



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 6010

August 28, 2007

VIA U.S. MAIL and FACSIMILE

Jeffery A. Baird
CAS Medical Systems, Inc.
Chief Financial Officer
44 East Industrial Road
Branford, Connecticut 06405

RE: CAS Medical Systems, Inc.
Form 10-KSB for the fiscal year ended December 31, 2006
Filed March 19, 2007
Form 10-Q for the quarterly period ended June 30, 2007
File No. 000-13839

Dear Mr. Baird:

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.

Form 10-KSB for the fiscal year ended December 31, 2006

Description of Business, page 3

Principal Products and Services, page 3

1. You describe various product groups on pages 3 and 4. Please expand the notes to future financial statements to provide disclosure of revenues from product lines pursuant to paragraph 37 to SFAS 131. If you believe such disclosure is not required, please tell us why.
2. Please also expand the notes to future financial statements to make geographic disclosures about revenues pursuant to paragraph 38 to SFAS 131.

Consolidated Financial Statements

Report of UHY LLP, Independent Registered Public Accounting Firm, page F-1

3. We see that the third paragraph of the audit report refers only to results of the audit of “the consolidated results of [the company’s] operations and cash flows for the *year* then ended.” Please revise to state, if true, that the operations and cash flows for the *years* ended December 31, 2006 and 2005 are presented fairly, in all material respects, in conformity with accounting principles generally accepted in the United States of America.

Note 2, Acquisition, page F-6

4. We see that you recorded a significant amount of the Statcorp purchase price to goodwill and an insignificant amount to other intangible assets. We see that Statcorp was an operating business with customers, products and technology. Please fully describe to us how you evaluated the acquired business in performing a search for and allocating the amount to other intangible assets. In this regard, also tell us how you considered and applied the guidance from paragraphs 39 and A10 – A28 of SFAS 141 and EITF 02-17. In addition, please tell us and revise future filings to disclose the nature of acquired intangible assets in accordance with paragraph 52(a) of SFAS 141.

Note 3, Summary of Significant Accounting Policies, page F-7

Intangible and Other Assets, page F-8

5. Please disclose the useful lives assigned to your intangible assets.
6. As a related matter, we see that the net balance of intangible and other assets as of 2006 is approximately \$457,000. Please tell us how expected amortization decreases to only \$6,000 in 2010. If the \$457,000 includes assets other than amortizing intangible assets, please further disaggregate the tabular disclosure to clarify the composition of the account.

Revenue and Accounts Receivable Recognition, page F-8

7. In future filings please revise to describe the terms and conditions of product sales in sufficient detail to support that your practices are appropriate. Specifically address the nature and extent of any post shipment obligations and customer acceptance provisions, including discussion of how such obligations and provisions are considered in your practices. Also address return policies and payment terms for both end-users and resellers. To the extent the terms and conditions of sale vary based on product, service, customer or other factor your disclosure should be specific. Please show us what you plan to disclose.

Stock-based Compensation, page F-10

8. In future filings please add disclosure that describes management's bases for each of the assumptions used for Black-Scholes purposes, including estimated forfeitures.
9. In future filings please disclose how you determine the fair value of restricted stock. If you use other than quoted market price, please tell us how your measurements are appropriate under SFAS 123(R).

Form 10-Q for the quarterly period ended June 30, 2007

Condensed Consolidated Financial Statements

Note 9. Material Commitments, page 10

10. We see that you entered into agreements for the sale and leaseback of your headquarters and manufacturing facility that is expected to close in the third quarter of 2007. Please tell us how you will account for the sale lease-back in accordance with SFAS 13, SFAS 98 and SFAS 28, as appropriate.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter with your response 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 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 Exchange Act of 1934 and that they have provided all information investors require for an informed 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.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments 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 our review of your filing or in response to our comments on your filing.

You may contact Kristin Lochhead at (202) 551-3664 or me at (202) 551-3605 if you have questions. In this regard, please do not hesitate to contact Brian Cascio, Accounting Branch Chief, at (202) 551-3676 with any other questions.

Sincerely,

Gary Todd
Reviewing Accountant