

November 8, 2007

Mail Stop 6010

Maurice R. Ferré, M.D.
President and Chief Executive Officer
MAKO Surgical Corp.
2555 Davie Road
Ft. Lauderdale, FL 33317

**Re: MAKO Surgical Corp.
Registration Statement on Form S-1
Filed October 26, 2007
File No. 333-146162**

Dear Dr. Ferré:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Graphics

1. Please include your prospectus graphics with your Edgar filing.

Our Market, page 2.

2. Please tell us how your disclosure reflects the statements in the material you provided in response to prior comment 6 that the study was “unable to confirm the validity of the estimates of unmet need.”
3. Given your response to prior comment 6 that you did not obtain the consent of your data sources, please tell us how you have ensured that the data you cite remains reliable.

Use of Proceeds, page 36

4. We note your response to prior comment 11; however, Regulation S-K Item 504 requires that you disclose the approximate amount intended to be used for each disclosed purpose. See instruction 7 to Item 504. Also, please address the last sentence of Item 504.

Liquidity and Capital Resources, page 55

5. Please refer to prior comment 17 and respond to the following:
 - Revise your discussion of liquidity to clearly disclose and quantify the amount of deferred revenue and deferred cost of revenue recorded at your most recent balance sheet date that relates to the HGS upgrades. In addition, please quantify the number of HGS units sold that are required to be upgraded to version 2.0. Specifically, we note on page 1 that you have installed four commercial systems and two research and development systems. Clarify if all six systems are subject to upgrade.
 - In this regard, we note in the sample contract provided that customers are obligated to pay a non-refundable deposit upon installation of the equipment and a non-refundable payment upon customer acceptance. Please quantify the amount of deposits and payments collected to date and tell us where they are recorded on your balance sheet.
 - To the extent possible, please revise to provide the reader with an estimate of the costs you expect to incur to provide upgrades to version 2.0. We note in your response that you anticipate “ultimately recognizing a positive margin on the sales of HGS units to date including the satisfaction of the remaining upgrades through the final deliverable of version 2.0 of HGS.” Please support this statement.
 - Please tell us more about your “technology obsolescence protection (TOP) program.”
 - We note that “no right of return exists on sales of HGS” if you are unable to complete and deliver version 2.0 of HGS. Please tell us and revise the filing to disclose, the consequence if you are unable to deliver version 2.0. Specifically, tell us whether the customer retains the HGS equipment and if you are required to refund the purchase price.

We may have additional comments after reviewing your response.

Patents, page 77

6. Given the disclosure provided in response to prior comment 23, please highlight in your prospectus summary that material patents are expiring. Also provide more specific information regarding the date of expiration.

Regulatory Requirements, page 79

7. Please expand the disclosure provided in response to prior comment 24 to clarify the effect on your disclosed timetable if your “Special 510(k)” application is converted to a “Traditional 510(k)” application.

Fraud and Abuse Laws, page 85

8. We note your response to prior comments 26 and 27. If you base your conclusions regarding the legality of your activities on a the terms of a third party’s deferred prosecution agreement, please make this clear in your disclosure and disclose any material risks of relying on such an agreement.
9. Please expand your response to prior comments 26 and 27 to address the programs mentioned in response 55.

Compensation Discussion and Analysis, page 93

10. Please revise your disclosure and your response to prior comment 31 to clarify whether you know the component companies in any of the surveys you cite.
11. We note the disclosure of issuance of stock options in August 2007 to your CEO on page F-38. Please tell us where you have discussed these option grants in this section.

Perquisites and Other Benefits, page 98

12. Please revise your disclosure provided in response to prior comment 36 that the loan forgiveness was “in recognition of ...performance” to provide more specific information regarding what element of performance the loan forgiveness was intended to compensate and how the amount of the compensation was determined.

2006 Summary Compensation Table, page 100

13. We note your response to prior comment 37 and comment 58. Please tell us how you determined the amount recognized for your CEO’s 2005 restricted stock grant under FAS 123R for the period covered by the table.

Termination and Change in Control Payments, page 106

14. Please tell us the authority on which you rely to exclude the tax gross-ups from the table of post-termination compensation amounts.

Certain Relationships and Related Party Transactions, page 111

15. We note your response to our prior comment 41. Please describe the equity ownership in Z-KAT by Mr. Dewey and your named executive officers.

16. Prior comment 42 sought disclosure in your prospectus. Please provide such disclosure.
17. Regarding your response to prior comment 43:
 - Please clarify how you determined that the portion of royalties you agreed to pay was “ratable.”
 - Revise the penultimate paragraph of the “Z-KAT Transactions” section to replace the vague term “certain” with more meaningful disclosure needed for investors to evaluate the related-party transaction.
18. Regarding your response to prior comment 48, please relocate disclosure regarding transactions that are not with related parties to a more appropriate section of your document.

Z-KAT Transactions, page 103

19. We note the reference to “subject to prior license grants.” Please disclose the extent of the prior license grants.

Financial Statements, page F-1

Statement of Redeemable Convertible Preferred Stock and Stockholder’s Deficit, page F-6

20. We note on page F-9, that you issued one hundred shares of your common stock to Z-KAT in connection with your formation in November 2004. Please tell us how you have accounted for and presented the issuance of these common shares in your statement of stockholders’ equity.

The Company – Acquisition of Assets from Predecessor, page F-20

21. Please refer to prior comment 56. We note that you revised the disclosure to state that Mako acquired “a portion” of Z-KAT’s assets. Please provide the organization structure for MAKO and Z-KAT both before and after the agreement. Clarify what assets, liabilities and licenses were transferred to MAKO and what remained with Z-KAT.
22. Please refer to prior comment 57. We note in your response that only a portion of Z-KAT’s assets were included under the contribution agreement. Please tell us how you concluded that all of the business operations of Z-KAT, Inc. and not just its “image-guided surgery and haptic robotic business” related to the orthopedic field represented the predecessor operations.
23. Tell us whether following the December 2006 addendum to the contribution agreement you owned all of the assets and operations of Z-KAT.

Note 4. Related Parties, page F-20

Acquisition of Assets From Predecessor, page F-20

24. We note that at your formation and asset contribution from Z-KAT, you issued 4,270,000 shares of common stock, 1,998,744 shares of Series A preferred stock, and a warrant to purchase 577,084 shares of common stock to Z-KAT. It appears that you are allocating the entire carrying value of Z-KAT's net assets of approximately \$652,000 to the Series A preferred stock and are accreting the preferred stock to its redemption value. We also note on page F-36, that you valued the warrants at \$99,000 and recorded these as a discount to the Series A preferred stock. Please explain your accounting in greater detail. Specifically how you valued and recorded the formation and asset contribution and the accounting literature upon which you relied.

Note 8. Stockholders' Deficit, page F-30

25. Please refer to prior comment 63. Please update the option activity to the most recent practical date. We note that you have not disclosed an estimated offering price. Be advised that we are deferring final evaluation until the estimated offering price is specified.

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;

- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

You may contact Kevin Kuhar at (202) 551-3662 or in his absence, Angela Crane at (202) 551-3554 if you have questions regarding comments on the financial statements and related matters. Please contact Jay Mumford at (202) 551-3637 or me at (202) 551-3617 with any other questions.

Sincerely,

Russell Mancuso
Branch Chief

cc: (via Fax): Stuart A. Barr

Maurice R. Ferré, M.D.
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