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

#### FORM 10-K

- [X] Annual report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended March 31, 1996
- [] Transition report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

#### COMMISSION FILE NUMBER: 01-26824

#### TEGAL CORPORATION

(Exact name of Registrant as specified in its charter)

DELAWARE 68-0370244
(State or other jurisdiction of incorporation or organization) Identification No.)

2201 SOUTH MCDOWELL BLVD., P.O. BOX 6020, PETALUMA, CALIFORNIA 94955-6020

(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (707) 763-5600

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT: NONE SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:

## COMMON STOCK, \$0.01 PAR VALUE

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file reports) and (2) has been subject to such filing requirements for the past 90 days.

## Yes [X] No[]

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not 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-K or any amendment to this Form 10-K. [X]

The aggregate market value of the voting stock held by non-affiliates of the Registrant, based on the closing sale price of the Common Stock on June 14, 1996, as reported on the Nasdaq National Market was \$27,750,451. As of June 14, 1996, 10,076,791 shares of the Registrant's Common Stock were outstanding.

#### DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for Registrant's 1996 Annual Meeting of Stockholders to be held on September 10, 1996 will be filed with the Commission within 120 days after the close of the Registrant's fiscal year and are incorporated by reference in Part III.

Total Pages 59. Index to Exhibits appears on page 55.

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## PART I

## ITEM 1. BUSINESS

Information contained or incorporated by reference herein contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, which can be identified by the use of forward-looking terminology such as "may," "will," "expect," "anticipate," "estimate" or "continue" or the negative thereof or other variations thereon or comparable terminology or which constitute projected financial information. The following contains cautionary statements identifying important factors with respect to such forward-looking statements, including certain risks and uncertainties, that could cause actual results to differ materially from those in such forward-looking statements.

### THE COMPANY

Tegal Corporation ("Tegal" or the "Company") designs, manufacturers, markets and services plasma etch systems used in the fabrication of integrated circuits ("ICs"). Etching constitutes one of the principal IC production process steps and must be performed numerous times in the production of an IC.

The Company was formed in December 1989 to acquire the operations of the former Tegal Corporation, a division of Motorola. The predecessor company was founded in 1972 and acquired by Motorola in 1978. The Company's current management was recruited in 1991.

## SEMICONDUCTOR INDUSTRY BACKGROUND

#### GROWTH OF SEMICONDUCTOR AND SEMICONDUCTOR EQUIPMENT INDUSTRIES

The semiconductor industry has experienced significant growth in recent years. This growth has resulted from the increasing demand for ICs from traditional IC markets, such as personal computers, telecommunications, consumer electronics, automotive electronics and office equipment, as well as the recently developing markets, such as multimedia, wireless communications and portable and network computing. As a result of this increased demand, semiconductor device manufacturers in recent years have expended significant amounts of capital to build new semiconductor fabrication facilities ("fabs")

and to expand existing fabs. In spite of the continuing growth in demand for semiconductors, the industry periodically experiences periods of excess supply and excess capacity as additions to capacity are brought online in large increments which exceed the short-term growth in demand for ICs such as has occurred in late 1995 and continues through the date of this report.

Growth in the semiconductor industry has been driven, in large part, by advances in semiconductor performance at a decreasing cost per function. Increasingly advanced semiconductor processing technologies allow semiconductor manufacturers to produce ICs with smaller features, thereby increasing processing speed and expanding device functionality and

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memory capacity. As ICs have become more complex, however, both the number and price of state of the art process tools required to manufacture ICs have increased significantly. As a result, the cost of semiconductor manufacturing equipment is becoming an increasingly large part of the total cost in producing advanced ICs. Today, the average state of the art dynamic random access memory (DRAM) fab costs from \$500 million to over \$1.0 billion, with semiconductor manufacturing equipment costs representing the majority of total fab costs.

#### SEMICONDUCTOR PRODUCTION PROCESSES

To create an IC, semiconductor wafers are subjected to a large number of complex process steps. The three primary steps in manufacturing ICs are (1) deposition, in which a layer of insulating or conducting material is deposited on the wafer surface, (2) photolithography, in which the circuit pattern is projected onto a light sensitive material (the photoresist), and (3) etch, in which the unmasked parts of the deposited material on the wafer are selectively removed to form the IC circuit pattern.

Each step of the manufacturing process for ICs requires specialized manufacturing equipment. Today, plasma etch systems are used for the great majority of etching processes. During a plasma etch process (also known as "dry etch"), a semiconductor wafer is exposed to a plasma composed of a reactive gas, such as chlorine, which etches away selected portions of the layer underlying the patterned photoresist layer.

#### SEGMENTATION OF THE ETCH MARKET

The Company believes that the dry etch market is becoming increasingly segmented. Certain dry etch technologies or processes are better suited for etching different types of materials (films) and, as a result, the dry etch market may be segmented according to the type of film being etched. In addition, as ICs become increasingly complex, certain etch steps required to manufacture a state of the art IC demand leading edge (or "critical") etch performance. For example, to produce a 64-megabit DRAM device, semiconductor manufacturers are required to etch certain device features at dimensions as small as 0.35 micron. Nonetheless, even in the most advanced ICs, a significant number of production steps can be performed with a significantly less demanding (or "non-critical") etch performance. As a result, the Company believes the etch market is also beginning to segment according to the required level of etch performance -- critical or non-critical.

Traditional Segmentation of the Etch Market by Film.

The dry etch market is generally segmented into the following market segments, defined according to the class of film being etched: polysilicon, oxide (dielectric) and metal. In 1995, the polysilicon, oxide and metal segments of the dry etch market represented approximately 33%, 42% and 25%, respectively, of the total sales of dry etch systems. New films are continually being developed in each of these three market segments.

Certain films present unique etch production problems. For example, the use of certain new films, such as platinum, currently being used in the development of high-density DRAM

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devices, and lead-zirconium-titinate (PZT), currently being used in the development of non-volatile, ferroelectric random access memory (FRAM) devices, is presenting new challenges to semiconductor manufacturers. While these new films contribute to improved IC performance, their unique properties make them

particularly difficult to etch and, therefore, require more advanced etch process technologies. Similarly, corrosion of metal etched wafers within 48 to 72 hours after completion of the etch process has been a chronic problem for semiconductor manufacturers, regardless of the line geometries involved. The reaction byproducts of a chlorine based metal etch process tend to redeposit on the wafer and corrode when exposed to water in the atmosphere. Removal of these contaminants from the wafer is essential to prevent this corrosion.

Emerging Segmentation of the Etch Market into Critical and Non-Critical Production Steps.

As device complexity has increased, the number of process steps required to manufacture a state of the art IC has increased dramatically. The Company estimates that a 64-megabit DRAM device requires more than 500 process steps, and the Company believes approximately 50 of these process steps are etch. Each etch step varies significantly in the degree of etch performance required to complete that step successfully. As a result, the Company estimates that approximately 20% to 25% of the etch systems currently required to produce a 64-megabit DRAM device need only provide non-critical etch performance.

Examples of non-critical etch processes involved in the production of a 64-megabit DRAM device include pad etching, zero layer etching and backside etching. The pad etching process involves the formation of relatively sizable areas, or pads, on which wires are bonded to attach to the metal leads of the IC's package. Pad etching typically requires a relatively large, non-critical etch 20 to 50 microns square. Zero layer etching, the etching of targets into the wafer for alignment of photolithography equipment, usually requires dimensions of 2 to 5 microns. Backside etching, in which the build-up of films resulting from the deposition process is removed from the backside of the wafer, has no dimensional requirement. Each of these process requirements has remained relatively constant over succeeding generations of IC devices, and the Company believes that these and many other non-critical etch processes currently required to produce state of the art ICs will remain non-critical for the foreseeable future.

Over time, the disparity in relative prices for etch systems capable of etching at non-critical versus critical dimensions has grown significantly. The Company believes that in 1993, the cost of an eight inch wafer-capable system ranged from approximately \$500,000 to \$700,000. Given the relatively modest price differential among etchers, manufacturers of ICs and similar devices tended to purchase one system, the one they believed provided the most technologically advanced solution for their particular etch requirements, to perform all their etching. In contrast, the cost today of an eight inch capable etch system ranges from approximately \$475,000, for reliable, non-critical etchers, to more than \$2.5 million, for advanced, state of the art etchers. Consequently, the company believes it is no longer cost effective to use state of the art etchers to perform both critical and non-critical etching.

As a result, the Company believes that semiconductor manufacturers will increasingly implement a "mix and match" purchasing philosophy to minimize their capital equipment expenditures by purchasing expensive, state of the art etch systems for their critical etch process requirements and less expensive, though reliable, etch systems for their non-critical etch requirements. When critical etching is required in the production process, the Company believes that the leading purchasing factor for a semiconductor manufacturer will continue to be, ultimately, the product's etch performance. When non-critical etching is required in the production process, the Company believes

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the leading system purchasing factor for a semiconductor manufacturer implementing a "mix and match" purchasing philosophy will be the overall product cost, with particular emphasis on the system's sale price. In either case, however, the semiconductor manufacturer is driven to make a value-oriented purchasing decision which minimizes the overall etch system costs, while meeting the required etch process performance. The Company believes that a well-implemented "mix and match" purchasing philosophy already adopted by a significant number of semiconductor manufacturers to minimize their expenditures for photolithography equipment, could allow a semiconductor manufacturer to realize significant etch system savings.

Tegal believes it currently has one of the largest installed bases of etch equipment in the industry and that over the years it has earned a reputation as a supplier of reliable, value-oriented etch systems. The Company's systems are sold throughout the world to both domestic and international customers. In fiscal 1996, approximately 63% of the Company's revenues resulted from international sales. To support its systems sales, the Company maintains local service and support in every major geographic market in which it has an installed base, backed up by a spares logistics system designed to provide delivery within 24 hours anywhere in the world.

The Company's objective is to build on its technical knowledge, experience and reputation in the etch industry, as well as its established sales, marketing and customer service infrastructure, to be a leading supplier of etch systems for both the critical and non-critical segments of the etch market. To meet this objective, the Company is implementing a business strategy incorporating the following elements:

- Use the performance capabilities and value positioning of the Company's 6500 series systems to penetrate the critical etch market for polysilicon, metal and emerging film etch applications;
- Use the Company's existing installed base and established customer relationships to increase sales of both non-critical and critical etch systems to its existing customers;
- Lever the Company's reputation as a supplier of value-oriented, non-critical etch systems to sell such systems to new customers implementing a "mix and match" purchasing philosophy, and follow such sales by aggressively marketing critical etch systems to these customers; and
- Continue to focus research and development efforts on identifying and designing critical etch system solutions to address new or unsatisfied etch process requirements, particularly selected etch applications where the Company believes its process technologies and development experience provide it with a competitive advantage.

#### 6 TEGAL'S CRITICAL ETCH SOLUTION

The Company believes a value-oriented critical etch system must be designed to (i) provide high performance critical etching, (ii) deliver a high average wafer throughput, (iii) minimize up-front investment costs, (iv) minimize operating costs and (v) provide a solution for the production of multiple generations of ICs. In 1991, the Company began developing a new generation of technology and systems in order to provide a value-oriented system solution for future critical etch needs, especially in the polysilicon and metal segments of the etch market. In July 1994, the Company introduced its 6510 system, designed for polysilicon etch applications at the sub 0.5 micron level. In July 1995, the Company introduced its 6520 system, designed for metal etch applications, and its 6540 system, designed for new, emerging film etch applications.

Provide for High Performance Critical Etch.

A high performance critical etch system must etch features with anisotropic profiles (i.e. straight, vertical sidewalls) while etching selectively, to minimize damage to the underlayer or other wafer materials, and etching uniformly over a non-uniform area. These performance requirements become increasingly difficult to achieve at critical etch line geometries, especially the 0.5 micron and smaller line geometries required by current, state of the art ICs. The Company believes that its High-density Reflected electron ("HRe-") process chamber, incorporating a low pressure, high density, low energy plasma source and its patented tri-electrode energy source, produces the straight, vertical etching and high selectivity required to provide superior etch performance at these critical line geometries. In addition, the Company's 6520 metal etch system incorporates a patent-pending etch-rinse-strip-rinse process sequence which, the Company believes, provides a system solution for many of the corrosion problems common to metal etch applications.

#### Deliver a High Average Throughput.

Throughput is a measure of the number of wafers a particular system can etch in a given period of time. The industry has usually measured a system's throughput in terms of the number of wafers processed per hour. A system with a high hourly throughput, however, may have a significantly lower average throughput over the long term depending upon system design and durability. As a result, the Company believes that a value-oriented system must deliver not only a high hourly throughput but also, and perhaps more importantly, a high average system throughput over the long term. Due to the corrosive nature of the etch process, etching produces a large amount of contaminants and erodes process chamber parts (consumables). Therefore, in order to deliver the precision and repeatability necessary for superior etch results, etch systems require periodic cleaning and maintenance. The 6500 series system architecture is designed so that only six of the Company's HRe- process chamber parts are exposed to the corrosive etch plasma. These six parts are designed to be easily removable and replaceable in order to allow for off-line cleaning and to minimize disruption to the etch process. In addition, the Company's HRe-process chamber incorporates a high speed vacuum pump located above and close to the wafer surface in order to remove contaminants from the chamber more effectively, resulting in a cleaner etch process and relatively fewer scheduled cleanings. Finally, the Company's 6500 series system is designed to maximize reliability in order to minimize unscheduled maintenance down-time.

#### Minimize Up-front Investment Costs.

While performance remains crucial to purchasing decision in the critical etch segment, cost containment pressures are causing semiconductor manufacturers to demand critical etch performance with lower up-front investment cost.

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Consequently, a value-oriented critical etch system must sell for an attractive price, relative to comparable etch systems. A value-oriented system should also be designed to minimize installation costs, which can be substantial, and should have a small "footprint" (the production area occupied by the system) to maximize the efficient use of limited, expensive fab production space. The Company believes the design of its 6500 series systems allows the Company to sell these systems at prices which are generally significantly below the prices of comparable systems offered by the Company's competitors. The Company has also designed its 6500 series systems to minimize the time and expense required for system installation. In addition, with a footprint of only 32 square feet, the 6500 series system occupies substantially less production space than any comparable critical etch system currently offered in the market.

## Minimize Operating Costs.

Given the complexity of the critical etch process, the costs of operating a critical etch system can be substantial. A significant portion of overall operating costs relates to the cost of servicing and replacing consumables, or process chamber parts destroyed in the corrosive etch production process. A value-oriented system, therefore, must be designed to minimize consumables. In the Company's HRe-process chamber only six process chamber parts are exposed to the corrosive plasma. In addition, the Company believes a magnetic field designed to concentrate the plasma over the wafer also has the effect of protecting process chamber parts from the corrosive plasma. As a result of its process chamber design, the Company believes its 6500 series systems have significantly lower consumables costs than its competitors' current systems.

Provide Solutions for Multiple Generations of Device Production Requirements.

The Company also believes that a value-oriented critical etch system should be responsive not only to the manufacturers' current etch requirements, but also should be capable of delivering the etch performance required for the production of multiple generations of ICs in order to maximize the useful life of the system. As ICs continue to become increasingly complex, production requirement will demand 0.25 micron and smaller processing technology. Systems that have not been designed to meet these demands will eventually need to be replaced at a significant expense. The Company's 6510 system has demonstrated the ability to etch polysilicon at 0.18 micron and the Company's 6520 system has

demonstrated the ability to etch metal at 0.25 micron. As a result, the Company believes its 6500 series systems will continue to provide solutions for future polysilicon and metal etch requirements.

#### TEGAL'S NON-CRITICAL ETCH SOLUTION

The Company believes that its 900 and 980 systems provide a value-oriented non-critical etch solution for etch applications on polysilicon, metal and oxide films. The Company introduced its 900 series etch system in 1984 and since that time has sold more than 1,200 of these systems worldwide. The Company believes that the durability and performance of its 900 series systems have earned the Company a reputation as a leading non-critical etch system supplier. The 900 series as originally designed, however, was capable of etching only six inch and smaller wafers and, therefore, did not address the needs of the eight inch wafer market. As a result, the Company expanded its non-critical product offerings in July 1994 with the introduction of its eight inch wafer capable 980 system. The Company introduced an enhanced 980 system in July 1995 which has a smaller footprint and provides higher throughput and improved yields as compared to the prior 980 system design. The Company's 900 and 980

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systems sell for a typical price of \$350,000 and \$490,000, respectively. The Company believes that these systems provide some of the best values currently available on the market for the large number of non-critical etch steps required to produce today's state of the art ICs. The Company intends to market its 900 and 980 systems aggressively as value-oriented solutions for the developing non-critical market segment. The Company will also seek to lever its large installed base of non-critical etch systems with its existing customers in order to sell them not only additional non-critical etch systems, but also critical etch systems.

#### **TECHNOLOGY**

In 1991, the Company began developing a new generation of technology for leading edge etch requirements, especially in the polysilicon and metal segments of the market. The Company's product development efforts culminated in the Company's HRe- process chamber and its etch-rinse-strip-rinse ("E-R-S-R") process sequence, incorporated into the Company's 6520 systems for metal etch applications and offered as an option on its 6540 systems for emerging film etch applications.

## HRe- PROCESS CHAMBER

The HRe- process chamber, formally introduced in April 1993, incorporates advances in five interrelated areas: (i) the plasma source, (ii) control of electrical energy flow, (iii) gas flow technology, (iv) process chamber design, and (v) gas chemistries and recipes.

### HRe- Plasma Source.

The Company's HRe- plasma source includes a magnetic field which contains the plasma at a low pressure, high density and low energy. For sub 0.5 micron devices, the plasma source must operate at a low pressure with a high density of activated gases at the wafer and a low energy in order to deliver superior etch results. A low pressure plasma improves the overall quality of the etch by minimizing the undercutting of wafer features as well as the effects of microloading (etching concentrated features more rapidly than less concentrated features), both of which adversely affect overall yield. Low pressure, however, requires a high density plasma at the wafer to increase the number of plasma particles reacting with the film being etched in order to maintain a fast etch rate. A fast etch rate is one factor leading to a higher average throughput. Low ion energy leads to improved etch selectivity and minimizes wafer damage, both of which improve overall yield.

## Tri-electrode Control System.

The Company's patented tri-electrode control system is designed to direct most of the electrical energy flow through the side wall of the etch chamber instead of the wafer. As a result, only four to eight watts of energy generally flow through wafers processed in the Company's HRe- chamber, as compared to 200 to 500 watts in most major competitors' systems. High energy levels flowing through the wafer can result in uncontrolled wafer overheating,

which can lead to wafer damage. As a result, many of the Company's competitors are forced to include process technology designed to cool their wafers to avoid such damage. In contrast, the Company's tri-electrode control system controls energy flows through the wafer to such an extent that the process chamber actually heats the wafer by non-electrical means to help evaporate the solids and eliminate particles and residues on the wafer surface. The Company believes that less energy flowing through the wafer allows the HRe- process chamber to be used for a large variety of films. In addition, lower wafer

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temperatures allow the use of traditional masking materials instead of requiring newly developed hard masking materials. Hard masking materials require additional process steps to remove.

#### Gas Flow Technology.

In order to maintain high etch rates, it is essential to maintain a fresh supply of activated gases. Similarly, consumed gases and evaporated materials must be removed from the etch chamber as quickly as possible to minimize condensation on the wafer and chamber surfaces. To maximize the removal of consumed gases and evaporated materials, the HRe- process chamber incorporates a high-speed pump located close to, and directly above, the wafer surface. The company believes that its process chamber has one of the highest gas flow rates in the industry. The Company designed the HRe- etch chamber to be small in volume with a high gas flow rate in order to allow the evaporated materials less time to condense on the surface of the wafer and chamber, resulting in a cleaner etch process. A cleaner etch process requires less frequent chamber cleaning and maintenance, thereby maximizing processing time and average throughput.

#### Process Chamber Design.

Given the corrosive nature of the high density etch process, consumables (i.e. chamber parts eroded by the etch process) have historically resulted in significant repair and down-time costs for semiconductor manufacturers. The HRe- process chamber was designed so that only six chamber parts, as compared to many more in most competitors' current systems, contact the chamber's corrosive environment. All six chamber parts have been designed to be easily removed and replaced to allow for off-line cleaning and minimal disruption of processing time.

## Chemistries and Recipes.

Each different film being etched requires a different etch chemistry or "recipe" which generally consists of two or three of the following gases: Chlorine, bromine, fluorine and argon. Development of the optimal etch recipe for a given film is an experimental science in which the Company has a large degree of experience due to its large installed base of applications and experienced applications engineers.

## "E-R-S-R" PROCESS SEQUENCE

Corrosion of metal etch wafers within a 48 to 72 hour period following completion of the etch process has been a chronic problem for semiconductor manufacturers performing metal etch applications, regardless of the line geometries involved. In order to address this corrosion problem, the Company's 6520 system for critical metal applications has been designed to incorporate an etch-rinse-strip-rinse ("E-R-S-R") process sequence for which the Company has filed a patent application. The Company believes that rinsing the wafer prior to the strip process significantly reduces corrosion by removing the chlorinated metal contaminants from the wafer surface before they can react with the air to form the acids which corrode the metal lines. In addition, removal of reaction byproducts before the strip process prevents the chlorinated metals from oxidizing to form metal residues which become water insoluble as a byproduct of the stripping process. The Company believes that additional time consuming processing steps are required to remove these post metal etch-strip residues, thereby adding to total production cycle time and capital equipment cost. The Company believes that no other system on the market today is capable of providing this on-line process sequence. Most other competitive critical etch systems are designed to provide only an etch-strip-rinse process sequence, if they provide a rinse process at all. As a result, the Company believes that its 6520 HRe- metal etch system, with its

E-R-S-R process sequence, greatly reduces residue contamination and increases wafer throughput, while reducing capital costs and clean room floorspace requirements. The Company believes that this E-R-S-R process sequence may also prove beneficial to certain emerging film applications and, therefore, intends to provide this process sequence as an option on its 6540 systems for emerging films and on its 6510 systems for polysilicon side wall veil removal.

#### **PRODUCTS**

Critical Etch Products.

The following table sets forth certain features and performance characteristics of the Company's 6500 series critical etch products:

#### CRITICAL ETCH SYSTEMS <TABLE> <CAPTION> 6540 **FEATURES** 6510 6520 <C> <C> $\langle S \rangle$ Applications POLYSILICON **METALS** EMERGING FILMS - Isolation Trench - Aluminum/Copper - Lead Zirconium Titinate - Silicides - 5 Layer Composite - Platinum - Selective Nitride Films with Aluminum - Iridium - Aluminum/Silicon/Titanium Platform 2 chamber 2 chamber 2 chamber 4"-8" wafer 4"-8" wafer 4"-8" wafer **Footprint** 32 sq. ft. 32 sq. ft. 32 sq. ft Typical Sales Price \$1.3-1.5 million \$1.5-1.8 million \$1.5-2.0 million Introduction July 1994 July 1995 July 1995 </TABLE>

The Company's 6500 series systems have been engineered to provide process flexibility and competitive throughput for wafers up to eight inches, while minimizing cost and space requirements. A dual chamber platform design allows for either parallel or integrated etch processes. The Company seeks to maximize the 6500 series systems' average throughput by incorporating a process chamber technology and system architecture designed to minimize processing down-time required for cleaning and maintenance. Each 6500 series system has a central wafer handling system with full cassette (25-wafer) vacuum loadlocks, noncontact optical wafer alignment and a vacuum transport system. Individual process module servicing is possible without shutting down the system or other chambers. Contamination control features in the 6500 series systems include pick and place wafer handling with no moving parts above the wafer, four-level vacuum isolation from the atmosphere to the etch chamber, and individual high-throughput, turbo-pumped vacuum systems for the cassettes, wafer handling platform and each process module. These and other features of the 6500 series are designed to enable a semiconductor manufacturer to reduce wafer particle contamination to a level which the Company believes exceeds industry standards and to improve etch results and process flexibility.

In addition, the Company's 6500 series systems incorporate a software system which is designed to be robust and easy to use. This software system incorporates a software architecture designed to operate in multiple interface modes, including operator, maintenance engineer, process engineer and diagnostic modes. Features include icon-based touchscreen menus for ease of use. In addition, the software provides a quick-response interface which allows the semiconductor manufacturer access to all necessary system information for factory automation. The system includes data archiving and remote, real time diagnostics.

Non-Critical Etch Products.

The following table sets forth certain features and performance

characteristics of the Company's 900 and 980 series non-critical etch products:

#### NON-CRITICAL ETCH SYSTEMS

<TABLE> <CAPTION>

**FEATURES** 900 980 <S>

Applications Backside Backside

Nitride Nitride Pad Pad

Planarization Planarization Zero Layer Zero Layer

Flat Panel

Platform 1 chamber 1 chamber

> 3"-6" wafer 5"-8" wafer

**Footprint** 10 sq. ft. 14. sq. ft

\$490,000 Typical Sales \$350,000

Price

Date of May 1984 July 1994

Introduction </TABLE>

The 900 and 980 series systems incorporate a single diode process chamber on a non-loadlocked modular platform for reliability and ease of maintenance, which the Company believes results in higher average throughput and lower operating costs. Continued improvements in both reliability and performance have enabled the Company to offer the 900

and 980 series systems as a solution for non-critical applications involving linewidths of 0.8 micron and greater.

## **CUSTOMERS**

The Company sells its systems to semiconductor manufacturers throughout the world. Major customers over the last three fiscal years have included the following:

<TABLE>

<S><C> AT&T Rohm

Austria Mikro Systeme International SGS-Thomson Microelectronics

Bosch Samsung Cray Research Seiko **EMM** SEL

Hewlett-Packard Shanghai Belling

Siemens Holtek Integrated Device Technology Sony

International Rectifier - Hex Fet America Taiwan Semiconductor Manufacturing Co.

Linear Technology Telcom Semiconductor

United Microelectronics Corporation Macronix

Motorola VLSI Technology Newport Wafer Fab Winbond

</TABLE>

All of these customers except Cray Research, Macronix, Siemens and Taiwan Semiconductor Manufacturing Company ordered one or more systems from the Company in fiscal 1996. The composition of the Company's top five customers has changed from year to year, but net system sales to the Company's top five customers in each of fiscal 1996, 1995 and 1994 accounted for 48.6%, 54.3% and 48.5%, respectively, of the Company's total net system sales. Sony and Motorola represented 16.3% and 14.9%, respectively, of the Company's net system sales in fiscal 1996. Motorola and SGS-Thomson Microelectronics represented 18.5% and 17.2%, respectively, of the Company's net system sales in fiscal 1995. Sony represented 11.9% of the Company's net system sales in fiscal 1994. Other than the above customers, no single customer represented more than 10% of the Company's net system sales in fiscal 1996, 1995 or 1994. Although the

composition of the group comprising the Company's largest customers may vary from year to year, the loss of a significant customer or any reduction in orders by any significant customer, including reductions due to market, economic or competitive conditions in the semiconductor manufacturing industry, may have a material adverse effect on the Company's business, financial condition and results of operations.

#### **BACKLOG**

The Company schedules production of its systems based upon order backlog and customer commitments. The Company includes in its backlog only orders for which written authorizations have been accepted and shipment dates within the next 12 months have been assigned. As of March 31, 1996 and 1995 the Company's order backlog was approximately \$16.5 million and \$11.4 million, respectively. Systems orders are subject to cancellation by the customer, but with substantial penalties other than in the case of orders for evaluation systems or for systems which have not yet incurred production costs. Orders may be subject to rescheduling

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with limited or no penalty. Some orders are received for systems to be shipped in the same quarter as the order is received. Because of the factors just mentioned, the Company's backlog at any particular date is not necessarily indicative of actual sales for any succeeding period.

#### MARKETING, SALES AND SERVICE

The Company sells its systems worldwide through a network of 15 direct sales representatives and 16 independent sales representatives in 17 sales offices located throughout the world. In the United States, the Company markets its systems through direct sales personnel located in its Petaluma, California headquarters, two regional sales offices and through two independent sales representatives. In addition, the company provides field service and applications engineers out of three regional offices and its Petaluma headquarters in order to ensure dedicated technical and field process support throughout the United States on short notice.

The Company maintains sales, service, and process support capabilities in Japan, Taiwan, France and Germany and service/support operations in Austria, China, Italy, Singapore and the United Kingdom. In addition to its international direct sales and support organizations, the company markets its systems through independent sales representatives in China, India, Israel, Italy, Korea, Taiwan and the United Kingdom.

International sales, which consist of export sales from the United States either directly to the end user or to one of the Company's foreign subsidiaries, accounted for 63.2%, 62.7% and 67.6% of total revenue for fiscal 1996, 1995 and 1994, respectively. The Company generally sells its systems on 30-to-60 day credit terms to its domestic and European customers. Customers in Pacific Rim countries, other than Japan, are generally required to deliver a letter of credit payable in U.S. dollars upon system shipment. Sales to other international customers, including Japan, are either billed in local currency or U.S. dollars. The Company anticipates that international sales will continue to account for a significant portion of revenue in the foreseeable future. International sales are subject to certain risks, including the imposition of government controls, fluctuations in the U.S. dollar (which could increase the sales price in local currencies of the Company's systems in foreign markets), changes in export license and other regulatory requirements, tariffs and other market barriers, political and economic instability, potential hostilities, restrictions on the export or import of technology, difficulties in accounts receivable collection, difficulties in managing distributors or representatives, difficulties in staffing and managing international operations and potentially adverse tax consequences. There can be no assurance that any of these factors will not have a material adverse effect on the company's business, financial condition and results of operations.

The Company generally warrants its new systems for 12 months and its refurbished systems for six months from shipment. Installation is included in the price of the system. The Company's field process engineers provide customers with call-out repair and maintenance services for a fee. Customers may also enter into repair and maintenance service contracts covering the Company's systems. The Company trains customers' service engineers to perform routine

service for a fee and provides telephone consultation services generally free of charge.

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The sales cycles for the company's systems vary depending upon whether the system is an initial design-in, reorder or used equipment. Initial design-in sales cycles are typically 12 to 18 months, particularly for 6500 series systems. In contrast, reorder sales cycles are typically four to six months, and used system sales cycles are generally one to three months. The initial design-in sales cycle begins with the generation of a sales lead, which is followed by qualification of the lead, an analysis of the customer's particular applications needs and problems, one or more presentations to the customer, frequently including extensive participation by the Company's senior management, two to three wafer sample demonstrations, followed by customer testing of the results and extensive negotiations regarding the equipment's process and reliability specifications. Initial design-in sales cycles are monitored by senior management for correct strategy approach and prioritization. The Company may need to provide the customer with an evaluation critical etch system for three to six months prior to the receipt of a firm purchase order.

#### RESEARCH AND DEVELOPMENT

The market for semiconductor capital equipment is characterized by rapid technological change. The Company believes that continued and timely development of new systems and enhancements to existing systems is necessary for it to maintain its competitive position. Accordingly, the Company devotes a significant portion of its personnel and financial resources to research and development programs and seeks to maintain close relationships with its customers in order to be responsive to their system needs.

The Company's research and development encompasses the following areas: plasma technology, process characterization and development, material sciences applicable to the etch environment, system design and architecture, electro-mechanical design and software engineering. Management emphasizes advanced plasma and reactor chamber modeling capabilities in order to accelerate bringing advanced chamber designs to market. The company employs multi-discipline teams to facilitate short engineering cycle times and rapid product development. There can be no assurance that the Company will be able to develop, introduce or sell new and enhanced systems. In particular, if the 6500 series does not achieve significant sales or volume production due to a lack of customer acceptance, inability to correct technical, manufacturing or other difficulties which may develop with this series, or for any other reason, the Company's business, financial condition and results of operations would be materially adversely affected.

As of March 31, 1996, the Company had 74 full-time employees dedicated to equipment design engineering, process support and research and development. Research and development expenses for fiscal 1996, 1995 and 1994 were \$10.0 million, \$8.1 million and \$7.4 million, respectively, and represented 16.1%, 18.1% and 19.3% of total revenue, respectively. Such expenditures were used for the development of new systems and the continued enhancement and customization of existing systems. The Company expects that research and development expenses will continue to increase through fiscal 1997.

The Company has recently completed a contract with SEMATECH, a United States semiconductor industry consortium, to measure the reliability and process performance of the Company's 6510 series system at 0.35 and 0.25 micron line geometries on polycilicides. More

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than 30,000 wafers were cycled through the 6500 system with full process in a series of three IRONMAN (Improving Reliability of New Machines At Night) tests. The Company met or exceeded each of the reliability and process result objectives of that contract.

#### MANUFACTURING

The Company's etch systems are produced at its headquarters in Petaluma, California. The Company's manufacturing activities consist of assembling and testing components and sub-assemblies which are then integrated into finished systems. The Company has structured its production facility to be driven either by orders or by forecasts and has adopted a modular system

architecture to increase assembly efficiency and design flexibility. The Company has also implemented "just-in-time" manufacturing techniques in its assembly processes. The Company believes that improvements in manufacturing processes have allowed the Company to reduce significantly its non-critical system manufacturing cycle times. Non-critical system manufacturing cycle times, which typically took nearly three months in 1990, now take approximately 14 days. The Company's cycle times for its critical etch products are currently two to three months. The Company seeks to improve these cycle times as the Company continues to manufacture 6500 systems.

The Company procures certain components and sub-assemblies included in its systems from a limited group of suppliers, and occasionally from a single source supplier. In particular, the Company is dependent upon MECS, a robotic equipment supplier, as the sole source for the robotic arm used in all of its 6500 series systems. The Company currently has no existing supply contract with MECS, and the Company currently purchases all robotic assemblies from MECS on a purchase order basis. Disruption or termination of certain of these sources, including its robotic sub-assembly source, could have an adverse effect on the Company's operations. While the Company believes that alternative sources could be obtained and qualified to supply these components or sub-assemblies, a prolonged inability to obtain such components or sub-assemblies, receipt of defective components or sub-assemblies, as well as difficulties or delays in shifting to alternative sources could have a material adverse effect on the Company's operating results and could damage customer relationships.

#### **ENVIRONMENTAL MATTERS**

The Company is subject to a variety of governmental regulations related to the use, storage, handling, discharge or disposal of toxic, volatile or otherwise hazardous chemicals used in the manufacturing process. The Company believes that it is currently in compliance in all material respects with these regulations and that it has obtained all necessary environmental permits to conduct its business, which permits generally relate to the discharge of hazardous wastes. Nevertheless, the failure to comply with present or future regulations could result in fines being imposed on the Company, suspension of production, alteration of the Company's manufacturing processes, or cessation of operations. Such regulations could require the Company to acquire expensive remediation equipment or to incur other expense to comply with environmental regulations. Any failure by the Company to control the use, disposal or storage of, or adequately restrict the discharge of, hazardous substances could subject the Company to future liabilities.

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## COMPETITION

The semiconductor capital equipment industry is highly competitive. The Company believes that the principal competitive factor in the critical segment of the etch industry is technical performance of the system, followed closely by the existence of customer relationships, the overall system price, the ability to provide service and technical support on a global basis and other related cost factors. The Company believes that the principal competitive factor in the non-critical segment of the etch industry is system price, followed closely by the technical performance of the system, the existence of established customer relationships, the ability to provide service and technical support on a global basis and other related cost factors.

The Company believes that to be competitive, it will require significant financial resources in order to offer a broad range of systems, to maintain customer service and support centers worldwide and to invest in research and development. Many of the Company's existing and potential competitors, including, among others, Applied Materials, Inc., Lam Research Corporation, Hitachi Ltd. and Tokyo Electron Limited, have substantially greater financial resources, more extensive engineering, manufacturing, marketing and customer service and support capabilities, larger installed bases of current generation etch and other production equipment and broader process equipment offerings as well as greater name recognition than the Company. The Company expects its competitors to continue to improve the design and performance of their current systems and processes and to introduce new systems and processes with improved price and performance characteristics. No assurance can be given that the Company will be able to compete successfully in the United States or worldwide.

A substantial investment is required to install and integrate capital

equipment into a semiconductor production line. The Company believes that once a device manufacturer has selected a particular vendor's capital equipment, that manufacturer generally relies upon that vendor's equipment for the specific production line application and, to the extent possible, subsequent generations of similar systems. Accordingly, it may be extremely difficult to achieve significant sales to a particular customer once another vendor's capital equipment has been selected by that customer unless there are compelling reasons to do so, such as significant performance or cost advantages. Certain of the Company's competitors have entered into strategic relationships or alliances with leading semiconductor manufacturers, particularly with respect to the current generation of devices at 1.0 to 0.5 micron line geometries for which the Company did not offer competitive systems at the time buying decisions were made. If such relationships or alliances cover etch equipment similar to those sold by the Company, the Company's ability to sell its 6500 series systems would be adversely affected. In addition, certain of the Company's competitors may seek to sell, as an attractively priced package, etch equipment together with other process equipment, such as deposition equipment. Furthermore, some semiconductor manufacturers may have already made initial buying decisions for the next generation of sub-0.5 micron etch requirements. Any failure to gain access and achieve sales to new customers will adversely affect the successful commercial introduction of the Company's 6500 series systems and would have a material adverse effect on the Company's business, financial condition and results of operations.

## INTELLECTUAL PROPERTY

The Company holds an exclusive license to 26 United States patents, including its tri-electrode control system, and 21 corresponding foreign patents covering various aspects of its systems. The Company does not currently hold any patents directly, although it has applied for two patents, including one for its E-R-S-R process sequence. The Company believes that the duration of such patents generally exceed the life cycles of the technologies disclosed and claimed therein. The Company believes that although the patents it has exclusively licensed will be of value, they will not determine the Company's success, which depends principally upon its engineering, marketing, service and manufacturing skills. However, in the absence of patent protection, the Company may be vulnerable to competitors who attempt to imitate the Company's systems or processes and manufacturing techniques and processes. In addition, other companies and inventors may receive patents that contain claims applicable to the Company's systems and processes. The sale of the Company's systems covered by such patents could require licenses that may not be available on acceptable terms, if at all. The Company also relies on trade secrets and proprietary technology that it seeks to protect, at least in part, through confidentiality agreements with employees, vendors, consultants and other parties. There can be no assurance that these agreements will not be breached, that the Company will have adequate remedies for any breach, or that the Company's trade secrets will not otherwise become known to or independently developed by others.

The original version of the system software for the Company's 6500 series systems was jointly developed by the Company and Realtime Performance, Inc., a third party software vendor. Tegal holds a perpetual, non-exclusive, non-royalty bearing license to use and enhance this software. The enhanced version of the software currently used on the Company's 6500 series systems is the fourth release of the original software, and such enhancements were developed exclusively by the Company. Neither the software vendor nor any other party has any right to use the Company's current release of the system software.

Although the Company attempts to protect its intellectual property rights through patents, copyrights, trade secrets and other measures, there can be no assurance that the Company will be able to protect its technology adequately or that competitors will not be able to develop similar technology independently. There can be no assurance that any patent applications that the Company may file will be issued or that foreign intellectual property laws will protect the Company's intellectual property rights. There can be no assurance that any patent licensed by or issued to the Company will not be challenged, invalidated or circumvented or that the rights granted thereunder will provide competitive advantages to the Company. Furthermore, there can be no assurance that others will not independently develop similar systems, duplicate the Company's systems or design around the patents licensed by or issued to the Company.

As is typical in the semiconductor industry, the Company has received

notices from time to time from third parties alleging infringement claims. In July 1991, the Company was advised by General Signal Corporation ("GSC") that the Company may need a license under certain U.S. patents owned by GSC relating to "cluster tool" equipment. The Company's 6500 series systems are generally configured with multiple process chambers and, therefore, may be deemed "cluster tool" equipment. A number of companies which were contacted by GSC with regard to licensing

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these patents formed an ad-hoc committee to investigate the validity of the GSC patents. As a result of such investigation, in November 1992 the committee members, including the Company, jointly notified GSC that they believe the subject patents are invalid and that, accordingly, no license is necessary. In the Fall of 1994, GSC filed suit against Applied Materials, a non-member of the ad-hoc investigative committee, alleging infringement of such patents. To date, GSC has taken no action against the Company in connection with the licensing of these patents. There can be no assurance that GSC will not take any such action in the future or, if any such action is taken, as to the outcome of such action.

Although there are currently no pending claims or lawsuits against the Company regarding possible infringement claims, there can be no assurance that infringement claims by third parties, or claims for indemnification resulting from infringement claims, will not be asserted in the future or that such assertions, if proven to be true, will not materially adversely affect the Company's business, financial condition and results of operations. In the future, litigation may be necessary to enforce patents issued or exclusively licensed to the Company, to protect trade secrets or know-how exclusively licensed to or owned by the Company or to defend the Company against claimed infringement of the rights of others and to determine the scope and validity of the proprietary rights of others. Any such litigation could result in substantial cost and diversion of effort by the Company, which by itself could have a material adverse effect on the Company's financial condition and operation results. Further, adverse determinations in such litigation could result in the Company's loss of proprietary rights, subject the Company to significant liabilities to third parties, require the Company to seek licenses from third parties or prevent the Company from manufacturing or selling its systems, any of which could have a material adverse effect on the Company's financial condition and results of operations. In addition, there can be no assurance that a license under a third party's intellectual property rights will be available on reasonable terms, if at all.

## **EMPLOYEES**

As of March 31, 1996, the Company had a total of 309 employees consisting of 268 full-time permanent employees and 41 temporary or contract personnel, including 74 in engineering, research and development, 86 in manufacturing, 115 in marketing, sales and customer service and support and 34 in executive and administrative activities. Many of the Company's employees are highly skilled, and the Company's success will depend in part upon its ability to attract, retain and develop such employees. Skilled employees, especially employees with extensive technological backgrounds, are currently in great demand. There can be no assurance that the Company will be able to attract or retain the skilled employees which may be necessary to continue its research and development, manufacturing or marketing programs. The loss of any such persons, as well as the failure to recruit additional key personnel in a timely manner, could have a material adverse effect on the Company's business, financial condition and operating results.

None of the Company's employees are represented by a labor union or covered by a collective bargaining agreement. The Company considers its employee relations to be good.

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## ADDITIONAL RISK FACTORS

#### DEPENDENCE ON RECENTLY INTRODUCED SYSTEMS FOR CRITICAL ETCH MARKETS

The Company's 6500 series systems, its new generation of critical etch systems, have been designed initially for sub-0.5 micron critical etch applications in polysilicon, metal and emerging films, which the Company believes to be the leading edge of critical etch applications. The Company's

6500 series systems which have been installed are currently being used primarily for research and development activities or in pilot production. For the 6500 series systems to achieve market acceptance, the Company's customers must utilize these systems for volume production. Achieving market acceptance of the Company's 6500 series systems is very important to the Company's future financial results.

Because new product development commitments must be made well in advance of sales, new product decisions must anticipate both the future requirements for etch processes needed by semiconductor manufacturers and the equipment required to address such applications. There can be no assurance that the market for critical etch polysilicon, metal or emerging film etch systems will develop as quickly or to the degree the Company expects. There can be no assurance whether or when the 6500 series systems will achieve market acceptance. In addition, the selling cycles of these new systems are typically lengthy.

The 6500 series has had only limited production life. Therefore, unforeseen technical or manufacturing difficulties may arise which may hinder market acceptance or volume production. The Company may be required to incur substantial, unanticipated costs to ensure the functionality and reliability of the 6500 series systems, which may materially and adversely affect the business, financial condition and results of operation of the Company. Such costs may include substantial expenditures to upgrade or re-engineer installed equipment that fails to perform to customer specifications. If the Company is unable to re-engineer 6500 series non-performing systems under evaluation to customer satisfaction and a number of 6500 series systems are returned to the Company, the Company's ability to sell 6500 series systems in the future may be adversely affected. In addition, in connection with the development and production of the 6500 series, the Company is investing in increased levels of inventory and increasing its operating expenses. The failure to complete the commercial introduction of this new generation of systems in a timely manner could result in, among other things, inventory obsolescence and an increase in operating expenses without corresponding sales, any of which could have a material adverse effect on the Company's business, financial condition and results of operations.

If the 6500 series does not achieve significant sales or volume production due to a lack of customer acceptance, inability to correct technical, manufacturing or other difficulties which may develop with this series, or for any other reason, the Company's business, financial condition and results of operations would be materially adversely affected.

#### 19 IMPEDIMENTS TO CUSTOMER ACCEPTANCE

A substantial investment is required to install and integrate capital equipment into a semiconductor production line. The Company believes that once a device manufacturer has selected a particular vendor's capital equipment, that manufacturer generally relies upon that vendor's equipment for that specific production line application and, to the extent possible, subsequent generations of that vendor's systems. Accordingly, it may be extremely difficult to achieve significant sales to a particular customer once another vendor's capital equipment has been selected by that customer unless there are compelling reasons to do so, such as significant performance or cost advantages. Certain of the Company's competitors have entered into strategic relationships or alliances with leading semiconductor manufacturers, particularly with respect to the current generation of devices at 1.0 to 0.5 micron line geometries for which the Company did not offer competitive systems at the time such buying decisions were made. If such relationships or alliances cover etch equipment similar to those sold by the Company, the Company's ability to sell its 6500 series systems would be adversely affected. In addition, certain of the Company's competitors may seek to sell, as an attractively priced package, etch equipment together with other process equipment, such as deposition equipment. Furthermore, some semiconductor manufacturers may have already made initial buying decisions for the next generation of sub-0.5 micron etch requirements. Any failure to gain access and achieve sales to new customers will adversely affect the successful commercial introduction of the Company's 6500 series systems and would have a material adverse effect on the Company's business, financial condition and results of operations.

In addition, the Company believes that its future long term success also depends on its ability to increase sales of its etch systems, particularly its new generation 6500 series, to Japanese semiconductor manufacturers. The

Japanese semiconductor market represents a substantial percentage of the worldwide market and may pose additional challenges to penetrate successfully. The Company believes that it must invest substantial resources in order to increase its penetration of the Japanese semiconductor market and that, even with such investments, there can be no assurance that it will be successful in increasing its penetration of this market.

### FLUCTUATIONS IN QUARTERLY OPERATING RESULTS

The Company's revenue and operating results have fluctuated and are likely to continue to fluctuate significantly from quarter to quarter, and there can be no assurance as to future profitability.

The Company's 900 and 980 non-critical etch systems typically sell for prices ranging between \$300,000 and \$500,000, while prices of the Company's 6500 series critical etch systems typically range between \$1.5 million and \$2.0 million. To the extent the Company is successful in selling 6500 series systems, the sale of a small number of these systems will probably account for an increasingly substantial portion of revenue in future quarters, and a transaction for a single system could have a substantial impact on revenue and gross margin for a given quarter.

The Company's backlog at the beginning of each quarter does not normally include all systems sales needed to achieve planned revenue for the quarter. Consequently, the Company depends on obtaining orders for shipment within a particular quarter to achieve its revenue

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objectives for that period. Because the Company builds a portion of its systems according to forecast, the absence of significant backlog for an extended period of time could hinder the Company's ability to plan expense, production and inventory levels, which could materially adversely affect its operating results. Furthermore, a substantial portion of the Company's net revenue has historically been realized near the end of the quarter. Accordingly, the failure to receive anticipated orders or delays in shipments near the end of a quarter, due, for example, to unanticipated customer delays, cancellations or manufacturing difficulties, may cause quarterly net revenue to fall significantly short of the Company's objectives, which could materially adversely affect the Company's operating results.

The timing of new systems and technology announcement and releases by the Company and others may also contribute to fluctuations in quarterly operating results, including cases in which new systems or technology offerings cause customers to defer ordering systems from the Company's existing product lines. The Company's revenue and operating results may also fluctuate due to the timing and mix of systems sold, the volume of service provided and spare parts delivered in a particular quarter and changes in pricing by the Company, its competitors or suppliers. The impact of these and other factors on the Company's revenue and operating results in any future periods are, and will continue to be, difficult for the Company to forecast.

The need for continued investment in research and development, for capital equipment requirements and for extensive ongoing customer service and support capability worldwide result in significant fixed costs which will be difficult to reduce in the event that the Company does not meet its sales objectives. The Company's expense levels are based, in part, on expectations of future revenue. If revenue in a particular quarter does not meet expectations, fixed operating expenses will adversely affect results of operations. A variety of factors influence the level of revenue in a particular quarter. Those factors include the timing and mix of systems sales, the introduction or announcement of new systems by the Company or the Company's competitors, management decisions to commence or discontinue product lines, the Company's ability to design, introduce and manufacture new systems on a timely basis, the timing of research and development expenditures and expenses attendant to the further development of marketing, process support and service capabilities, specific economic conditions in the semiconductor industry or major global semiconductor markets, general economic conditions and exchange rate fluctuations. The impact of these and other factors on the Company's revenue and operating results in any future periods are, and will continue to be, difficult for the Company to forecast.

The Company's business depends upon the capital expenditures of semiconductor manufacturers, which in turn depend on the current and anticipated market demand for integrated circuits and systems utilizing integrated circuits. The semiconductor industry is highly cyclical and historically has experienced periodic downturns, which often have had a material adverse effect on the semiconductor industry's demand for semiconductor capital equipment, including etch systems manufactured by the Company. The semiconductor industry is currently experiencing such a slowdown. Prior semiconductor industry downturns have adversely affected the Company's revenue, gross margins and results of operations. In addition, the need for continued investment in research and development, substantial capital equipment requirements, and extensive ongoing customer service and support requirements worldwide will limit the

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Company's ability to reduce expenses in response to any such downturn or slowdown. The Company's revenue, gross margin and results of operations may be materially adversely affected by the current slowdown or by future downturns or slowdowns in the rate of capital investment in the semiconductor industry. Moreover, although the semiconductor industry may experience growth that causes significant growth in the semiconductor capital equipment industry, there can be no assurance that such growth can be sustained or that the Company will be positioned to benefit from such growth.

#### IMPORTANCE OF "MIX AND MATCH" PURCHASING PHILOSOPHY TO NON-CRITICAL SYSTEM SALES

A principal element of the Company's strategy is to sell its non-critical etch systems to semiconductor manufacturers who have adopted a "mix and match" purchasing philosophy to meet their non-critical etch process requirements. This strategy depends, in significant part, upon the recognition by IC manufacturers that costs can be minimized by purchasing more expensive, state of the art etch systems for their critical etch process requirements and less expensive, but reliable, etch systems for their non-critical etch process requirements, and the willingness of such manufacturers to implement such a purchasing philosophy to lower manufacturing costs. Many semiconductor manufacturers have limited or no experience with integrating etch systems in the manner necessary for full implementation and acceptance of a "mix and match" purchasing philosophy, and there can be no assurance that semiconductor manufacturers will adopt such a strategy. Also, there can be no assurance that certain of the Company's competitors will not offer competitive non-critical etch systems to respond to semiconductor manufacturers' non-critical etch needs. Any of these developments could have a material adverse effect on the Company's business, financial condition and results of operations.

#### RAPID TECHNOLOGICAL CHANGE; IMPORTANCE OF TIMELY PRODUCT INTRODUCTION

The semiconductor manufacturing industry is subject to rapid technological change and new system introductions and enhancements. The Company believes that its future success depends on its ability to continue to enhance its existing systems and their process capabilities,

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and to develop and manufacture in a timely manner new systems with improved process capabilities. The industry also is subject to fundamental changes in equipment requirements, such as the recent shift from six inch wafer equipment to eight inch wafer equipment and the anticipated shift from eight inch wafer equipment to twelve inch wafer equipment.

The Company must manage system transitions successfully, as introductions of new systems could adversely affect sales of existing systems, including its recently introduced 6500 series. There can be no assurance that the Company will be successful in the introduction and volume manufacture of new systems or that the Company will be able to develop and introduce, in a timely manner, new systems or enhancements to its existing systems and processes which satisfy customer needs or achieve market acceptance. In this regard, the Company did not offer a competitive etch product for the most recent generation of devices with 1.0 to 0.5 micron line geometries. The failure of the Company to accomplish any of the above would adversely affect the Company's business, financial condition and results of operations. In addition, the Company may incur substantial unanticipated costs to ensure product functionality and reliability early in its products' life cycles. If new products have quality or reliability problems, the Company could experience reduced orders, delays in

collecting accounts receivable, higher manufacturing costs, and additional service and warranty expenses, any of which could have a material adverse effect on the Company's business, financial condition and operating results.

#### LENGTHY SALES CYCLE

Sales of the Company's systems depend, in significant part, upon the decision of a prospective customer to add new manufacturing capacity or to expand existing manufacturing capacity, both of which typically involve a significant capital commitment. The Company often experiences delays in finalizing system sales following initial system qualification while the customer evaluates and receives approvals for the purchase of the Company's systems and completes a new or expanded facility. Due to these and other factors, the Company's systems typically have a lengthy sales cycle (often 12 to 18 months in the case of critical etch systems) during which the Company may expend substantial funds and management effort. Lengthy sales cycles subject the Company to a number of significant risks, including inventory obsolescence and fluctuations in operating results over which the Company has little or no control.

#### FUTURE CAPITAL NEEDS

The development, manufacture and marketing of etch systems are highly capital intensive. In order to be competitive, the Company must continue to make significant expenditures for, among other things, capital equipment and the manufacture of evaluation and demonstration unit inventory for its new 6500 series etch systems. The Company expects that its existing cash balances, anticipated cash flow from operations and funds available under its existing lines of credit will satisfy its financing requirements for the next twelve months. To the extent that such financial resources are insufficient to fund the Company's activities, additional funds will be required. There can be no assurance that additional financing will be available on reasonable terms or at all. To the extent that additional capital is raised through the sale of additional equity or convertible debt securities, the issuance of such securities could result in additional dilution to the Company's stockholders.

## DEPENDENCE ON KEY EMPLOYEES

The future success of the Company is dependent, in part, on its ability to retain certain key personnel, including Robert V. Hery, President and Chief Executive Officer, and Stephen P. DeOrnellas, Vice President, Corporate Development and Chief Technology Officer. Many of these key personnel would be difficult to replace. The Company also needs to attract additional skilled personnel in all areas of its business to grow. The competition for these personnel is intense, and the loss of any such persons, as well as the failure to recruit additional key personnel in a timely manner, could have a material adverse effect on the Company's business, financial condition and operating results. There can be no assurance that the Company will be able to retain its existing personnel or attract additional qualified employees in the future.

#### CUSTOMER CONCENTRATION

Although the composition of the group comprising the Company's largest customers may vary from year to year, the loss of a significant customer or any reduction in orders by any significant customer, including reductions due to market, economic or competitive conditions in the semiconductor manufacturing industry, may have a material adverse effect on the Company's business, financial condition and results of operations. The Company's ability to increase its sales in the future will depend, in part, upon its ability to obtain orders from new customers as well as the financial condition and success of its existing customers and the general economy of which there can be no assurance.

#### ADDITIONAL RISKS ASSOCIATED WITH INTERNATIONAL SALES AND OPERATIONS

Sales of the Company's systems in certain countries are billed in local currency, and the Company has two lines of credit denominated in Japanese Yen. The Company generally attempts to offset a portion of its U.S. dollar denominated balance sheet exposures subject to foreign exchange rate remeasurement each period held by its foreign subsidiaries whose books are denominated in currencies other than U.S. dollars by purchasing currency options for future delivery. There can be no assurance that the Company's future results

of operations will not be adversely affected by foreign currency fluctuations. In addition, the laws of certain countries in which the Company's products are sold may not provide the Company's products and intellectual property rights with the same degree of protection as the laws of the United States.

#### CONTROL BY EXISTING STOCKHOLDERS

The Company's principal stockholders and the Company's executive officers and directors beneficially owned approximately 63.4% of the Company's outstanding shares of Common Stock as of March 31, 1996. Accordingly, these stockholders are able to elect all of the Company's directors and to determine the outcome of corporate actions requiring stockholder approval, such as mergers and acquisitions, regardless of how other stockholders of the company may vote. Such a high level of ownership by such persons or entities may have a significant effect in delaying, deferring or preventing a change in control of the Company and may adversely affect the voting and other rights of holders of Common Stock.

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#### ITEM 2. PROPERTIES

The Company maintains its headquarters, encompassing its executive office, manufacturing, engineering, research and development operations, in one leased 120,000 square foot facility in Petaluma, California. The Company currently occupies 82,500 square feet of this building, with the remaining portion sublet or being offered for sublet. The lease expires in January 1998. Other than certain large pieces of capital equipment leased by the Company, the Company owns substantially all of the machinery and equipment used in its facilities. The Company believes that its existing facilities are adequate to meet its requirements for several years.

The Company leases sales, service and process support space in Phoenix, Arizona; Sunnyvale, California; Austin, Texas; Paris, France; Munich, Germany; Kawasaki, Japan; Catania, Italy; Singapore and Hsin Chu City, Taiwan. The Company also leases space for administrative offices in Hoofddorp, The Netherlands.

#### ITEM 3. LEGAL PROCEEDINGS

There are no material legal proceedings pending against the Company.

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

No matters were submitted to a vote of security holders during the fourth quarter ended March 31, 1996.

## EXECUTIVE OFFICERS OF THE REGISTRANT

The following sets forth certain information regarding the executive officers of the Company as of June 14, 1996:

<TABLE> <CAPTION>

Name	Age	Position
<s> &lt;</s>	<c> &lt;(</c>	C>
Robert V. Hery	54	Chairman of the Board, President and
	Chief	Executive Officer
David Curtis	42	Vice President, Finance and
	Admir	nistration, Chief Financial Officer,
	Secre	tary and Treasurer
Stephen P. DeOrnellas	s 4.	Vice President, Corporate Development
	and C	hief Technology Officer
Charles Desmond	51	Vice President, Worldwide Sales
Haresh C. Patanik	53	Vice President, Engineering
Robert Redstone	56	Vice President, Customer Support
Michael Taylor	38	Vice President, Marketing

  |  |Robert V. Hery has been a Director of the Company since 1990 and assumed the additional roles of President and Chief Executive Officer in January 1991 and Chairman of the Board in March 1995. From 1987 to 1990, Mr. Hery was President and Chief Executive Officer of AMOT Controls Corporation, an international manufacturer of machinery control components used in explosive and hazardous areas. From 1985 to 1987, Mr. Hery served as Vice President and General Manager of KLA Instruments Corporation ("KLA"), a manufacturer of semiconductor capital equipment, where he started the Wafer Inspection Systems Division. Prior to 1985, Mr. Hery held numerous posts as a marketing troubleshooter, marketing and new business development, manufacturing and product development executive positions, principally in the computer industry.

David Curtis joined the Company in August 1991 as Vice President of Finance and Administration and Chief Financial Officer and from May 1995 until June 1996, he assumed the additional role of Vice President of Operations. Prior to joining the Company, Mr. Curtis served as Chief Financial Officer of AMOT Controls Corporation from 1988 until 1991. Prior to 1991, he held consulting positions with Pittiglio Rabin Todd and McGrath, an operations consulting firm specializing in implementing planning and control processes in rapidly growing technology companies and with Arthur Andersen & Co.'s systems consulting division.

Stephen P. DeOrnellas joined the Company in July 1990 as Vice President of Marketing and Technology, served as Vice President of Process Technology from April 1995 until June 1996, at which time he was appointed Vice President, Corporate Development and Chief Technology Officer. From 1989 to 1990 he was Vice President of Marketing for the Wafer Inspection Systems Division of KLA. From 1981 to 1989 he held a variety of product development and marketing management positions, including Vice President Marketing from 1987 to 1989, Vice President of Process Engineering from 1983 to 1987, and Senior Process Engineer from 1981 to 1983, with Lam Research Corporation where he had responsibility for the development and introduction of the Lam Autoetch and Rainbow product lines.

Charles Desmond joined the Company in July 1991 as Vice President of Sales and Service and has been Vice President of Worldwide Sales since May 1995. From 1979 to 1991, he held various sales management positions with SVG, a manufacturer of semiconductor capital equipment, most recently as Vice President of Sales and Service for SVG Lithography Systems after it had acquired the optical operations unit of Perkin-Elmer in May 1990. Prior to his experience with SVG, Mr. Desmond spent eight years in sales management with Micro Air Corporation, and previously held engineering positions with Fairchild Semiconductor Corporation and Motorola, Inc.

Haresh Patnaik joined the Company in November 1991 as Vice President of Engineering. Prior to joining the Company, from 1988 to 1991, Mr. Patnaik was Program Director at Teradata Corporation, where he was responsible for building and leading a cross-functional team which developed a second-generation relational database computer using massively parallel processing architecture. From 1986 to 1988, he was Vice President of Engineering for Kennedy Company, a manufacturer of data storage devices. Earlier, he spent 19 years at NCR Corporation in product development, project management and engineering positions where he concluded as Director of Engineering. His work at NCR included a six-year period where he assumed general management assignments outside of the engineering function.

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Robert Redstone joined the Company in May 1995 as Vice President, Customer Support. Mr. Redstone held positions of Vice President of Sales and Service and Chief Executive Officer at Metrologix, Inc. ("Metrologix"), a manufacturer of metrology equipment, from November 1992 until December 1994, when Metrologix was sold to KLA. Prior to joining Metrologix, Mr. Redstone was a marketing consultant to high-tech start-ups from 1989 to 1992. From 1984 to 1989, Mr. Redstone was the founder and Chief Executive Officer of Flexible Manufacturing Systems, a high-tech factory automation company serving the semiconductor industry. From 1982 to 1984, he was a Vice President and Chief Executive Officer of Lam Research Corporation.

Michael Taylor joined the Company in July 1992 as Director of New Product Marketing. In April 1995, he was appointed Vice President, Marketing. Prior to joining the Company, from 1984 to 1992, he held a variety of marketing and technical management positions with Therma-Wave, Inc., a manufacturer of semiconductor inspection equipment. From 1980 to 1984, he held engineering

## 27 PART II

## ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY AND RELATED SHAREHOLDER MATTERS

Since October 19, 1995, Tegal's Common Stock has been traded on the Nasdaq National Market System under the symbol TGAL. The following table sets forth the range of high and low closing sale prices for the Company's Common Stock for the periods indicated since the Company's initial public offering on October 19, 1995.

<TABLE>
<CAPTION>

High Low
---
<S> <C> <C>
October 19 - December 31, 1995

January 1 - March 31, 1996

</TABLE>

High Low
---
--
4C>
4C>
4C>
4C>
47/8

9 1/4

10 1/2

6 7/8

The approximate number of record holders of the Company's Common Stock as of March 31, 1996 was 133. Tegal has not paid any cash dividends since its inception and does not anticipate paying cash dividends in the foreseeable future. Further, the Company's domestic lines of credit restrict the declaration and payment of cash dividends.

## ITEM 6. SELECTED FINANCIAL DATA

(in thousands, except per share data)

<TABLE> <CAPTION>

CH HOIV		Ye	ear Ende	d Marc	h 31,		
<del></del>	1996	199	95	1994	1993	1992	
				-			
<s></s>	<c></c>	<(	C>	<c></c>	<c></c>	- <c></c>	,
Consolidated Statements of Operation	ons Dat	a:					
Revenue	\$ 62,	046	\$ 44,64	5 5	\$ 38,022	\$ 42,777	\$ 42,158
Gross margin	28	,577	20,58	33	16,508	19,458	23,786
Operating income (loss)		6,572	2 1	,376	(1,072)	2,705	1,315
Income (loss) before income taxe	S	6	5,186	949	9 (1,50	1,79	2 156
Net income (loss)		5,566	82	8	(1,501)	1,526	(73)
Net income per share	9	.63	\$	11			
Shares used in per share computa	tion		8,899	7,3	73		

#### Consolidated Balance Sheet Data:

Cash and cash equivalents	\$ 23.23	83 \$ 2,3	51 \$ 3,4	462 \$ 7,	206 \$	4.481
*	\$ 23,20	03 \$ 2,3	JI \$ 3,	+02 \$ /,.	390 s	4,401
Working capital	42,957	11,432	11,297	11,690	7,763	3
Total assets	63,772	33,744	27,468	24,008	24,035	
Short-term notes payable to banks a	and others	915	8,462	4,086	167	674
Long-term obligations	1,587	4,150	3,665	3,236	10,85	8
Redeemable preferred stock	0	21,695	22,38	2 22,20	7 12,	801
Stockholders' equity (deficit)	47,62	6 (11,63	(12,0	(10,	196) (1	11,824)

  |  |  |  |  |  |2

## ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Information contained or incorporated by reference herein contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, which can be identified by the use of

forward-looking terminology such as "may," "will," "expect," "anticipate," "estimate" or "continue" or the negative thereof or other variations thereon or comparable terminology or which constitute projected financial information. The following contains cautionary statements identifying important factors with respect to such forward-looking statements, including certain risks and uncertainties, that could cause actual results to differ materially from those in such forward-looking statements.

#### RESULTS OF OPERATIONS

The following table sets forth certain financial data for the years indicated as a percentage of revenue:

<TABLE> <CAPTION>

March 31,			995	
		<c></c>		
Revenue	100.0%	ó 1	00.0%	100.0%
Cost of sales	53.9	53	.9 50	5.6
Gross margin	46.1	4	6.1	43.4
Operating expenses:				
Research and development		16.1	18.1	19.3
Sales and marketing	10	.7	14.3	15.0
General and administrative		8.7	10.7	11.9
Total operating expenses	3	55.5	43.1	46.2
Operating income (expense)		10.6	3.0	(2.8)
Other income (expense), net		(0.6)	(1.0)	(1.1)
Income before income taxes		10.0	2.0	(3.9)
Income tax expense	1.	.0	0.3	0.0
Net income	9.0%	)	1.7%	(3.9)%
==			= ==	

</TABLE>

Years ended March 31, 1996, 1995 and 1994

## Revenue

The Company's revenue is derived from sales of new and refurbished systems, spare parts and non-warranty service. Revenue increased 17.4 percent from \$38.0 million in fiscal 1994 to \$44.6 million in fiscal 1995, and increased 39.0 percent to \$62.0 million in fiscal 1996. The revenue growth in fiscal 1995 as compared to fiscal 1994 was attributable to the sale of a substantially greater number of non-critical etch systems as the Company's customers equipped new or expanded facilities. Revenues from the sale of spare parts, upgrades and service also increased due to growth in the Company's installed base of systems and the Company's active pursuit of refurbished systems opportunities, which the Company believes reduced chances for third party maintenance competitors to sell spare parts. Revenue growth in fiscal 1996 as compared to fiscal 1995 occurred principally due to increased customer acceptance of the Company's new critical etchers and new eight inch wafer capable non-critical etchers. Spare parts sales continued to grow substantially in fiscal 1996 due to the Company shifting its sales from a distributor arrangement to direct sales of spare parts in Taiwan and a continued expansion in the Company's installed base of systems. International sales accounted for approximately 63 percent of total revenue in fiscal 1996 and 1995, and 68 percent in 1994. In fiscal 1996, international revenue was split roughly evenly among Japan, Europe and the Pacific Rim (principally Taiwan and Korea). The Company expects that international sales will continue to account for a significant portion of its revenue.

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### Gross Margin

The Company's gross margin as a percentage of revenue increased from 43.4 percent in fiscal 1994 to 46.1 percent in fiscal 1995 and 1996. The increase in

gross margin as a percentage of revenue from fiscal 1994 to fiscal 1995 was primarily the result of spreading substantially fixed manufacturing overhead over a larger revenue base of new systems sales, higher overhead absorption due to significantly higher refurbished systems sales, and the sale of more spare parts, which carry higher gross margins. The gross margin percentage in fiscal 1996 was virtually unchanged from that of fiscal 1995 due to start-up inefficiencies on the new 6500 series critical etcher, which were offset, in part, by improved manufacturing efficiencies associated with spreading substantially fixed manufacturing overhead over a larger revenue volume. The Company also had a more favorable product mix, due principally to an increase in sales of the Company's mature four- to six-inch wafer capable 900 series etchers and spare parts, which carry higher gross margins.

The Company's gross margin as a percentage of revenue has been, and will continue to be, affected by a variety of factors, including the mix and average selling prices of systems sold and the costs to manufacture, service and support new product introductions and enhancements. Gross margins for the Company's new systems are typically lower than those of mature products due to the inefficiencies associated with the startup of manufacturing operations and increased service installation and warranty support. As a result of such factors and an anticipated product mix change toward the lower margin 6500 series etchers, the Company does not expect that its gross margin for fiscal 1997 is likely to improve over the fiscal 1996 level.

#### Research and Development

Research and development expenses consist primarily of salaries, prototype material, consultant fees and other costs associated with the Company's research and product development efforts. Research and development expenses as a percentage of revenue decreased from 19.3 percent in fiscal 1994 to 18.1 percent in fiscal 1995 and to 16.1 percent in fiscal 1996. In absolute dollars, research and development expenses increased from \$7.4 million in fiscal 1994 to \$8.1 million in fiscal 1995 and to \$10.0 million in fiscal 1996. The absolute dollar increase in fiscal 1995 and 1996 expenses compared to fiscal 1994 is primarily attributable to increased prototype material spending in fiscal 1995 associated with the development of the Company's 6500 series system. The absolute dollar increase in fiscal 1996 expenses compared to fiscal 1995 is primarily attributable to the hiring of additional personnel to staff ongoing and new product development, product enhancement and applications engineering support, particularly for recently introduced products and for increased prototype material spending. The Company anticipates that research and development expenses will continue to increase significantly in absolute dollars in fiscal 1997 to support several product enhancement programs and to provide additional applications engineering support to its customers at their facilities, particularly for new product applications.

## Sales and Marketing

Sales and marketing expenses primarily consist of salaries, commission, trade show promotion and advertising expenses. As a percentage of revenue, sales and marketing expenses declined from 15.0 percent in fiscal 1994 to 14.3 percent in fiscal 1995 and 10.7 percent in fiscal 1996. In absolute dollars, sales and marketing expenses increased from \$5.7 million in fiscal 1994 to \$6.4 million in fiscal 1995 and to \$6.6 million in fiscal 1996. The increase in absolute dollars from fiscal 1994 to fiscal 1995 was primarily attributable to increased commission expense due to an expansion in overall systems revenues and a revenue mix shift toward sales derived by third party representatives, which command higher commission rates. In addition, fiscal 1995 included a \$0.3 million non-recurring provision for sales office relocation expenses. The increase in fiscal 1996 sales and marketing expenses in absolute dollars was

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attributable principally to the growth in revenue offset, in part, by a reduction in third party representative commissions as the Company shifted to a direct sales organization in Taiwan and as the systems sales mix shifted toward customers and regions where the Company sells via direct sales engineers. The Company expects to increase its absolute dollar spending on sales and marketing in fiscal 1997 to fund additional advertising activities and to hire several additional sales and marketing persons.

General and Administrative

General and administrative expenses consist of salaries, legal, accounting and related administrative services and expenses associated with general management, finance, management information systems and human resources activities. General and administrative expenses in absolute dollars increased from \$4.5 million in fiscal 1994 to \$4.8 million in fiscal 1995 and to \$5.4 million in fiscal 1996. As a percentage of revenues, general and administrative expenses decreased from 11.9 percent in fiscal 1994 to 10.7 percent in fiscal 1995 and to 8.7 percent in fiscal 1996. The increase in general and administrative expenses in fiscal 1995 as compared to fiscal 1994 was attributable to fees incurred in connection with financing activities that year and to legal fees in defense of two successfully settled lawsuits. The increased general and administrative expenses in fiscal 1996 as compared to fiscal 1995 were attributable to increased legal, auditing and insurance expenses associated with the additional, ongoing expenses incurred as a public company, which commenced in the Company's third quarter of fiscal 1996, and to outside consulting and training expenses incurred to upgrade the Company's business systems in the second half of fiscal 1996. The Company anticipates that general and administrative expenses will increase in absolute dollars in fiscal 1997 as it incurs a full year of expenses associated with operating a publicly traded company that only partially impacted fiscal year 1996. In addition, the Company expects to incur approximately \$0.2 million in the first quarter of fiscal 1997 to complete the business system upgrade begun in late fiscal 1996.

#### Other Income (Expense), Net

Other income (expense), net, consists principally of interest expense, interest income, gains and losses on foreign exchange, and gains and losses on the disposition of fixed assets. The Company recorded a net non-operating expense in absolute dollars of \$0.4 million in each of fiscal 1994, 1995 and 1996. In fiscal 1994, such expenses were primarily attributable to interest expense on its line of credit with its domestic bank, customer promissory note borrowing in Japan and interest accretion on a term loan held by Motorola as a consequence of the sale of Tegal by Motorola in 1989. In fiscal 1995, such expenses were from the same source as in fiscal 1994, with additional interest expense due to greater levels of borrowing being offset in part by foreign exchange gains. Other expense in fiscal 1996 was composed of less interest expense incurred due to repayment of all domestic bank debt and a restructuring and repayment of the Motorola term loan following the Company's IPO in October 1995 and interest income on the net unused portion of the proceeds from that offering offset, in part, by foreign exchange losses.

#### Income Taxes

The Company's effective tax rate was 0.0 percent, 12.8 percent and 10.0 percent in fiscal 1994, 1995 and 1996, respectively. The effective tax rates for these three years have been materially lower than the statutory rate due to extensive net operating loss carryforwards generated in fiscal 1994 and prior years. The Company expects its effective tax rate for fiscal 1997 will be approximately 25.0 percent and will increase to approximately 35.0 percent in subsequent years. If beneficial, the Company intends to employ a foreign sales corporation to contain its future tax liabilities and effective tax rates.

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## Liquidity and Capital Resources

For the year ended March 31, 1996, the Company financed its operations through bank borrowings and net proceeds from its IPO.

Operating activities generated approximately \$0.2 million in cash flow for fiscal 1996. Approximately \$5.4 million of net cash was generated from net income plus non-cash depreciation, senior term loan accretion, purchase credit redemptions and accounts receivable reserve accruals, which was almost entirely offset by increases in accounts receivable and inventories less increases in accounts payable and accrued expenses, all such increases being due to the Company's increased sales volume.

Net cash used in investing activities for fiscal 1996 was \$2.1 million for capital expenditures including the acquisition of equipment used in research and development and manufacturing, leasehold improvements and computer equipment.

Net cash generated by financing activities totaled \$23.2 million in fiscal

1996. In October 1995, the Company completed an IPO raising a net \$34.2 million from the sale of 3,179,300 shares of the Company's common stock. \$10.5 million from the proceeds of the offering were used to repay all its domestic bank debt and \$3.0 million were used to repay a term loan due to Motorola.

As of March 31, 1996, the Company had approximately \$23.3 million of cash and cash equivalents. In addition to cash and cash equivalents, the Company's other principal sources of liquidity consisted of the unused portions of several bank borrowing facilities. During fiscal 1996, the Company renewed and substantially amended its existing facilities with a new maximum of \$10.0 million on one revolving line of credit and a maximum of \$3.0 million on its other revolving line of credit. Both facilities are available until August 15, 1997 and at March 31, 1996, both domestic credit lines were unused, providing \$13.0 million of unused availability. In addition to the foregoing facilities, as of March 31, 1996, the Company's Japanese subsidiary had available 574 million Yen (approximately \$5.4 million at exchange rates prevailing at March 31, 1996) unused under two lines of credit for a maximum of 600 million Yen (approximately \$5.6 million at exchange rates prevailing on March 31, 1996) with two Japanese banks, secured by customer promissory notes held by such subsidiary in advance, of payment on customers' accounts receivable.

The Company believes that anticipated cash flow from operations, funds available under its lines of credit and existing cash and cash equivalent balances will be sufficient to meet the Company's cash requirements for at least the next 12 months.

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#### ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The Company's Financial Statements and notes thereto appear on this Form 10-K according to the following Index of Consolidated Financial Statements:

<TABLE> <CAPTION>

## Page

<S>

<C>

Consolidated Balance Sheets as of March 31, 1996 and 1995
Consolidated Statements of Operations for the years ended
March 31, 1996, 1995 and 1994
Consolidated Statements of Stockholders' Equity (Deficit)
for the years ended March 31, 1996, 1995 and 1994
Consolidated Statements of Cash Flows for the years ended
March 31, 1996, 1995 and 1994
Notes to Consolidated Financial Statements
Independent Auditors' Report

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Consolidated Statements of Cash Flows for the years ended
March 31, 1996, 1995 and 1994

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Notes to Consolidated Financial Statements

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Independent Auditors' Report

## ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

</TABLE>

33 PART III

Certain information required by Part III is omitted from this Report in that the Registrant will file a definitive proxy statement pursuant to Regulation 14A (the "Proxy Statement") not later than 120 days after the end of the fiscal year covered by this Report, and certain information included therein is incorporated herein by reference. Only those sections of the Proxy Statement that specifically address the items set forth herein are incorporated by reference. Such incorporation does not include the Compensation Committee Report or the Performance Graph included in the Proxy Statement.

## ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

The information concerning the Company's directors required by this

Item is incorporated by reference to the Company's Proxy Statement under the caption "Election of Directors."

The information required by this Item relating to the Company's executive officers is included under the caption "Executive Officers of the Registrant" in Part I, Item 4, of this Form 10-K Report.

The information regarding compliance with Section 16(a) of the Securities and Exchange Act of 1934 in the Proxy Statement under the caption "Compliance with Section 16(a) of the Exchange Act" is incorporated herein by reference.

#### ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is incorporated by reference to the Company's Proxy Statement under the caption "Executive Compensation."

#### ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The information required by this Item is incorporated by reference to the Company's Proxy Statement under the caption "Security Ownership of Certain Beneficial Owners and Management."

#### ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

The information required by this Item is incorporated by reference to the Company's Proxy Statement under the caption "Certain Transactions."

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PART IV

#### ITEM 14. EXHIBITS, FINANCIAL STATEMENT SCHEDULES AND REPORTS ON FORM 8-K

- (a) The following documents are filed as part of this Form 10-K Report:
  - (1) Financial Statements

See Index to Consolidated Financial Statements at page 33 of this Report.

(2) Financial Statement Schedules

The following consolidated financial statement schedule is included herein:

<TABLE>

<CAPTION>

**PAGE** 

S-1

<C>

Schedule II - Valuation and Qualifying Accounts S-2 Independent Auditors' Report on Schedule

</TABLE>

Schedules other than those listed above have been omitted since they are either not required, not applicable, or the required information is shown in the consolidated financial statements or related notes.

(3) Exhibits

The following exhibits are referenced or included in this report:

<TABLE>

<CAPTION>

EXHIBIT DESCRIPTION

<S><C>

Certificate of Incorporation of the Registrant, as amended 3.1 (incorporated by reference to Exhibits 3(i).1 and 3(i).2 included in Registrant's Registration Statement on Form S-1 (File No. 33-84702) declared effective by the Securities and Exchange Commission on October 18, 1995).

- By-laws of Registrant (incorporated by reference to Exhibit 3(ii) included in Registrant's Registration Statement on Form S-1 (File No. 33-84702) declared effective by the Securities and Exchange Commission on October 18, 1995).
- \* 4.1 Form of Certificate For Common Stock.
- Information and Registration Rights Agreement between the \* 4.2 Registrant and the investors listed on Schedule A thereto dated December 19, 1989, as amended to date.
- \* 4.3 Imperial Bank Warrant issued by the Registrant, dated as of March 14, 1995.
- \* 10.1 Amended and Restated Equity Incentive Plan.
- 1990 Stock Option Plan. \* 10.2
- \* 10.4 Employee Qualified Stock Purchase Plan.
- \* 10.5 Stock Option Plan for Outside Directors.

</TABLE>

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<C>

#### <TABLE>

<S>

- \* 10.6 Amended and Restated Agreement of Purchase and Sale between the Registrant, Nazem & Company III, L.P. and Motorola, Inc. dated December 18, 1989.
- Restructuring Agreement between the Registrant and Motorola, \* 10.7 Inc. Dated October 31, 1991.
- \* 10.8 Conversion Agreement between the Registrant and Motorola, Inc. dated August 31, 1994 and amendment thereto dated August 8,
- \* 10.10 Employment Letter Agreement between the Registrant and Stephen P. DeOrnellas dated April 30, 1990.
- Lease dated August 15, 1986, as amended, between the Registrant and South McDowell Investments.
- Technology License Agreement between the Registrant and \* 10.12 Motorola, Inc. dated December 19, 1989.
- \* 10.14 Security and Loan Agreement between the Registrant and Imperial Bank dated as of August 15, 1995.
- Supplemental Source Code License Agreement with the Registrant and Realtime Performance, Inc. dated as of November 1, 1991.
- \* 10.16 Incentive Stock Option Agreement between the Registrant and Robert V. Hery dated as of September 28, 1993.
- 11 Statement of Computation of Net Income Per Share.
- \* 21 List of Subsidiaries of the Registrant.
- 23.1 Consent of Independent Auditors
- 24.1 Power of Attorney (included on page 52 of this Report).
- 27.1 Financial Data Schedule.

</TABLE>

- Incorporated by reference to identically numbered exhibits included in Registrant's Registration Statement on Form S-1 (File No. 33-84702) declared effective by the Securities and Exchange Commission on October 18, 1995.
- (b) Reports on Form 8-K.

None.

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## CONSOLIDATED BALANCE SHEETS

<TABLE> <CAPTION>

(In thousands, except share data)

<C>

March 31, 1996 1995

<C>

<S>ASSETS

Current assets:

	\$23,283 \$ 2,351 es of \$453 in 16,191 14,629
Inventories Prepaid expenses and other	es of \$453 in  16,191  14,629  16,947  12,668  current assets  1,095  1,316
Total current assets	57,516 30,964 6,027 2,565 229 215
	\$63,772 \$33,744 
Accrued expenses and other	QUITY (DEFICIT)  \$ 915  \$ 8,462 4,700  3,963
liabilities Product warranty	6,358 5,952 2,586 1,155
Motorola credit liability Long-term debt	14,559 19,532 1,587 4,150
	16,146 23,682
Commitments and contingen	
Redeemable preferred stock; 5,000,000 and 6,500,000 st 1996 and 1995, respectively shares issued and outstandi 1995, respectively; aggrega preference of \$0 and \$22,60 1995, respectively  Stockholders' equity (deficit)  Common stock; \$0.01 par v and 13,500,000 shares aut and 1995, respectively; 10	ares authorized in y; 0 and 5,876,669 ng in 1996 and te liquidation 67 in 1996 and 21,695
650,780 shares issued and 1996 and 1995, respective	
Additional paid-in capital	54,455 123
Cumulative translation adju	15 stment 615 939
Accumulated deficit	(7,545) (12,702)
Total stockholders' equi	ty (deficit) 47,626 (11,633)

 \$63,772 \$ 33,744 ||  | consolidated financial statements. |
37	
CONSOLIDATED STATEM	MENTS OF OPERATIONS
(In Year ended March 31,	thousands, except per share data) 1996 1995 1994
Revenue	\$62,046 \$44,645 \$38,022

Cost of sales		24,062	21,514
Gross margin			16,508
Operating expenses:			
Research and development	10	,000 8	,065 7,354
Marketing and selling	6,622	6,366	5,691
General and administrative	5,3	83 4,7	76 4,535
Total operating expenses	22,0	05 19,2	207 17,580
Operating income (loss) Other expenses, net	6,57 (386)	-	* * * *
Income (loss) before incor Income taxes	ne taxes 620		949 (1,501)
Net income (loss)	\$ 5,566	\$ 828	\$(1,501) ======
Net income per share	\$ .63	\$ .11 =====	
Shares used in per share comp	outation	8,899 =====	7,373

  |  |  |See accompanying notes to consolidated financial statements.

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## CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT) (In thousands, except share data)

<TABLE> <CAPTION>

	Commo	on Stock	Treası				Cumulative		Total tockholders'
	Shares		Shares	Amou	nt capi	tal ad	ljustment		
<s></s>	<c></c>						C> <	C>	<c></c>
Balances, March									(654) \$(10,196)
Treasury stock re								3	21
Common stock i		124,954	1		-	30 167		167	31
Translation adjust Accretion of Ser						107		107	
preferred stock							(522)	(522)	
Net loss						(1	,501) (	1,501)	
Balances, March						106	548	(12,677)	. , ,
Common stock i		39,398			1	7			17
Exercise of com									
stock warrants		54,285 2						2	
Translation adjus						391		391	
Accretion of Ser							(052)	(952)	
preferred stock Net income				-			(853) 828	(853) 828	
Net income				. <b>-</b> 		<b></b> 	020	020	
Balances, March		650,780	7			123	939	(12,702)	(11,633)
Common stock i									
under option an									
executive plans		58,245 3			124			127	
Net proceeds fro		3,179,300	32		3	4,153			34,185
Contribution of p									
capital through conversion of N									
preferred stock					891			891	
Conversion of re					071			091	
Conversion of 10	accinable	-							

preferred stock to common stock at IPO Translation adjustment Accretion of Series B preferred stock	5,876,079	59	 	19,164 (324)	(409)	19,223 (324)	3
Net incomeBalances, March 31, 1996	 10.064.404		  \$	  \$54,45		\$,566  \$ (7,545)	\$ 47,626
	====	=======================================	===	======		. , ,	= ======
See accompanying notes to	consolidated	financial stater	nents.				
39							
CONSOLIDATED STATI (In thousands)	EMENTS OF	CASH FLOWS	S				
<table> <caption> Year ended March 31,</caption></table>			1996	1995	1994		
<s></s>					C>		
Cash flows from operating	activities:						
Net income (loss)		\$ 5,	566	\$ 828	\$(1,501)	)	
Adjustments to reconcile provided by (used in) op			h				
Depreciation and amorti	zation		1,4	35 1,0	)50 8	887	
Accretion of senior term	loan		303	3 48:	5 429	)	
Purchase credit for prefe	erred stock red	emptions		(1,857)	(1,540)	(347)	
Allowance for doubtful	accounts and s	sales return allo	wance	es (2	2) 261	(293)	
Changes in operating ass	sets and liabili	ties:					
Receivables		(1,54	0)	(3,647)	(5,256)		
Inventories		(6,509	9)	(3,681)	(2,781)		
Prepaid expenses and	other current a	assets		221	(272)	111	
Other assets		(14)	)	219	400		
Income taxes payable			829	109	(10)		
Other current liabilitie	s	1,	745	1,608	769		
Net cash provided by	(used in) ope	rating activities		157	(4,580)	(7,592)	
Cash flows used in investir and equipment	ng activities	-	ropert (167)		(381)		
Cash flows from financing	activities:	_		<b></b>			
Proceeds from issuance o	f common sto	ck		34,312	19	34	
Borrowings under (repayi	ment of) notes	payable		(8,146)	4,096	3,838	
Repayment of long-term	debt		(3,0	000)	 -		
Net cash provided by	financing act	ivities				3,872	
Effect of exchange rates or	cash and cas	h equivalents		(324)	391	167	

20,932

(1,111)

(3,934)

Net increase (decrease) in cash and cash equivalents

Cash and cash equivalents at beginning of ye	ar	2,351	3,462	7,396
Cash and cash equivalents at end of year		\$23,283	\$ 2,351	\$ 3,462
Supplemental disclosures of cash paid during	g the year:			:
Interest	\$ 605	\$ 348	\$ 98	
Income taxes	\$ 45	\$ 90	\$ 38	:
Supplemental disclosure of noncash investing	===== g and financi	ng activities:		:
Accretion of Series B preferred stock		\$ 409	\$ 853 \$	522
Transfer of demo lab equipment from inven	tory to fixed	assets \$	2,330 \$	\$
Conversion of redeemable preferred stock to at IPO	o common sto \$19,223	ock \$	\$	:
Contribution of paid-in capital through con- preferred stock	version of Mo \$ 891	s	\$	_
Acquisition of equipment under capital leas	e obligations	\$ 5	99 \$ 280	\$ 81
~/TADIE>				

</TABLE>

See accompanying notes to consolidated financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS March 31, 1996, 1995 and 1994

(All amounts in thousands, except share data)

#### NOTE 1, DESCRIPTION OF BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

## Description of Business

Tegal Corporation Limited (TCL) was incorporated in Bermuda in December 1989, as a holding company upon the purchase of the net assets of Tegal Corporation, a division of Motorola, Inc. (Motorola), by management and an investment group. On September 1, 1995, the Board of Directors approved the domestication of TCL in the state of Delaware as Tegal Corporation (the Company). In connection with the domestication, a 1-for-7 reverse stock split of the Company's common and Series A, C, and D redeemable preferred stock was effected. The accompanying consolidated financial statements have been retroactively adjusted to reflect the domestication and the stock split. The Company designs, manufactures, markets, and services plasma etch systems used in the fabrication of integrated circuits.

On October 24, 1995, the Company closed an initial public offering (IPO) of its common stock. Under the terms of the IPO, all of the then outstanding Series A, C, and D mandatorily redeemable preferred stock was converted into 5,876,079 shares of common stock. In addition, in accordance with a Conversion Agreement between the Company and Motorola dated August 31, 1994, as amended August 8, 1995, all of the then outstanding Series B redeemable preferred stock was converted into an obligation to Motorola in the form of a credit liability (payable in cash and through the issuance of purchase credits on sales of products or services to Motorola), and the noninterest-bearing senior term loan payable to Motorola with a carrying value of \$4,453 as of October 24, 1995, was converted into a new promissory note in the principal amount of \$3,000, which was repaid in full out of the proceeds of the IPO.

## Principles of Consolidation.

The accompanying consolidated financial statements include the financial statements of the Company and its wholly owned subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

## Reclassifications

Certain amounts in prior years' consolidated financial statements have been

reclassified to conform with the 1996 consolidated financial statement presentation.

### Cash and Cash Equivalents

All highly liquid investments with a maturity of less than 90 days when purchased are considered to be cash equivalents, and those with maturities greater than 90 days are considered short-term investments.

The Company has adopted Statement of Financial Accounting Standards (SFAS) No. 115, Accounting for Certain Investments in Debt and Equity Securities and, accordingly, classifies investment securities as either "held-to-maturity," "trading," or "available-for-sale." As of March 31, 1996, the Company did not hold any short-term investments.

#### Fair Value of Financial Instruments

The carrying amount of the Company's financial instruments, including accounts receivable, approximates fair value.

#### Concentration of Credit Risk

Financial instruments that potentially subject the Company to significant concentration of credit risk consist primarily of cash, cash equivalents, and trade receivables. Substantially all of the Company's cash and cash equivalents are invested in money market funds. The Company performs ongoing credit evaluations of its customers and generally

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requires no collateral. The Company maintains reserves for potential credit losses; historically, such losses have been minor and within management's expectations. As of March 31, 1996, two customers accounted for 32 percent of the accounts receivable balance (see note 12).

#### Inventories

Inventories are stated at standard cost, which approximates the lower of first-in, first-out actual cost or market.

## Property and Equipment

Property and equipment is recorded at cost. Depreciation is calculated using the straight-line method over the estimated useful lives of the assets, ranging from three to seven years. Leasehold improvements are stated at cost and are amortized using the straight-line method over the shorter of the estimated useful life of the improvements or the lease term.

## Income Taxes

The Company uses the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on differences between financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized.

## Foreign Currency

Foreign currency transactions and financial statements are translated into U.S. dollars at current rates, except that revenue, costs, and expenses are translated at average rates during each reporting period. Gains and losses resulting from foreign currency transactions and intercompany balances expected to be paid in the foreseeable future are included in results of operations. Gains and losses resulting from translation of financial statements are excluded from results of operations and are reflected as a translation adjustment in a separate component of stockholders' equity.

The Company enters into foreign exchange options and forward contracts to hedge partially net accounts receivable or payable U.S. dollar positions on the books of its subsidiaries, which are subject to periodic remeasurement. Foreign exchange options permit, but do not require, the Company to exchange currencies at a future date with another party at a contracted exchange rate. The expense

of the premiums paid for such options is amortized on a straight-line basis over the term of each option (generally two to three months in duration) as a foreign currency expense. Gains on the options that offset any losses on the underlying balance sheet exposures are recognized as a foreign exchange gain over the term of the options. To date, foreign currency gains on foreign exchange options have been immaterial, and the only expenses incurred have been the premium cost of the options.

## Revenue Recognition

Revenue is recognized generally upon shipment, except in Japan, where revenue is generally recognized upon delivery. Revenue related to units shipped on evaluation is recognized upon customer acceptance. Maintenance revenue is recognized on a monthly basis as billed, unless services are paid for in advance according to service contracts, in which case revenue is deferred and recognized over the service period using the straight-line method.

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#### **Product Warranty**

The Company provides for estimated installation and warranty costs when revenue on the related product is recognized. Warranty obligations are for a one-year period for new systems, and for a six-month period for refurbished systems beginning upon final customer acceptance. Warranty expense was \$3,634, \$2,608, and \$1,574 for the years ended March 31, 1996, 1995, and 1994, respectively.

#### Net Income Per Share

Net income per share is based on the weighted average number of shares of common stock, common equivalent shares from convertible preferred stock using the "as if converted" method, and dilutive common equivalent shares from options and warrants outstanding during the period using the treasury stock method.

Pursuant to certain SEC Staff Accounting Bulletins, common stock issued for consideration below the assumed IPO price and stock options granted with exercise prices below the assumed IPO price during the 12-month period preceding the date of the Company's October 1995 IPO, even when antidilutive, have been included in the calculation of net income per share, using the treasury stock method based on the assumed IPO price, as if they were outstanding for all periods presented prior to their issuance or grant.

### Recent Accounting Pronouncements

In October 1995, the Financial Accounting Standards Board issued SFAS No. 123, Accounting for Stock-Based Compensation. SFAS No. 123 will be effective for fiscal years beginning after December 15, 1995, and will require that the Company either recognize in its consolidated financial statements costs related to its employee stock-based compensation plans, such as stock option and stock purchase plans, or make pro forma disclosures of such costs in a footnote to the consolidated financial statements.

The Company expects to continue to use the intrinsic value-based method of Accounting Principles Board Opinion No. 25, as allowed under SFAS No. 123, to account for all of its employee stock-based compensation plans. Therefore, in its consolidated financial statements for 1997, the Company will make the required pro forma disclosures in a footnote to the consolidated financial statements. SFAS No. 123 is not expected to have a material effect on the Company's consolidated results of operations or financial position.

#### Management Estimates and Assumptions

The Company's management has made a number of estimates and assumptions relating to the reporting of assets and liabilities and the disclosure of contingent assets and liabilities to prepare these consolidated financial statements in conformity with generally accepted accounting principles. Actual results could differ from those estimates.

#### NOTE 2. INVENTORIES

Inventories consisted of:

<TABLE>

<CAPTION>

March 31,	1996	1995
<s></s>	<c></c>	<c></c>
Raw materials	\$ 4,03	6 \$ 3,123
Work in process	3,17	3 1,372
Finished goods and spares	Ģ	9,738 8,173
	\$16,947	\$12,668

  |  |

#### NOTE 3. PROPERTY AND EQUIPMENT

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Property and equipment consisted of:

<TABLE> <CAPTION>

March 31,	1990	5 199	5	
<s> Machinery and equipment Demo lab equipment Leasehold improvements</s>	<c></c>	<c> \$ 6,670 2,670 2.279</c>	\$5,025  1,979	5
Less accumulated depreciation an	11,179 d amortiza  \$ 6,027	7,004 tion  \$2,565	5,152	4,439
∠/TADLE>	======	=====	==	

</TABLE>

## NOTE 4. ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES

A summary of accrued expenses and other current liabilities follows:

<TABLE> <CAPTION>

March 31,	1996 1995
<s></s>	<c> <c></c></c>
Payroll-related	\$ 1,532 \$1,526
Deferred rent	402 560
Income taxes payable	944 115
Other	3,480 3,751
	\$ 6,358 \$5,952
	======

</TABLE>

## NOTE 5. NOTES PAYABLE TO BANKS AND OTHERS

The Company has two lines of credit totaling \$13,000 with a U.S. bank. Both lines bear interest at prime (8.25 percent as of March 31, 1996), are secured by a blanket security in all of the Company's assets, and are available until August 15, 1997. The outstanding balances on the lines of credit as of March 31, 1996 and 1995, were \$0 and \$3,900 respectively. The lines of credit restrict the declaration and payment of cash dividends and include, among other terms and conditions, requirements that the Company maintain certain financial ratios and covenants. The Company was in compliance with such covenants as of March 31, 1996 and 1995.

The Company's Japanese subsidiary has two lines of credit available for 300,000 yen each (approximately \$5,593 at exchange rates prevailing as of March 31, 1996), bearing interest at 0.125 percent and 0.5 percent, respectively, in excess of Japanese prime (1.750 percent and 2.125 percent, respectively, as of March 31, 1996). Both lines of credit are available until November 1996, and

are secured by Japanese customer promissory notes provided in advance of payment. Outstanding balances on these lines in U.S. dollars as of March 31, 1996 and 1995, were \$243 and \$1,149, respectively.

#### NOTE 6. LONG-TERM DEBT

Long-term debt in 1995 consisted of a noninterest-bearing senior term loan payable to Motorola.

Under the terms of a Conversion Agreement with Motorola dated August 31, 1994, as amended August 8, 1995, upon the closing of the IPO of the Company's stock, the senior term loan was converted into a new promissory note in the principal amount of \$3,000, which was repaid in full out of the proceeds of the IPO.

## NOTE 7. OTHER EXPENSES, NET

Other expenses, net, consisted of the following:

<TABLE> <CAPTION>

Year ended March 31,		1996	19	95	1994	
<\$>	<c></c>	<c< td=""><td>&gt;</td><td><c></c></td><td></td><td>-</td></c<>	>	<c></c>		-
Interest income	\$	526	\$ 72	\$	100	
Interest expense	(8	870)	(802)	(	665)	
Foreign currency exchange	gain (loss	), net	(383)	Ç	92	(87)
Other	341	21	1	223		
	\$ (386)	\$(42'	7) \$	(429)	)	
				===		

</TABLE>

NOTE 8. INCOME TAXES Income tax expense consisted of:

<TABLE> <CAPTION>

Year ended March 31,		1996	1995	1994
<s></s>	<c></c>	<c></c>	<c></c>	
Current:				
U.S. federal	\$1,10	00 \$ 9	\$	
State and local	20	0 7		
Foreign	220	105		
	1,520	121		
			====	==
Deferred:				
U.S. federal	(900	0)		
State and local				
Foreign				
	(900)			
Total	\$ 620	\$ 121	\$	
			====	==

## </TABLE>

Income tax expense differs from the amounts computed by applying the U.S. federal income tax rate of 34 percent to pretax income as a result of the following:

<TABLE> <CAPTION>

Year ended March 31, 1996 1995 1994

<s> &lt;</s>	<c></c>	<c></c>	<c></c>	
Expected tax expense (benefit)		\$ 2,103	3 \$ 323	\$ (510)
State taxes net of federal benef	it	132		
Foreign losses not utilized			32 1,2	290
Reduction in valuation allowan	ce	(1,70	00) (250)	(789)
Other	85	16	9	
Income tax expense	\$	620	\$ 121	\$
==			= ====	==

  |  |  |  |</TABLE>

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The tax effects of temporary differences that give rise to significant portions of deferred tax assets and liabilities are presented below:

<TABLE> <CAPTION>

March 31,	1996		1995	
<s></s>	<c></c>		<c></c>	
Deferred tax assets:				
Accounts receivable	\$	50	\$ 50	0
Inventories	2,050	)	1,900	
Compensated absences		150	1	150
Warranty reserves	8	300	400	ı
Property and equipment		300	:	50
Capitalized research and de	velopment	15	0	
State taxes	50			
Other accruals	50	0	150	
Net operating loss carryfory	vards	150		2,300
			· <b>-</b>	
Total gross deferred tax	assets	4,200	5	,000
Less valuation allowance		3,300	5,	,000
Net deferred tax assets	\$	900	\$	-
		:		

</TABLE>

The Company has operating loss carryforwards in foreign jurisdictions amounting to approximately \$400, which will begin to expire on March 31, 1997.

Due to the IPO, the Company experienced an "ownership change" as defined by section 382 of the Internal Revenue Code. Due to the valuation of the Company, utilization of federal and state net operating losses was not affected.

## NOTE 9. LEASE COMMITMENTS

The Company has several noncancelable operating leases and capital leases, primarily for general office, production, and warehouse facilities, that expire over the next six years. Future minimum lease payments under these leases are as follows:

<TABLE> <CAPTION>

Year ended March 31,	Capital leases		Operating leases
<s></s>	<c></c>	<c></c>	
1997	\$738	\$2,52	28
1998		1,854	
1999		175	
2000		19	
2001		7	
Thereafter		4	
Total minimum lease paym	nents	\$738	\$4,587
Less amount representing i	interest	(66)	

</TABLE>

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The above schedule of minimum payments excludes minimum annual sublease rentals payable to the Company totaling \$444 through July 31, 1999, under operating subleases. In addition, most leases provide for the Company to pay real estate taxes and other maintenance expenses. Rent expense for operating leases was \$2,613, \$2,441, and \$2,573, during the years ended March 31, 1996, 1995, and 1994, respectively.

The gross amount of equipment under capital leases was \$1,006 and \$406 as of March 31, 1996 and 1995, respectively, with accumulated amortization of \$314 and \$91, respectively.

#### NOTE 10. REDEEMABLE PREFERRED STOCK

The redeemable preferred stock issued and outstanding as of March 31, 1995, comprised the series designated as follows:

<TABLE> <CAPTION>

COMMON

STOCK CARRYING
SHARES RESERVED FOR ISSUED AND VALUE
SERIES AUTHORIZED CONVERSION OUTSTANDING (IN THOUSANDS)

<s></s>	<c></c>	<c></c>	<c> <c< th=""><th><b>!&gt;</b></th></c<></c>	<b>!&gt;</b>
A	4,352,274	4,123,699	4,123,699	\$10,023
В	1,000	-	590 2,4	72
C	876,190	876,190	876,190	4,600
D	886,627	876,190	876,190	4,600
				-
	6,116,091	5,876,079	5,876,669	\$21,695
				=======================================

## </TABLE>

On October 31, 1991, 1,000 shares of Series B preferred stock were issued to Motorola as part of the restructuring agreement relating to the Company's obligations to Motorola (the Agreement). This stock was redeemable at the Company's option at any time up to October 31, 1997. The Company was obligated to redeem all shares outstanding on that date at a price of \$5,840 per share. In addition, shares could be redeemed through the issuance of purchase credits on sales of products to Motorola (as defined by the Agreement).

Under the terms of the Conversion Agreement with Motorola dated August 31, 1994, as amended August 8, 1995, upon the closing of the Company's IPO, the unredeemed shares of Series B preferred stock outstanding were converted into an obligation to Motorola in the form of a credit liability. The credit liability can be reduced through credits issued by the Company against a portion of the invoice price of equipment, parts, and contract services purchased by Motorola over a five-year period. The value of any unused credits at the end of such five-year period will be paid in cash. As of March 31, 1996, the credit liability, valued at its redemption value as of that date, was \$1,587.

Pursuant to agreements with all holders of outstanding Series A, C, and D redeemable convertible preferred stock, such stockholders converted all such outstanding shares into common stock on a one-for-one basis upon the closing of the Company's IPO. The Company issued 5,876,079 shares of common stock upon conversion of the redeemable convertible preferred stock.

On March 31, 1993, the Company issued a warrant to a bank for services rendered, granting the right to purchase 10,436 shares of Series D preferred stock at a price of \$5.25 per share. On September 28, 1993, the Company issued a warrant to the bank to provide antidilution protection to purchase 629 shares of common Stock for \$1.00. Both warrants were exercisable at any time before February 15, 1998.

On March 14, 1995, the Company agreed to replace both warrants with a new warrant to acquire 15,000 shares of common stock at a price of \$3.15 per share, with all other terms remaining the same as those of the replaced warrants.

#### NOTE 11. EMPLOYEE BENEFIT PLANS

#### Equity Incentive Plan

The Company has issued stock options and stock purchase rights to employees and stock grants to consultants of the Company under the terms of the Amended and Restated Equity Incentive Plan (Equity Incentive Plan). The exercise price of options and the purchase price of stock purchase rights generally is the fair value of the Company's common stock on the date of grant. Stock acquired pursuant to the exercise of options or stock purchase rights may be subject to repurchase by the Company upon termination of employment or consulting at the original exercise price for up to four years from the date the options were granted, with the buy-back rights partially expiring over that period of time. The options are exercisable for up to 15 years from the grant date of the option.

A summary of Equity Incentive Plan activity follows:

<TABLE> <CAPTION>

	Outstanding options			
	Number of shares	Exercise price per share		
<s></s>	<c></c>			
Options outstanding as of Ma	arch 31, 1993	489,695	\$.24	
Granted	579,769	\$.53		
Exercised	(131,769)	\$.53		
Expired due to termination	(21	,429) \$.24-	\$.53	
Options outstanding as of Ma	arch 31, 1994	916,266	\$.24-\$.53	
Expired due to termination	(19		\$.53	
Options outstanding as of Ma			\$.24-\$.53	
Granted	312,143	\$.53-\$12.00		
Exercised	(331,720)	\$.24-\$.53		
Expired due to termination	(62	2,855) \$.53		
Options outstanding as of Ma	arch 31, 1996	814,234	\$.24-\$12.00	

Under the Equity Incentive Plan, the Company is authorized to grant options to purchase up to an additional 92,131 shares of common stock. During the years ended March 31, 1996, 1995, and 1994, the Company granted 0, 5,714, and 26,329 shares, respectively, of common stock to employees and consultants. As of March 31, 1996, 808,545 shares of common stock were issued and outstanding under the Equity Incentive Plan.

## 1990 Stock Option Plan

</TABLE>

The Company's 1990 Stock Option Plan (Option Plan) allows employees of the Company or its affiliates to receive options to purchase common stock of the Company. The options are exercisable for a period of up to 10 years from the date of grant of the option. Shares purchased pursuant to the Option Plan can be repurchased by the Company at the original exercise price upon termination of employment for up to four years from the date the options vest, with the Company's buy-back rights expiring over that period of time.

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A summary of Option Plan activity follows:

<TABLE> <CAPTION>

Outstanding options

	Number of shares	•	
<\$>	<c></c>		
Options outstanding as of M	Iarch 31, 1993	84,202	\$.24
Granted	12,214	\$.24-\$ .53	
Exercised	(6,980)	\$.24	
Expired due to termination	(8,	,946) \$.24-5	\$ .53
Options outstanding as of M	Iarch 31, 1994	80,490	\$.24-\$ .53
Granted	32,214		
	(7,397)		
Expired due to termination	(8,	,307) \$.24	
Options outstanding as of M	 Iarch 31, 1995	99,000	\$.24-\$ .53
Granted		\$.53-\$12.00	
Exercised	(26,525)	\$.24-\$ .53	
Expired due to termination	(2,	,270) \$.24-5	\$12.00
Options outstanding as of M	Iarch 31, 1996	258,868	\$.24-\$12.00

</TABLE>

Under the Option Plan, the Company is authorized to grant options to purchase up to an additional 102,093 shares of common stock. As of March 31, 1996, 46,195 shares of common stock were issued and outstanding under the Option Plan.

## Directors Stock Option Plan

The Company has established a Stock Option Plan for Outside Directors (the Directors Plan). Under the Directors Plan, the Company is authorized to grant options to purchase up to 300,000 shares of common stock. As of March 31, 1996, no shares of common stock were issued and outstanding under the Directors Plan.

#### Stock Purchase Plan

The Company has established an Employee Qualified Stock Purchase Plan (the Employee Plan). Under the Employee Plan, the Company is authorized to grant options to purchase up to 250,000 shares of common stock. As of March 31, 1996, no shares of common stock were issued and outstanding under the Employee Plan.

### Savings and Investment Plan

The Company has established a defined contribution plan that covers substantially all U.S. employees who are regularly scheduled to work 20 or more hours per week. Employee contributions of up to 4 percent of each covered employee's compensation will be matched by the Company based upon a percentage to be determined annually by the Board of Directors. Employees may contribute up to 15 percent of their compensation, not to exceed a prescribed maximum amount. The Company made contributions to the plan of \$27, \$21, and \$19 in the years ended March 31, 1996, 1995, and 1994, respectively.

#### NOTE 12. CUSTOMERS AND FOREIGN OPERATIONS

The Company's sales are primarily to domestic and international semiconductor manufacturers. The top five customers accounted for approximately 42 percent, 42 percent, and 34 percent of the Company's total net sales for the years ended March 31, 1996, 1995, and 1994, respectively. Two customers accounted for approximately 14 percent, and 13 percent,

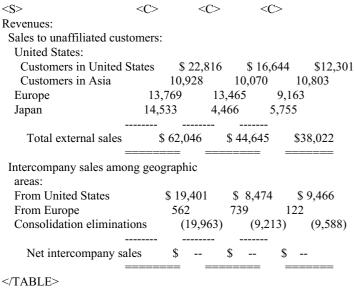
49

respectively, of net sales for the year ended March 31, 1996; two customers accounted for approximately 15 percent and 14 percent, respectively, of net sales for the year ended March 31, 1995; and no customers accounted for more than 10 percent of the Company's net sales for the year ended March 31, 1994.

The Company's operations by geographical region were as follows:

<TABLE> <CAPTION>

Year ended March 31, 1996 1995 1994



Intercompany sales among the Company's geographic areas are recorded on the basis of intercompany prices established by the Company.

<TABLE> <CAPTION>

Year ended March 31,		1996	1995	1994
<s></s>	<c></c>	<c></c>	<c></c>	
Operating income (loss):				
United States	\$ 4,46	5 \$ 2	2,502 \$	1,872
Europe	594	(158	3) (1,80	17)
Japan	1,513	(968	(1,13	7)
Operating income (lo	ss) \$	6,572	\$ 1,376	\$(1,072)
=			=	

  |  |  |  |

#### </TABLE>

<TABLE>

<CAPTION>

CH HOIV			
Year ended March 31,	19	996	1995
<s> &lt;</s>	<c></c>	<c></c>	
Identifiable assets at year-en	ıd:		
United States	\$ 67,208	\$ 32,	169
Europe	11,842	12,758	8
Japan	9,684	4,978	
Consolidation eliminations	(24	,962)	(16,161)
Total identifiable assets	\$ 63,7	72 \$	33,744

## </TABLE>

#### NOTE 13. RELATED PARTY TRANSACTIONS

During 1994, the Company forgave a promissory note owed by an officer in the amount of \$176.

During 1996, 1995, and 1994, the Company had sales to Motorola in the amount of \$8,428, \$6,442, and \$1,536, respectively, with related accounts receivable of \$789, \$1,561, and \$176 as of March 31, 1996, 1995, and 1994, respectively.

INDEPENDENT AUDITORS' REPORT

The Board of Directors Tegal Corporation:

We have audited the accompanying consolidated balance sheets of Tegal Corporation and subsidiaries as of March 31, 1996 and 1995, and the related consolidated statements of operations, stockholders' equity (deficit), and cash flows for each of the years in the three-year period ended March 31, 1996. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Tegal Corporation and subsidiaries as of March 31, 1996 and 1995, and the results of their operations and their cash flows for each of the years in the three-year period ended March 31, 1996, in conformity with generally accepted accounting principles.

## /s/ KPMG Peat Marwick LLP KPMG PEAT MARWICK LLP

Palo Alto, California April 23, 1996

## 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.

Dated: June 24, 1996

#### TEGAL CORPORATION

By: /s/ Robert V. Hery

\_\_\_\_\_

Robert V. Hery

Chairman, President & Chief Executive Officer

### POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Robert V. Hery and David Curtis, jointly and severally, his attorneys-in-fact, each with the powers of substitution, for him in any and all capacities, to sign any amendments to this Report of Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his substitute or substitutes, may do or cause to be done by virtue hereof.

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	Title	Date	
<caption></caption>			
<table></table>			

/s/ Robert V. Hery	Chairman, President, Chief Executive Officer and Direct	June 24, 1996 etor
Robert V. Hery	(Principal Executive Officer	·)
	Chief Financial Officer (Principal Financial Officer	June 24, 1996
David Curtis		
/s/ William F. O'Shea	Corporate Controller (Principal Accounting Offic	June 24, 1996
William F. O'Shea		,
/s/ Fred Nazem		June 24, 1996
Fred Nazem		
/s/ Jeffrey Krauss		June 24, 1996
Jeffrey Krauss		
/s/ Thomas Mika		June 24, 1996
Thomas Mika		
/s/ Robert Anderson		June 24, 1996
Robert Anderson		

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Schedule II

## TEGAL CORPORATION

Valuation and Qualifying Accounts

Years ended March 31, 1994, 1995, 1996

(In thousands)

<TABLE> <CAPTION> Balance at Charged to Charged Balance Costs and to Other Beginning at End Descriptions of Year Expenses Accounts Deductions of Year <S> <C> <C> <C> <C> <C> Year ended March 31, 1994: Product warranty \$ 2,337 \$ 1,574 \$ 13 \$(2,138) \$1,786 Doubtful accounts 253 236 Sales returns and allowances 117 177 (177)Cash discounts 18 Year ended March 31, 1995: 1,786 2,608 (239)(3,000)Product warranty Doubtful accounts 261 15 389 185 Sales returns and allowances 177 (381)Cash discounts 29 22 (77)Year ended March 31, 1996: 3,634 (2,199)2,586 Product warranty 1,155 (4) Doubtful accounts 261 262 (94)(68)83 Sales returns and allowances 185 298 Cash discounts 29 87 (78)(29)</TABLE>

## INDEX TO EXHIBITS

Exhibit

Number Description of Exhibit

- 11 Statement Regarding Computation of Net Income Per Share.
- 23.1 Consent of Independent Auditors.
- 24.1 Powers of Attorney (included on page 52.)
- 27.1 Financial Data Schedule.

Statement Regarding Computation

of Net Income Per Share

(In thousands, except per share data)

<TABLE> <CAPTION>

Year Ended March 31,

1996 1995

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Weighted average shares outstanding

during the period 4,692

4,692 534

Preferred stock on an "as if" converted basis 3,309 5,876

Common shares issued and stock options

granted in accordance with Staff

Accounting Bulletin No. 83 1 774

Common stock equivalent 897 189

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Shares used in per share computation 8,899 7,373

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Net income per share \$ 0.63 \$ 0.11

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</TABLE>

## Consent of Independent Auditors

The Board of Directors Tegal Corporation:

We consent to incorporation by reference in the registration statement (No. 333-462) on Form S-8 of Tegal Corporation of our reports dated April 23, 1996, relating to the consolidated financial statements of Tegal Corporation as of March 31, 1996 and 1995, and the related consolidated statements of operations, stockholders' equity (deficit), and cash flows for each of the years in the three-year period ended March 31, 1996, and the related schedule, which reports appear in the March 31, 1996 annual report on Form 10-K of Tegal Corporation.

/s/ KPMG Peat Marwick LLP KPMG PEAT MARWICK LLP

Palo Alto, California June 28, 1996

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