

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
SCHEDULE 13G
Under the Securities Exchange Act of 1934
(Amendment No. _____)

Tegal Corporation

(Name of Issuer)

Common Stock, No Par Value

(Title of Class of Securities)

879008100

(CUSIP Number)

with a copy to:
Austin W. Marxe Allen B. Levithan, Esq.
153 East 53rd Street Lowenstein Sandler PC
New York, New York 10022 65 Livingston Avenue
Roseland, New Jersey 07068
(973) 597-2406

(Name, Address and Telephone Number of Person
Authorized to Receive Notices and Communications)

January 31, 2004
(Date of Event which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this
Schedule is filed:

Rule 13d-1(b)
 Rule 13d-1(c)
 Rule 13d-1(d)

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

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

Cusip No. 879008100 13G Page 2 of 6 Pages
1. Names of Reporting Persons. I.R.S. Identification Nos. of above persons
(entities only):

Austin W. Marxe and David M. Greenhouse

2. Check the Appropriate Box if a Member of a Group (See
Instructions):

(a) Not Applicable
(b)

3. SEC Use Only

4. Source of Funds (See Instructions): 00

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to
Items 2(d) or 2(e):
Not Applicable

6. Citizenship or Place of Organization: United States

Number of 7. Sole Voting Power: 0

Shares Beneficially 8. Shared Voting Power: 4,105,926*

Owned by

Each Reporting 9. Sole Dispositive Power: 0

Person With 10. Shared Dispositive Power: 4,105,926*__

11. Aggregate Amount Beneficially Owned by Each Reporting Person:
4,105,926*

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares
(See Instructions): Not Applicable

13. Percent of Class Represented by Amount in Row (11): 19.5%*

14. Type of Reporting Person (See Instructions): IA, IN

* This is a joint filing by Austin W. Marxe (?Marxe?) and David M. Greenhouse (?Greenhouse?). Marxe and Greenhouse share sole voting and investment power over 564,205 bonds convertible for 1,612,014 shares of Common Stock and 857,131 Warrants owned by Special Situations Private Equity Fund, L.P., 311,599 bonds convertible for 890,283 shares of Common Stock and 477,906 Warrants owned by Special Situations Technology II Fund, L.P., and 61,277 bonds convertible for 175,077 shares of Common Stock and 93,515 Warrants owned by Special Situations Technology Fund, L.P. See Items 2 and 4 of this Schedule for additional information.

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Item 1. Security and Issuer:

(a) Tegal Corporation

(b) 2201 South McDowell Blvd., Petaluma, CA 94954

Item 2. (a) Name of Person Filing:

The persons filing this report are Austin W. Marxe (?Marxe?) and David M. Greenhouse (?Greenhouse?), who are members of MG Advisers L.L.C. (?MG?), the general partner of and investment adviser to Special Situations Private Equity Fund, L.P. (?SSPE?), and members of SST Advisers, L.L.C. (?SSTA?), the general partner of and investment adviser to Special Situations Technology Fund, L.P. (?Technology?) and Special Situations Technology Fund II, L.P. (?Technology II?). (SSPE, Technology and Technology II will hereafter be referred to as, the ?Funds?). The principal business of each Fund is to invest in equity and equity-related securities and other securities of any kind or nature.

(b) Address of Principal Business Office or, if none, Residence:

The principal business address for Marxe and Greenhouse is 153 East 53rd Street, 55th floor, New York, NY 10022.

(c) Citizenship:

Austin W. Marxe and David M. Greenhouse are United States citizens.

(d) Title of Class of Securities: Common Stock

(e) CUSIP Number: 879008100.

Item 3. If this statement is filed pursuant to §240.13d-1(b) or 240.13d-2(b), check whether

the person filing is a: Not Applicable

(a) Broker or Dealer registered under section 15 of the Act;

(b) Bank as defined in section 3(a) (6) of the Act;

(c) Insurance Company as defined in section 3(a) (19) of the Act;

(d) Investment Company registered under section 8 of the Investment Company Act of 1940;

(e) An Investment Adviser in accordance with §240.13d

-1(b)(I)(ii)(E);

(f) () An employee benefit plan or endowment fund in accordance with §240.13d-1(b)(1)(ii)(F);

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(g) () A parent holding company or control person in accordance with §240.13d-

1(b)(1)(ii)(G);

(h) () A savings association as defined in Section 3(b) of the Federal Deposit Insurance

Act;

(i) () A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940;

(j) () Group, in accordance with §240.13d-1(b)(1)(ii)(J).

Item 4. Ownership:

(a) Amount Beneficially Owned: Messrs. Marxe and Greenhouse beneficially own a total of 4,105,926 shares of Common Stock, consisting of 937,081 bonds convertible for 2,677,374 shares of common stock and Warrants to purchase 1,428,552 shares of Common Stock. 564,205 bonds convertible for 1,612,014 shares of Common Stock and 857,131 Warrants owned by SSPE, 61,277 bonds convertible for 175,077 shares of Common Stock and 93,515 Warrants owned by Technology, and 311,599 bonds convertible for 890,283 shares of Common Stock and 477,906 Warrants.

(b) Percent of Class: Messrs. Marxe and Greenhouse beneficially own 19.5% of the shares outstanding. SSPE owns 12.7% of the outstanding shares, Technology owns 1.6% of the outstanding shares, and Technology II owns 7.5% of the outstanding shares.

(c) Number of Shares as to which the person has:

(i) Sole power to vote or to direct the vote: 0

(ii) Shared power to vote or to direct the vote: 4,105,926

(iii) Sole power to dispose or to direct the disposition of: 0

(iv) Shared power to dispose or to direct the disposition of:
4,105,926

Item 5. Ownership of Five Percent or Less of a Class: If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following ___.

Item 6. Ownership of More than Five Percent on Behalf of Another Person: Not Applicable.

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Item 7. Identification and Classification of the Subsidiary Which Acquired the Security being Reported on By the Parent Holding Company: Not Applicable.

Item 8. Identification and Classification of Members of the Group: Not applicable

Item 9. Notices of Dissolution of Group: Not applicable.

Item 10. Certification:

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

SIGNATURE

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

Dated: February 10, 2004

/s/ Austin W. Marxe
AUSTIN W. MARXE

/s/David M Greenhouse
DAVID M. GREENHOUSE

Attention: Intentional misstatements or omissions of fact constitute Federal criminal violations (See 18 U.S.C. 1001).

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JOINT FILING AGREEMENT

Austin W. Marxe and David M. Greenhouse hereby agree that the Schedule 13G to which this agreement is attached is filed on behalf of each of them.

/s/_Austin W. Marxe
Austin W. Marxe

/s/_David M. Greenhouse
David M. Greenhouse

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