

Sun Hydraulics Corporation
1500 West University Parkway
Sarasota, FL 34243

November 17, 2008

VIA EDGAR

Securities and Exchange Commission
Division of Corporation Finance
100 F Street, NE
Washington, D.C. 20549
Attention: Terence O'Brien, Accounting Branch Chief

RE: Sun Hydraulics Corporation
Form 10-K for the Fiscal Year Ended December 29, 2007
Filed March 12, 2008
Schedule 14A Filed on April 25, 2008
Forms 10-Q for the Fiscal Quarters Ended March 29, 2008 and
June 28, 2008
File No. 0-21835

Dear Mr. O'Brien:

On behalf of Sun Hydraulics Corporation ("the Company"), I am writing in response to the comments set forth in your letter addressed to the undersigned dated November 3, 2008 (the "Comment Letter"). Attached to this letter is our acknowledgement of receipt of the Comment Letter from the Company's CEO dated November 6, 2008. For the convenience of the Staff of the Division of Corporation Finance of the Securities and Exchange Commission (the "Staff"), each of the Staff's comments is repeated below, along with the Company's response to each comment set forth immediately following the comment.

Comment 1

Form 10-K for the Fiscal Year Ended December 29, 2007

Item 1. Business, page 2

1. We note that you discuss the costs of environmental compliance as a risk factor that could have a material impact on your business, financial condition and results of operations. In future filings, please provide additional disclosure regarding the material effects of compliance with federal, state and local environmental provisions on capital expenditures, earnings and your competitive position, as required by Item 101(c)(1)(xii) of Regulation S-K.

Response to Comment 1

The Company has not suffered any material adverse effects due to compliance with environmental laws or regulations but has recognized in its disclosure of possible risks, the possibility that compliance with federal, state and local environmental provisions could result in increased capital expenditures and affect its earnings and competitive position. If occurrences arise in the future that present specific risks, the Company will disclose them at that time.

Comment 2

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 18

Results of Operations, page 20

2. In future filings, please expand/revise your results of operations discussion for each period presented to address the following items, at a minimum:

- Provide a discussion and analysis of your results of operations at both the consolidated level and at the reportable segment level. Your analysis at the consolidated level should focus on the line items included in your consolidated statement of operations. Whereas, your reportable segment analysis should focus on net sales and segment operating income, as your profit measure. Refer to Item 303(A) of Regulation S-K for guidance.
- Separately quantify the impact changes in volume, pricing and the introduction of new products have had on net sales. Refer to Item 303(A)(3)(iii) of Regulation SK for guidance.
- Quantify the impact of other factors you identify that contributed to fluctuations. For example, you attribute the increase in your gross profit margin for fiscal year 2007 versus fiscal year 2006 to (a) fixed cost absorption; (b) higher sales volume; (c) sales price increase in July 2006; (d) productivity improvements in the US; (e) improvements in selective material pricing on high volume purchased parts; and (f) foreign currency exchange.
- We note from your analyst conference call transcripts that you charge your customers a higher price for expedited orders. Please quantify the extent to which such orders impact sales and your gross profit margin, as appropriate.
- Provide a more detailed analysis of the factors that impact the areas comprising your income from continuing operations, including a complete discussion of known trends or anticipated trends that are and/or may continue to have an impact on net sales, gross profit margins, selling, general and administrative expenses as a percentage of net sales, et cetera, including management's outlook as to the future impact. Your discussion and analysis is to provide investors with sufficient information to understand the historical trends and the expectations for the future as seen through the eyes of management. Currently, you quantify the percentage of the increase in net sales in your geographic locations without any explanation as to why. It is unclear how disclosing such information sufficiently explains to investors the material factors impacting your operating results.

Please note that this is not meant to represent an all-inclusive list of where your MD&A could be improved. We encourage you to provide further analysis throughout your discussion. Refer to Item 303 of Regulation S-K, Section 501 of the Financial Reporting Codification, and SEC Interpretive Release No. 33-8350 dated December 19, 2003 for additional guidance.

Response to Comment 2

In future filings, the Company will expand and revise the Management's Discussion and Analysis of Financial Condition and Results of Operations discussion in its periodic reports for each period presented to include further discussion and analysis of material items.

Comment 3**Other Material Commitments, page 24**

3. Please briefly explain to us supplementally, with a view toward future disclosure in the notes to the contractual obligations table, the material terms of the supply agreement with Mannesmann Rexroth.

Response to Comment 3

In 1999, the Company entered into a non-exclusive supply agreement with Bosch Rexroth, A.G., a German full-line hydraulic component and systems manufacturer, under which the Company will manufacture selected products carrying the Rexroth logo. In addition, the Company has a non-exclusive licensing agreement whereby Rexroth may manufacture some of the Company's products for use in its own fluid power systems. The licensing agreement will expire in 2010. Currently, Rexroth has elected not to manufacture any products under the licensing agreement, but continues to purchase these same products from the Company. The original amount received with regard to the licensing agreement was \$500,000, which is being recognized over the life of the agreement.

Comment 4**Critical Accounting Policies and Estimates, page 25**

4. We note your statement, "[t]he effect of material non-recurring events is provided for when they become known." We assume that you are referring to product liabilities. If this is correct, please state as such and disclose whether you have incurred material product liabilities in the past. Refer to Question 2 of SAB Topic 5:Y for guidance. Otherwise, please clarify what material non-recurring events you are referring and your historical experience with such events. Refer to Section 501.14 of the Financial Reporting Codification for guidance.

Response to Comment 4

You are correct that the Company is referring to product liabilities in the referenced section. We will revise the disclosure in future SEC filings to read as follows:

The effect of material non-recurring events related to product liabilities is provided for when they become known. The Company has not experienced any material product liabilities in the past.

Comment 5**2. Summary of Significant Accounting Policies, page 35****Accruals, page 36**

5. In future filings, please either name the third party administrator and insurance company you are relying on to estimate your health care benefit costs or remove your reference to such experts in your disclosures. We remind you that if you refer to experts in any filings under the 1933 Securities Act or filings that are incorporated by reference, you also must include their consent in the 1933 Securities Act filing. Refer to Section 436(b) of Regulation C for guidance.

Response to Comment 5

This will confirm that in future SEC filings, the Company will either elect to take full responsibility for valuing its health care benefit costs or, if the Company refers to an expert in any capacity, it will name the third party administrator and insurance company. The Company notes that if it incorporates by reference into any registration statement, a Form 10-Q or 10-K that identifies any such third party administrator and insurance company by name, it will include the consent of the third party administrator and insurance company as an exhibit to the registration statement.

Comment 6**13. Income Taxes, page 42**

6. We note your statement on page 43, “[t]he Company intends to indefinitely reinvest the earnings of its non-U.S. subsidiaries ... [a]ccordingly, no provision has been made for U.S. income taxes that might be payable upon repatriation of such earnings.” We also note that during fiscal year 2006 you repatriated \$5 million from your foreign subsidiaries. We further note that in July 2008 you repatriated \$6 million from Sun Germany. As such, it is unclear how you determined that you have sufficient evidence to demonstrate you have or will invest the undistributed earnings indefinitely. Please advise. Refer to paragraph 31.a. of SFAS 109, paragraph 12 of APB 23 and FSP SFAS 109-2 for guidance.

Response to Comment 6

Although the Company’s policy has been and continues to be to permanently reinvest earnings, Management monitors tax rates and foreign currency rates on a regular basis to determine the economic benefits of repatriating certain funds and the effect of such repatriation on the Company’s policy to permanently reinvest earnings of foreign subsidiaries in accordance with FAS 109 & APB 23.

In 2006, the Company chose to repatriate \$5 million to take advantage of favorable tax rates. In 2008, the Company chose to repatriate \$6 million to take advantage of favorable foreign currency exchange rates. In both cases, the US parent was not in need of cash from any subsidiaries for any purpose.

Based on management’s review, it was determined that these repatriations did not affect the Company’s current and continuing policy of permanently reinvesting profits of the foreign subsidiaries due to the transactions’ unique characteristics. These transactions allowed the Company to take advantage of specific economic conditions at the time. The Company plans to continue to permanently reinvest all profits of its non-U.S. subsidiaries.

Comment 7**Item 9A. Controls and Procedures page 51****Controls and Procedures, page 51**

7. In future filings, pursuant to Securities Exchange Act of 1934 Rule 13a-15(b) and 15d-15(b) please specify in the first paragraph that your management evaluates with the participation of your principal executive officer and principal financial officer the effectiveness of your disclosure controls and procedures.

Response to Comment 7

The Company's management was previously evaluating the Company's disclosure controls and procedures with the participation of the Chief Executive Officer and Chief Financial Officer prior to receipt of the Comment Letter. In future filings, the Company will specify in the first paragraph that management evaluates with the participation of the Chief Executive Officer and Chief Financial Officer the effectiveness of the Company's disclosure controls and procedures.

Comment 8

Internal Control Over Financial Reporting, page 51

8. In future filings, pursuant to Securities Exchange Act of 1934 Rule 13a-15(c) and 15d-15(c) please disclose: (a) that management evaluates with the participation of your principal executive officer and principal financial officer the effectiveness of your internal control over financial reporting and (b) that management with the participation of your principal executive officer and principal financial officer concludes whether or not your internal control over financial reporting is effective.

Response to Comment 8

The Company's management previously evaluated, with the participation of its Chief Executive Officer and Chief Financial Officer, the effectiveness of the Company's internal control over financial reporting and concluded that its internal control over financial reporting was effective prior to receipt of the Comment Letter. In future filings, the Company will disclose (a) that management evaluates, with the participation of the Chief Executive Officer and Chief Financial Officer the effectiveness of the Company's internal control over financial reporting and (b) the conclusion of management, with the participation of the Chief Executive Officer and Chief Financial Officer, as to whether or not the Company's internal control over financial reporting is effective.

Comment 9

Schedule 14A Filed on April 25, 2008

Governance of the Company, page 4

9. In future filings, please disclose how long each of your directors have served in this capacity.

Response to Comment 9

In future filings, the Company will disclose the length of service for all of its directors.

Comment 10

Code of Ethics, page 9

10. In future filings, please disclose whether your code of ethics applies to your principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions pursuant to Item 406 of Regulation S-K.

Response to Comment 10

The Company's code of ethics applies to all employees, including the Chief Executive Officer, Chief Financial Officer, and the person performing the functions of a controller. In future filings, the Company will add the additional disclosures.

Comment 11**Compensation Discussion & Analysis, page 13**

11. In future filings, please clarify whether you benchmark compensation against compensation of other companies. We note disclosure under "2007 Executive Compensation" suggesting that you do. If so, please identify these companies, and disclose where actual salary payments fall within targeted parameters. We note your disclosure that you consider ranges of salaries paid to executives of other manufacturing companies in setting salary. Please see Item 402(b)(2)(xiv) of Regulation S-K.

Response to Comment 11

In future filings, the Company will clarify whether and the manner in which the Compensation Committee benchmarks compensation against compensation of other companies and, if applicable, the names of such companies. Where targets are used, disclosure as to whether actual salary payments fall within targeted parameters will be made.

Comment 12

12. In future filings, please disclose the elements of individual performance you consider when deciding to increase or decrease the salaries of your executive officers pursuant to Item 402(b)(2)(vii) of Regulation S-K.

Response to Comment 12

In future filings, the Company will disclose the elements of individual performance it considers when deciding to increase or decrease the salaries of its executive officers.

Comment 13

13. In future filings, please elaborate on how the Committee establishes the monetary pool used for long-term compensation. We note disclosure that it varies with your performance; however, disclosure under "2007 Executive Compensation" suggests that the Committee considered only compensation surveys and the long term awards for the three prior years. Clarify how your performance is evaluated and how the amount in the pool is determined. Please also clarify what happens to the pool. We note that cash bonuses have been used infrequently, and that long-term compensation is generally awarded in the form of restricted shares of common stock. Lastly, please describe the elements of individual performance you consider when determining the amount of long-term incentives to award to your executive officers pursuant to Item 402(b)(2)(vii) of Regulation S-K.

Response to Comment 13

In future filings, the Company will elaborate on the manner in which the Compensation Committee establishes the amount of the monetary pool used for long-term compensation, its use of surveys and other compensation data, as well as internal compensation information. We will provide greater clarity as to how employee performance is evaluated and the elements of individual performance considered in determining the amount of long-term incentives to award to executive officers from the pool.

Comment 14

Summary Compensation, page 17

14. In future filings, please file Mr. Robson's employment agreement as an exhibit to the Form 10-K pursuant to Item 601(b)(10) of Regulation S-K.

Response to Comment 14

Mr. Robson's employment agreement will be included as an exhibit to the Company's future Form 10-K filings.

Comment 15

Form 10-Q for the Fiscal Quarter Ended March 29, 2008

15. We note that your DSO was 46 days as of March 29, 2008 compared to 38 days as of December 29, 2007. You state that this significant increase is due to an increase in international sales with customary longer payment terms. However, we note from your March 29, 2007 quarter analyst conference call that the increase was also due to a large number of orders being made in March. Please ensure you provide explanations for the changes in DSO for each period presented and that your explanation includes all material factors. Refer to Instructions 1 and 5 of paragraph 303(A) of Regulation S-K for guidance.

Response to Comment 15

In future filings the Company will provide explanations for the changes in DSO for each period presented and ensure that its explanations includes all material factors.

As a matter of supplemental information, the increase in DSO from 38 to 46 days for the period ended March 31, 2007, compared to the period ended March 29, 2008, resulted in part from increasing international demand, where customary payment terms are generally longer than with domestic customers. International sales made up approximately 57% of total sales for the period ended March 29, 2008, compared to 53% for the period ended March 31, 2007. Additionally, average weekly sales for March 2008 were approximately \$400,000 higher than average weekly sales for January and February 2008. These increased sales were primarily collected during the second quarter.

Sun Hydraulics acknowledges the following:

- *The Company is responsible for the adequacy and accuracy of the disclosure in its Commission filings;*
- *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.*

The Company believes that the foregoing responds fully to each of the questions in the Staff's November 3, 2008 Comment Letter. Please let us know if you have any questions about our responses.

Respectfully submitted,

Sun Hydraulics Corporation

By: /s/ Tricia L. Fulton

Tricia L. Fulton
Chief Financial Officer

Cc: Allen Carlson, Chief Executive Officer, Sun Hydraulics Corporation
Gregory C. Yadley, Esq., Shumaker, Loop & Kendrick, LLP
Dan Johnson, Shareholder, Kirkland, Russ, Murphy & Tapp, P.A.

Sun Hydraulics Corporation
1500 West University Parkway
Sarasota, FL 34243

November 6, 2008

Tracey Houser
Division of Corporation Finance
United States Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549-7010

Dear Ms. Houser,

I have received your letter dated November 3, 2008, which included comments on our Form 10K for the Fiscal Year Ended December 29, 2007, Schedule 14A Filed on April 25, 2008, and Forms 10Q for the Fiscal Quarters Ended March 29, 2008 and June 28, 2008. I have reviewed your comments and shared them with our finance team, corporate auditors, and legal counsel. We are in the process of formulating responses to your comments. We expect to have them to you and filed on EDGAR by December 12, 2008.

Sincerely,

/s/ Allen Carlson

Allen Carlson
Chief Executive Officer

Cc: Tricia L. Fulton, Chief Financial Officer, Sun Hydraulics Corporation
Dennis Tichio, Corporate Finance, Sun Hydraulics Corporation