



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

Mail Stop 6010

November 24, 2008

Via Facsimile and U.S. Mail

Mr. J. Bruce Robinson
Chief Executive Officer
Zygo Corporation
Laurel Brook Road
Middlefield, CT 06455

Re: Zygo Corporation
Form 10-K for the fiscal year ended June 30, 2008
Filed September 15, 2008
Form 10-Q for the quarter ended September 30, 2008
File No. 0-12944

Dear Mr. Robinson:

We have reviewed your filings and have the following comments. Where indicated, we think you should revise 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 comments or on any other aspect 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 June 30, 2008

Index to Consolidated Financial Statements and Schedule, page F-1

Consolidated Balance Sheets, page F-3

1. We note that you have accrued \$5.2 million and \$8.7 million of progress payments as of June 30, 2008 and 2007, respectively. Please revise your notes in future filings to clearly explain the nature of these progress payments and your accounting policy associated with these payments.

Note 1. Summary of Significant Accounting Policies, page F-7

-Revenue Recognition, page F-8

2. We note that you provide a standard right of return to your customers and that you account for this right of return as a warranty provision under SFAS 5. Please tell us and revise future filings to explain the nature of the right of return that you offer to your customers. Within your discussion, please explain to us why you account for rights of return under SFAS 5 rather than pursuant to SFAS 48.

Note 2. Acquisition, page F-10

3. We note from your disclosures here and on the facing page of this filing that you acquired certain assets of Solvision, Inc. for \$5.1 million, net of cash received, on February 28, 2008 and that you were required to file stand-alone audited financial statements for Solvision, Inc. for each of its latest two fiscal years by May 13, 2008. We further note that you intend to file Solvision Inc.'s audited financial statements "as soon as practicable." Please tell us when you reasonably expect to file an Item 2.01 Form 8-K that contains Solvision's Inc.'s historical financial statements. Within your response, please also confirm to us that you will include the pro forma financial statements required by Article 11 of Regulation S-X within your Item 2.01 Form 8-K. Please note that you may not be considered a timely filer since you have not filed the required financial statements for this acquisition within the prescribe timeframe and that this may impact your eligibility to use certain forms to register your securities under the Securities Act of 1933.

4. Note 3. Marketable Securities, page F-12

We note that a significant amount of your held-to-maturity investments are in "corporate, federal, state, and local municipal" debt securities. As applicable, please revise future filings to separately present amounts held in debt securities issued by U.S. Government, state governments, foreign governments, and corporations. To the extent that your debt

Mr. J. Bruce Robinson
Zygo Corporation
November 24, 2008
Page 3

securities are concentrated in one of the above categories, please revise future filings to disclose that fact. Refer to paragraph 19(b)-(e) of SFAS 115.

Form 10-Q for the quarter ended September 30, 2008

Liquidity and Capital Resources, page 18

5. We note your disclosures related to your marketable securities. We further note that you intend to hold all of your securities to maturity even though you are heavily invested in the finance sector. Please revise your future filings to disclose if you also have the ability to hold these securities until maturity.

* * * *

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 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 and 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.

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.

Mr. J. Bruce Robinson
Zygo Corporation
November 24, 2008
Page 4

You may contact David Burton, Staff Accountant, at (202) 551-3626 or Tara Harkins, Staff Accountant, at (202) 551-3639 if you have questions regarding comments on the financial statements and related matters. In this regard, do not hesitate to contact me at (202) 551-3643.

Sincerely,

Kevin L. Vaughn
Accounting Branch Chief