifically selected for high frequency applications. Manual and automatic methods are utilized depending upon the circuit volumes, complexity and existing technologies available to the printed wiring board industry. During the past year, FMI has added new equipment and procedures to reduce cost and improve efficiencies in operations. FMI received ISO 9002 certification in April 2001.

Microwave materials used in FMI's products are available from Rogers and Arlon. Laminate materials are available from a small number of qualified suppliers. The suppliers that provide materials to FMI specialize in the manufacture of microwave materials. Customers often direct FMI to use a particular vendor for laminates based upon particular design specifications.

During 1999, Merrimac implemented several programs to improve the efficiency of its manufacturing operations, reduce costs, foster continual improvement and improve customer satisfaction. Presently, Merrimac is continuing to establish and/or refine procedures and supporting documentation to enable the expedited transfer of product manufacture from prototype engineering to operational manufacturing. In October 1999, Factory Mutual Research awarded ISO

9001 certification to Merrimac's Multi-Mix(TM) Microtechnology Group manufacturing facility. In December 2000, they extended this award to the Company's RF/Microwave Products Group manufacturing facility. In April 2001, Factory Mutual Research awarded ISO 9002 certification to the Company's FMI manufacturing

facility in Ottawa, Canada. In October 2001, Factory Mutual recertified the Company's manufacturing subsidiary located in Costa Rica to ISO 9002. This location had obtained certification under a different Registrar prior to fiscal 1999.

Generally, Merrimac uses manufacturing cost savings to enhance its competitive position.

Electronic components and raw materials used in Merrimac's products are generally available from a sufficient number of qualified suppliers. Some materials are standard items. Subcontractors manufacture certain materials to Merrimac's specifications. Merrimac is not dependent upon any single supplier for any of its components or materials.

EMPLOYEE RELATIONS

As of December 29, 2001, Merrimac employed approximately 240 full time employees, including 60 employees at FMI and 50 employees at Merrimac's Costa Rica facilities. None of Merrimac's employees are represented by a labor organization. Management believes that relations with its employees are satisfactory.

PATENTS

As of March 27, 2002, Merrimac owns 8 patents with respect to certain inventions it developed. No assurance can be given that the protection that Merrimac has acquired through patents is sufficient to deter others, legally or otherwise, from developing or marketing competitive products. There can be no assurance that any of the patents will be found valid, if validity is challenged. Although Merrimac has from time to time filed patent applications in connection with the inventions which it believes are patentable, there can be no assurance that these applications will issue into patents.

ITEM 2. DESCRIPTION OF PROPERTY

Merrimac's administrative offices, research and principal production facilities are located in West Caldwell, New Jersey, on a five-acre parcel owned by Merrimac. A 12,000 square-foot plant was built in November 1966; a 13,500 square-foot addition was completed in December 1971; and a 26,500 square-foot addition was completed in July 1980, aggregating 52,000 square-feet presently. In February 2001, Merrimac began construction of an additional 19,200 square-foot manufacturing facility in West Caldwell, New Jersey, which is expected to be completed by the end of March 2002.

Merrimac owns all of its land, buildings, laboratories, production and office equipment, as well as its furniture and fixtures in West Caldwell, New Jersey. Merrimac believes that its plant and facilities are well suited for Merrimac's business and are properly utilized, suitably located and in good condition.

Effective January 2001, Merrimac modified its existing lease for a 17,000 square-foot manufacturing facility in Costa Rica by reducing the leased space to 8,200 square feet and extending the lease for the reduced space through December 2004. In February 2001, Merrimac also signed a new five-year lease for a 36,200 square-foot facility in Costa Rica, which will be exclusively devoted to manufacturing of the Multi-Mix(R) Microtechnology products.

In February 1999, Merrimac entered into a seven-year lease on a 20,000 square-foot manufacturing facility in Ottawa, Ontario, Canada in connection with Merrimac's acquisition of FMI.

ITEM 3. LEGAL PROCEEDINGS

Merrimac is a party to lawsuits, both as a plaintiff and a defendant, arising in the normal course of business. It is the opinion of Merrimac's management that the disposition of these various lawsuits will not individually or in the aggregate have a material adverse effect on the consolidated financial position or the results of operations of Merrimac.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

Not applicable.

PART II

ITEM 5. MARKET FOR COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Merrimac's Common Stock has been listed and traded on The American Stock Exchange since July 11, 1988, under the symbol MRM. As of March 22, 2002, Merrimac had approximately 200 holders of record. Merrimac believes there are approximately 1,500 additional holders in "street name" through broker nominees.

Reference is made to the table captioned "Quarterly Common Stock Data" in Merrimac's Annual Report to Stockholders for the Fiscal Year Ended December 29, 2001, filed as Exhibit 13 hereto (the "Annual Report"), which table is incorporated herein by reference, for information with respect to the high and low bid prices of Merrimac's Common Stock during the past two fiscal years.

Merrimac has not paid any cash dividends to its stockholders since the third quarter of 1997. The Board of Directors eliminated the dividend on August 28, 1997.

ITEM 6. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Reference is made to the information under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operations" of the

Annual Report, which information is incorporated herein by reference.

ITEM 7. FINANCIAL STATEMENTS

Reference is made to the information in the Consolidated Statements of Operations and Comprehensive Income (Loss), Consolidated Balance Sheets, Consolidated Statements of Stockholders' Equity, Consolidated Statements of Cash Flows, Notes to Consolidated Financial Statements and Report of Independent Public Accountants contained in the Annual Report, which information is incorporated herein by reference with respect to Merrimac's financial position as of December 29, 2001 and December 30, 2000, and the results of operations and cash flows for each of the three years in the period ended December 29, 2001 and the report of Arthur Andersen LLP. For unaudited selected quarterly financial data, see the table captioned "Quarterly Financial Information" contained in the Annual Report, which table is incorporated herein by reference.

ITEM 8. CHANGES IN AND DISAGREEMENTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

PART III

Pursuant to General Instruction E3 to Form 10-KSB, portions of information required by Items 9-12 and indicated below are hereby incorporated by reference to Merrimac's definitive Proxy Statement for the 2002 Annual Meeting of Stockholders (the "Proxy Statement") which Merrimac will file with the Securities and Exchange Commission not later than 120 days after the end of the fiscal year covered by this report.

ITEM 9. DIRECTORS, EXECUTIVE OFFICERS, PROMOTERS AND CONTROL PERSONS; COMPLIANCE WITH SECTION 16(A) OF THE EXCHANGE ACT

Information under the caption "Election of Directors" contained in the Proxy Statement with respect to the Board of Directors is incorporated herein by reference.

The following is a list of Merrimac's current executive officers, their ages and their positions. Generally, each executive officer is elected for a term of one year at the organizational meeting of the Board of Directors following the Annual Meeting of Stockholders.

NAME	AGE	POSITION
Mason N. Carter	55	Chairman, President and Chief Executive Officer
Robert V. Condon	55	Vice President, Finance, Treasurer, Secretary a
Richard E. Dec	58	Vice President, Business Development
Brian R. Dornan	53	Vice President and Chief Engineer, RF Microwave

Reynold K. Green	43	Vice President and General Manager, RF Microwav
Jayson E. Hahn	34	Vice President, Information Technology and Chie
James J. Logothetis	42	Vice President and Chief Technology Officer, Mu
Joseph McAndrew	47	Vice President and General Manager, Multi-Mix(R
Michael Pelenskij	41	Vice President, Operations RF Microwave Product
Dr. Kovilvila N. Ramachandran	61	President and Technical Director, FMI
Lawrence S. Ross	33	Vice President, Quality

FAMILY RELATIONSHIPS

There are no family relationships among the officers listed.

BUSINESS EXPERIENCE OF EXECUTIVE OFFICERS DURING PAST FIVE YEARS

Mr. Carter has served as Chairman of the Board since July 24, 1997, and President and Chief Executive Officer ("CEO") since December 16, 1996. From 1994 to 1996, he was President of the Products and Systems Group of Datatec Industries, Inc., Fairfield, New Jersey, a leading provider of data network implementation services.

Mr. Condon has been Vice President, Finance and Chief Financial Officer ("CFO") since joining Merrimac in March 1996 and was appointed Secretary and Treasurer in January 1997. Prior to joining Merrimac, he was with Berkeley Educational Services as Vice President, Finance, Treasurer and CFO from 1995 to February 1996.

Mr. Dec has been Vice President, Business Development in July 2000 after serving as Vice President, Marketing since joining Merrimac in March 1997. Prior to joining Merrimac, he was Vice President of Business Development of Kinley & Manbeck, Inc., a business process re-engineering and systems implementation consulting company, from April 1996 to March 1997. From 1995 to March 1996, he was National Account Manager, Product and Systems Group for Datatec Industries, Inc.

Mr. Dornan was appointed Vice President and Chief Engineer of the RF Microwave Products Group in December 2000 after serving as Vice President, Research and Development since February 1998. From October 1996 to February 1998 he served as Group Vice President of Technology and Engineering of Merrimac. He had been Group Vice President of Manufacturing from 1986 to October 1996.

Mr. Green was appointed Vice President and General Manager of the RF Microwave Products Group in January 2000. He was Vice President, Sales from March 1997 to January 2000 and Vice President of Manufacturing from April 1996 to March 1997. He was a member of the Board of Directors from April 1996 to May 1997 and did not seek re-election to the Board. Prior to April 1996, Mr. Green

held positions of Director of Manufacturing, National Sales Manager and Director of Quality Control and High-Reliability Services at Merrimac.

Mr. Hahn was appointed Vice President, Information Technology and Chief Information Officer in October 2000 after serving as Director, Network Services since June 1998. He served as Manager, Network Services from June 1997 to June 1998 and was Information Technology Support Specialist from December 1996 to June 1997. Prior to joining the Company, Mr. Hahn was with Berkeley Educational Services, where he held various Information Technology related positions from 1992 to November 1996.

Mr. Logothetis was appointed Vice President and Chief Technology Officer, Multi-Mix(R)Microtechnology Group in March 2002. Mr. Logothetis was appointed Vice President, Multi-Mix(R)Engineering in May 1998, after rejoining Merrimac in January 1997 to serve as Director, Advanced Technology. Prior to rejoining Merrimac, he served as a director for Electromagnetic Technologies, Inc. in 1995 and became Vice President of Microwave Engineering at such corporation in 1996. From 1984 through 1994, Mr. Logothetis had various engineering positions with Merrimac including Group Manager, Engineering.

Mr. McAndrew was appointed Vice President and General Manager, Multi-Mix(R) Microtechnology Group in March 2002. Mr. McAndrew was appointed Vice President, Multi-Mix(R) Operations in June 1999 after serving as Director of Manufacturing Engineering from 1997 to 1999. From 1984 through 1997, Mr. McAndrew held various engineering positions at Merrimac including Manager, Manufacturing and Process Engineering.

Mr. Pelenskij was appointed Vice President, Operations RF Microwave Products Group in January 2000 Company after serving as Director of Manufacturing of the Company from January 1999 to January 2000. Prior to January 1999, Mr. Pelenskij held the positions of Manager of Screened Components, RF Design Engineer, and District Sales Manager at the Company since joining the Company in 1993.

Dr. Ramachandran has been President of FMI since January 1996 and has been Technical Director of FMI since co-founding FMI in 1983. Dr. Ramachandran served as a member of FMI's Board of Directors prior to Merrimac's acquisition of FMI. Prior to 1983, Dr. Ramachandran held a position at the National Research Council of Canada.

Mr. Ross was appointed Vice President, Quality in January 2000 after serving as Director, Quality since joining the Company in March 1999. Prior to joining the Company, Mr. Ross was employed as Manager, Quality & Efficiency at Philips Consumer Electronics' Digital TV Group, a corporate design competency, from December 1998 to March 1999. From May 1997 to December 1998, Mr. Ross held the position of Corporate Quality Assurance Manager at General Bearing Corporation, a ball and taper roller bearing design and manufacturing company. From 1995 to 1997, he was Director, Quality and ISO Coordination for Mikron Instrument Company, a non-contact temperature measurement design and manufacturing company.

Information under the caption "Section 16 (a) Beneficial Ownership Reporting Compliance" contained in the Proxy Statement relating to compliance

with Section 16 of the Exchange Act is incorporated herein by reference.

ITEM 10. EXECUTIVE COMPENSATION

See the information under the caption "Executive Compensation" contained in the Proxy Statement, which information is incorporated herein by reference.

ITEM 11. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

See the information in the table and the notes thereto under the caption "Share Ownership of Directors, Executive Officers and Certain Stockholders" contained in the Proxy Statement, which information is incorporated herein by reference.

ITEM 12. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

See the information in the subheading "Certain relationships and related transactions" under the caption "Executive Compensation" contained in the Proxy Statement, which information is incorporated herein by reference.

ITEM 13. EXHIBITS AND REPORTS ON FORM 8-K

(a) Exhibits:

EXHIBIT NO.	DESCRIPTION
3(a)	By-laws of Merrimac are hereby incorporated by reference to Exhibit 3(ii)(b) to Post-Effective Amendment No. 2 to the Registration Statement on Form S-8 (No. 33-68862) of Merrimac dated February 23, 2001.
3(b)	Certificate of Incorporation of Merrimac is hereby incorporated by reference to Exhibit 3(i)(b) to Post-Effective Amendment No. 2 to the Registration Statement on Form S-8 (No. 33-68862) of Merrimac dated February 23, 2001.
4(a)	Stockholder Rights Agreement dated as of March 9, 1999, between Merrimac and ChaseMellon Stockholder Services, L.L.C., as Rights Agent, is hereby incorporated by reference to Exhibit 1 to Merrimac's Current Report on Form 8-K for the period ending March 9, 1999.
4(b)	Amendment No. 1 dated as of June 9, 1999, to the Stockholder Rights Agreement dated as of March 9, 1999, between Merrimac and ChaseMellon Stockholder Services, L.L.C., as Rights Agent, is hereby incorporated by reference to Exhibit 1 to Merrimac's Current Report on Form 8-K for the period ending June 9, 1999.
4(c)	Amendment No. 2 dated as of April 7, 2000, to the Stockholder Rights Agreement dated as of March 9, 1999, between Merrimac and ChaseMellon Stockholder Services,

	L.L.C., as Rights Agent, is hereby incorporated by reference to Exhibit 2 to Merrimac's Current Report on Form 8-K for the period ending April 10, 2000.
4(d)	Amendment No. 3 dated as of October 26, 2000, to the Stockholder Rights Agreement dated as of March 9, 1999, between Merrimac and ChaseMellon Stockholder Services, L.L.C., as Rights Agent, is hereby incorporated by reference to Exhibit 2 to Merrimac's Current Report on Form 8-K for the period ending October 27, 2000.
4(e)	Amendment No. 4 dated as of February 21, 2001, to the Stockholder Rights Agreement dated as of March 9, 1999, between Merrimac and Mellon Investor Services, L.L.C. (formerly known as ChaseMellon Stockholder Services, L.L.C.), as Rights Agent, is hereby incorporated by reference to Exhibit 1(d) to Merrimac's Current Report on Form 8-K for the period ending February 21, 2001.
4(f)	Amendment No. 5, dated February 28, 2002, to the Rights Agreement, between Merrimac and Mellon Investor Services LLC (f.k.a. ChaseMellon Shareholder Services, L.L.C.), as Rights Agent is hereby incorporated by reference to Exhibit 99.4 to Merrimac's Form 8-K for the period ending March 6, 2002.

EXHIBIT NO.	DESCRIPTION
10(a)	Stock Purchase and Exclusivity Letter Agreement dated April 7, 2000, among Ericsson Microelectronics, A.B., Ericsson Holdings International, B.V. and Merrimac is hereby incorporated by reference to Exhibit 10(a) to Merrimac's Quarterly Report on Form 10-QSB for the period ending August 15, 2000.
10(b)	Registration Rights Agreement dated as of April 7, 2000, between Merrimac and Ericsson Holding International, B.V. is hereby incorporated by reference to Exhibit 10(b) to Merrimac's Quarterly Report on Form 10-QSB for the period ending August 15, 2000.
10(c)	Profit Sharing Plan of Merrimac is hereby incorporated by reference to Exhibit 10(n) to Merrimac's Registration Statement on Form S-1 (No. 2-79455).*
10(d)	1983 Key Employees Stock Option Plan of Merrimac effective March 21, 1983, is hereby incorporated by reference to Exhibit 10(m) to Merrimac's Annual Report on Form 10-KSB for the year ending March 31, 1983.*
10(e)	1993 Stock Option Plan of Merrimac effective March 31, 1993, is hereby incorporated by reference to Exhibit 4(c) to Merrimac's Registration Statement on Form S-8 (No. 33-68862) dated September 14, 1993.*

10(f)	1997 Long-Term Incentive Plan of Merrimac is hereby incorporated by reference to Exhibit A to Merrimac's Proxy Statement for the period ending April 11, 1997.*
10(g)	Resolutions of the Stock Option Committee of the Board of Directors of Merrimac adopted June 3, 1998, amending the 1983 Key Employees Stock Option Plan of Merrimac, the 1993 Stock Option Plan of Merrimac and the 1997 Long-Term Incentive Plan of Merrimac and adjusting outstanding awards thereunder to give effect to Merrimac's 10% stock dividend paid June 5, 1998, are hereby incorporated by reference to Exhibit 10(f) to Merrimac's Annual Report on Form 10-KSB for the year ending March 30, 1999.*
10(h)(1)	1995 Stock Purchase Plan of Merrimac is hereby incorporated by reference to Exhibit A to the Proxy Statement of Merrimac for the period ending December 31, 1994.*
10(h)(2)	Resolutions of the Stock Purchase Plan Committee of the Board of Directors of Merrimac adopted June 3, 1998, amending the 1995 Stock Purchase Plan of Merrimac and adjusting outstanding awards thereunder to give effect to Merrimac's 10% stock dividend paid June 5, 1998, are hereby incorporated by reference to Exhibit 10(g)(2) to Merrimac's Annual Report on Form 10-KSB for the year ending January 2, 1999.*
10(i)(1)	1996 Stock Option Plan for Non-Employee Directors of Merrimac is hereby incorporated by reference to Exhibit 10(d) to Merrimac's Annual Report on Form 10-KSB for the year ending December 28, 1996.*

EXHIBIT NO.	DESCRIPTION
10(i)(2)	Resolutions of the Board of Directors of Merrimac, adopted June 3, 1998, amending the 1996 Stock Option Plan for Non-Employee Directors of Merrimac and adjusting outstanding awards thereunder to give effect to Merrimac's 10% stock dividend paid June 5, 1998, are hereby incorporated by reference to Exhibit 10(h)(2) to Merrimac's Annual Report on Form 10-KSB for the year ending January 2, 1999.*
10(j)	Amended and Restated Employment Agreement dated as of January 1, 1998, between Merrimac and Mason N. Carter is hereby incorporated by reference to Exhibit 10(a) to Merrimac's Quarterly Report on Form 10-QSB for the year ending July 4, 1998.*
10(k)	Amendment dated August 31, 2000 to the Amended and Restated Employment Agreement dated January 1, 1998, between Merrimac and Mason N. Carter is hereby

	incorporated by reference to Exhibit 10(a) to Merrimac's Quarterly Report on Form 10-QSB for the period ending September 30, 2000.*
10(l)	Amended and Restated Pledge Agreement dated as of May 4, 1998, between Merrimac and Mason N. Carter is hereby incorporated by reference to Exhibit 10(c) to Merrimac's Quarterly Report on Form 10-QSB for the period ending July 4, 1998.*
10(m)	Amended Promissory Note dated as of May 4, 1998, executed by Mason N. Carter in favor of Merrimac is hereby incorporated by reference to Exhibit 10(l) to Merrimac's Annual Report on Form 10-KSB for the year ending January 2, 1999.*
10(n)	Registration Rights Agreement dated as of May 4, 1998, between Merrimac and Mason N. Carter is hereby incorporated by reference to Exhibit 10(e) to Merrimac's Quarterly Report on Form 10-QSB for the period ending July 4, 1998.*
10(o)(1)	Form of Severance Agreement entered into with certain officers of Merrimac is hereby incorporated by reference to Exhibit 10(i) to Merrimac's Annual Report on Form 10-KSB for the year ending January 3, 1998.*
10(o)(2)	Schedule of officers with substantially identical agreements to the form filed as Exhibit 10(o)(1) hereto is hereby incorporated by reference to Exhibit 10(j) to Merrimac's Annual Report on Form 10-KSB for the year ending January 3, 1998.*
10(p)	Consulting Agreement dated as of January 1, 1998, between Merrimac and Arthur A. Oliner is hereby incorporated by reference to Exhibit 10 to Merrimac's Quarterly Report on Form 10-QSB for the period ending April 4, 1998.*
10(q)	Separation Agreement dated as of December 31, 1998, between Merrimac and Eugene W. Niemiec is hereby incorporated by reference to

EXHIBIT NO.	DESCRIPTION
	Exhibit 10(p) to Merrimac's Annual Report on Form 10-KSB for the year ending January 2, 1999.*
10(r)	Stockholder's Agreement dated as of October 30, 1998, between Merrimac and Charles F. Huber II is hereby incorporated by reference to Exhibit 10 to Merrimac's Quarterly Report on Form 10-QSB for the year ending October 3, 1998.
10(s)	Stockholder's Agreement dated as of June 3, 1999, among Merrimac, William D. Witter, Inc. and William D. Witter is

	hereby incorporated by reference to Exhibit 10 to Merrimac's Quarterly Report on Form 10-QSB for the period ending July 3, 1999.
10(t)	Subscription Agreement for Common Stock and Warrants dated October 26, 2000, between Merrimac and Ericsson Holding International, B.V. (with a form of Warrant attached) is hereby incorporated by reference to Exhibit 10(t) to Merrimac's Annual Report on Form 10-KSB for the year ending December 30, 2000.
10(u)	Registration Rights Agreement dated October 26, 2000, between Merrimac and Ericsson Holding International, B.V. is hereby incorporated by reference to Exhibit 10(u) to Merrimac's Annual Report on Form 10-KSB for the year ending December 30, 2000.
10(v)	Subscription Agreement for Common Stock and Warrants dated October 26, 2000, between Merrimac and certain entities and individuals related to Adam Smith Investment Partners, L.P. (with a form of Warrant attached) is hereby incorporated by reference to Exhibit 10(v) to Merrimac's Annual Report on Form 10-KSB for the year ending December 30, 2000.
10(w)	Registration Rights Agreement dated October 26, 2000, between

EXHIBIT NO.	DESCRIPTION
	Merrimac and certain entities and individuals related to Adam Smith Investment Partners, L.P. is hereby incorporated by reference to Exhibit 10(w) to Merrimac's Annual Report on Form 10-KSB for the year ending December 30, 2000.
10(x)	Subscription Agreement for Common Stock and Warrants dated October 26, 2000, among Merrimac, Edward H. Cohen, Joseph B. Fuller and Joel H. Goldberg (with a form of Warrant attached) is hereby incorporated by reference to Exhibit 10(x) to Merrimac's Annual Report on Form 10-KSB for the year ending December 30, 2000.
10(y)	Portions of Merrimac's Annual Report to Shareholders for Fiscal Year Ended December 30, 2000 is hereby incorporated by reference to Exhibit 13 to Merrimac's Annual Report on Form 10-KSB for the year ending December 30, 2000.
10(z)	Subsidiaries of Merrimac is hereby incorporated by reference to Exhibit 21 to Merrimac's Annual Report on Form 10-KSB for the year ending December 30, 2000.
10(aa)	2001 Key Employee Incentive Plan is hereby incorporated by reference to Exhibit 4.01 to Merrimac's Form S-8 (No. 333-63434) dated June 30, 2001.

10(bb)	2001 Stock Option Plan is hereby incorporated by reference to Exhibit 4.01 to Merrimac's Form S-8 (No. 333-63436) dated June 20, 2001.
10(cc)	2001 Stock Purchase Plan is hereby incorporated by reference to Exhibit 4.01 to Merrimac's Form S-8 (No. 333-63438) dated June 20, 2001.
10(dd)	2001 Amended and Restated Stock Option Plan is hereby incorporated by reference to Exhibit 4(i) to Merrimac's Quarterly Report on Form 10-QSB for the period ending June 30, 2001.
10(ee)	Subscription Agreement, dated February 28, 2002 between Merrimac and DuPont Chemical and Energy Operations, Inc., a subsidiary of E.I. DuPont de Nemours and Company is hereby incorporated by reference to Exhibit 99.2 to Merrimac's Form 8-K for the period ending February 28, 2002.
10(ff)	Registration Rights Agreement, dated February 28, 2002 between Merrimac and DuPont Chemical and Energy Operations, Inc., a subsidiary of E.I. DuPont de Nemours and Company is hereby incorporated by reference to Exhibit 99.3 to Merrimac's Form 8-K for the period ending February 28, 2002.
13	Portions of Merrimac's Annual Report to Stockholders for Fiscal Year Ended December 30, 2000.
21	Subsidiaries of Merrimac.
23	Consent of Arthur Andersen LLP.
99.1	Commission Letter.

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* Indicates that exhibit is a management contract or compensatory plan or arrangement.

(b) Reports on Form 8-K

A Current Report on Form 8-K was filed on March 6, 2002, reporting the purchase, by Dupont Electronic Technologies, of 16.6% of Merrimac's equity interest for a purchase price of approximately $5.3 million.

SIGNATURES

Pursuant to the requirements of Section 13 or 15 (d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

MERRIMAC INDUSTRIES, INC.
(Registrant)

Date: March 29, 2002 By: /s/ Mason N. Carter

Mason N. Carter
Chairman, President and
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Date	Title
/s/ Mason N. Carter --- (Mason N. Carter)	March 29, 2002	Chairman, President and Chief Executive Officer (Principal executive officer and Director)
/s/ Albert H. Cohen --- (Albert H. Cohen)	March 29, 2002	Director
/s/ Edward H. Cohen --- (Edward H. Cohen)	March 29, 2002	Director
/s/ Joseph B. Fuller --- (Joseph B. Fuller)	March 29, 2002	Director
/s/ Joel H. Goldberg --- (Joel H. Goldberg)	March 29, 2002	Director
/s/ David B. Miller --- (David B. Miller)	March 29, 2002	Director
/s/ Arthur A. Oliner --- (Arthur A. Oliner)	March 29, 2002	Director
/s/ Harold J. Raveche	March 29, 2002	Director

(Harold J. Raveche)		
/s/ Robert V. Condon (Robert V. Condon)	March 29, 2002	Vice President, Finance, Treasurer, Secretary and Chief Financial Officer (principal financial and accounting o