

Mail Stop 6010

February 29, 2008

Via U.S. Mail and Fax (847) 367-8640

Stephen J. Hawrysz
Chief Financial Officer
Eagle Test Systems, Inc.
2200 Millbrook Drive
Buffalo Grove, Illinois 60089

**Re: Eagle Test Systems, Inc.
Form 10-K for the fiscal year ended September 30, 2007
Filed December 6, 2007
File No. 000-51828**

Dear Mr. Hawrysz:

We have reviewed your filings and have the following comments. We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your documents. Where indicated, we think you should revise your future filings 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 comment or on any other aspects of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-K for the fiscal year ended September 30, 2007

Liquidity and Capital Resources, page 34

Item 7.A. Quantitative and Qualitative Disclosures About Market Risk, page 36

1. We note that approximately \$102 million of your assets are in the form of marketable securities, which consist of auction rate securities and variable rate demand notes. In your future filings, as applicable, please clearly discuss the nature of the material aspects of these securities as necessary to provide your investors with information necessary for a clear understanding of your balance sheet items. For example, as appropriate, identify the nature of your auction rate securities and variable rate demand notes that you hold, indicate what factors may affect the value or liquidity of those securities, disclose how the interest rates on those investments will be determined and any material risks. Also, if those securities are reasonably likely to affect your financial condition in a material way, please expand your discussion and analysis in applicable future filings to provide your investors with information necessary for a clear understanding of the trend or uncertainty. Refer to Item 303(a) of Regulation S-K. Also add any appropriate disclosure required by Item 305 of Regulation S-K.

Critical Accounting Policies and Estimates, page 29

2. In future filings, as applicable, revise the Critical Accounting Policies and Estimates to discuss the material accounting estimates and assumptions you make in valuing your auction rate securities and variable rate demand notes. Describe the process by which you determine the value of those securities, the levels of judgment involved and the susceptibility of the resulting value to changes in your estimates and assumptions.

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 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.

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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 Praveen Kartholy, Staff Accountant, at (202) 551-3778 or me at (202) 551-3676 if you have questions regarding these comments and related matters. You may also contact Martin F. James, Senior Assistant Chief Accountant, at (202) 551-3671.

Sincerely,

Brian R. Cascio
Accounting Branch Chief