

March 11, 2011

Brian Cascio
Accounting Branch Chief
United States Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Re: EMCORE Corporation
Form 10-K for the fiscal year ended September 30, 2010
Filed January 10, 2011
File No. 000-22175

Dear Mr. Cascio:

EMCORE Corporation (the "Company") respectively submits our remaining response to the comment letter dated January 28, 2011 that we received from the Staff of the United States Securities and Exchange Commission (the "Staff") regarding the Company's Annual Report on Form 10-K for the fiscal year ended September 30, 2010 (the "Form 10-K"). The Company's response below corresponds to the caption and number of the comment (which is reproduced below in italics). Unless otherwise indicated, capitalized terms used below have the meanings assigned to them in the Form 10-K.

Note 4. Equity, page 60

Warrants, page 63

9. *We refer to the 3,000,003 warrants you have outstanding as of September 30, 2010. We see your reference on page 65 that you account for 1,400,003 of the warrants as equity and your further reference on page 67 that you account for 1,600,000 of the warrants as a liability. Please tell us the material terms of the warrants you considered and how you have applied the guidance in FASB ASC 815 in evaluating whether the warrants should be classified as equity or liabilities. Please provide a separate analysis for the warrants issued related to the private placement of common stock and the warrants related to the equity line of credit facility.*

RESPONSE:

As of September 30, 2010 and December 31, 2010, the Company had 3,000,003 warrants outstanding.

Summary:

- On February 20, 2008, in conjunction with a private placement transaction, the Company issued 1,400,003 warrants representing the right to purchase up to an aggregate of 1,400,003 shares of the Company's common stock (the "2008 Warrants"). The Company originally accounted for the 2008 warrants as an equity transaction; however, management further considered the accounting after receipt of the SEC's letter and we have now concluded that the Company should have accounted for the 2008 warrants as a liability transaction because the 2008 warrants met the definition of a derivative instrument and did not qualify for equity classification. The Company intends to correct the error in its Quarterly Report on Form 10-Q for the quarter ended March 31, 2011 and has determined based on the quantitative and qualitative analysis discussed below that the error is not material.
- On October 1, 2009, the Company entered into an equity line of credit arrangement with Commerce Court Small Cap Value Fund, Ltd. wherein the Company issued three warrants representing the right to purchase up to an aggregate of 1,600,000 shares of the Company's common stock (the "2009 Warrants" and together with the 2008 Warrants, "the "2008 & 2009 Warrants"). As explained below, the Company accounted for the 2009 Warrants as a liability transaction because the 2009 Warrants met the definition of a derivative instrument and did not qualify for equity classification.

Material Terms of the Warrants:

2008 Warrants

- Each warrant grants the holder the right to purchase one share of the Company's common stock at an exercise price of \$15.06 per share. The warrants are immediately exercisable and expire on February 20, 2013.
- Net exercise: In lieu of exercising the warrants by payment of cash, the holder may, in its sole discretion, elect to receive the number of shares equal to the value of the warrants.
- Exercise limitations: The Company shall not effect the exercise of the warrants and the holders shall not have the right to exercise any portion of the warrants to the extent that, after giving effect to such issuance after exercise, the holder of the warrant would beneficially own in excess of 4.99% of the number of shares of the Company's common stock outstanding immediately after giving effect to such exercise.
- Call provision: At any time after February 19, 2010, the warrants may be called by the Company for a price of \$0.01 per underlying share if the closing price of its common stock has exceeded 150% of the exercise price for at least 20 trading days within a period of any 30 consecutive trading days and other certain conditions are met, such as a trade volume criterion and other equity conditions.
- Settlement: The warrant agreement permits the Company to settle in unregistered shares.
- Failure to timely deliver securities:

- If the Company fails for any reason to issue to the holder of the warrants within three trading days of receipt of the exercise delivery document, a certificate for the number of shares to which the holder is entitled and register such shares of the Company's common stock, the Company shall pay in cash to the holder on each day after such third business day that the issuance of such shares of common stock is not timely effected in an amount equal to 1.5% of the product of (a) the sum of the number of shares of common stock not issued to the holder on a timely basis and to which the holder is entitled and (b) the closing sales price of the shares of common stock on the trading day immediately preceding the last possible date which the Company could have issued such shares of common stock to the holder.
- In addition to the foregoing, if the Company fails for any reason to issue to the holder of the warrants within three trading days of receipt of the exercise delivery document, a certificate for the number of shares to which the holder is entitled and register such shares of the Company's common stock and the holder purchases (in an open market transaction or otherwise) shares of the Company's common stock to deliver in satisfaction of a sale by the holder of shares of common stock issuable upon such exercise that the holder anticipated receiving from the Company, then the Company shall, at the holder's request and in the holder's discretion, either (a) pay cash to the holder in an amount equal to the holder's total purchase price for the shares of common stock, or (b) promptly honor its obligation to deliver to the holder a certificate representing exercise shares and pay cash to the holder in an amount equal to the excess of any amounts owed.
- Adjustment of exercise price and shares: In the event of changes in the Company's outstanding common stock by reason of stock dividends, stock splits, recapitalizations, reclassifications, combinations or exchanges of shares, reorganizations, liquidations, consolidation, acquisition of the Company (whether through merger or acquisition of substantially all the assets or stock of the Company), or the like, the number, class and type of shares available under this warrant in the aggregate and the exercise price shall be correspondingly adjusted to give the holder of this warrant, on exercise for the same aggregate exercise price, the total number, class, and type of shares or other property as the holder would have owned had this warrant been exercised prior to the event and had the holder continued to hold such shares until the event requiring adjustment.
- Fundamental transactions: "Fundamental Transaction" means that the Company shall directly or indirectly, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another person, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company to another person, or (iii) allow another person to make a purchase, tender or exchange offer that is accepted by the holders of more than the 50% of either the outstanding shares of common stock (not including any shares of common stock held by the person or persons making or party to, or associated or affiliated with the persons making or party to, such purchase, tender or exchange offer), or (iv) consummate a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another person whereby such other person acquires more than the 50% of the outstanding shares of common stock (not including any shares of common stock held by the other person or other persons making or party to, or associated or affiliated with the other persons making or party to, such stock purchase agreement or other business combination), or (v) reorganize, recapitalize or reclassify its common stock, or (vi) any "person" or "group" (as these terms are used for purposes of Sections 13(d) and 14(d) of the Exchange Act), become the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of 50% of the aggregate ordinary voting power represented by issued and outstanding common stock.

§ In the event of any Fundamental Transaction other than a public stock transaction, at the request of the holder delivered at any time before the 90th day after such Fundamental Transaction, the Company (or the Successor Entity) shall purchase this warrant from the holder by paying to the holder, within five business days after such request (or, if later, on the effective date of the Fundamental Transaction), cash in an amount equal to the Black Scholes Value of the remaining unexercised portion of this warrant on the date of such Fundamental Transaction.

2009 Warrants

- The Company issued three warrants representing the right to purchase up to an aggregate of 1,600,000 shares of common stock, as follows:
 - a warrant, pursuant to which Commerce Court may purchase up to 666,667 shares of common stock at an exercise price of \$1.69 per share, and,
 - a warrant, pursuant to which Commerce Court may purchase up to 666,667 shares of common stock at an exercise price of \$2.02 per share, and,
 - a warrant, pursuant to which Commerce Court may purchase up to 266,666 shares of common stock at an exercise price of \$2.36 per share.

The warrants are immediately exercisable and expire on April 1, 2015.

- Transferability: The warrants may not be offered for sale, sold, transferred or assigned without our consent, in whole or in part, to any person other than an affiliate of Commerce Court.
- Net exercise: If at the time of exercise, the registration statement is not effective and a registration statement permitting the resale by the holder of the warrant shares is not effective, the holder may, in its sole discretion and in lieu of exercising the warrants by payment of cash, elect to receive the number of shares equal to the value of the warrants.
- Exercise limitations: The holder of these warrants shall not have the right to exercise any portion of the warrants, to the extent that after giving effect to such issuance after exercise, the holder of the warrants would beneficially own in excess of 9.9% of the number of shares of the Company's common stock outstanding immediately after giving effect to such exercise.
- Call provision: If after April 1, 2010, the Company's common stock trades at a price greater than 140% of the exercise price of any warrant for a period of 10 consecutive trading days and the Company meets certain equity conditions, then the Company has the right to effect a mandatory exercise of such warrant.
- Settlement: The warrant agreement requires the Company to settle in registered shares; provided, however, that the holder may elect to effect a cashless exercise in the event no registration statement for the shares issuable upon exercise of the warrants is effective.
- Failure to timely deliver securities.
 - If the Company fails, for any reason or for no reason, to use its best efforts to issue to the holder within three trading days after receipt of the applicable exercise notice, a certificate for the number of shares of common stock to which the holder is entitled and register such shares of common stock on the Company's share register, then, the Company shall pay in cash to the holder on each day after such third trading day that

the issuance of such shares of common stock is not timely effected an amount equal to 1.5% of the product of (a) the aggregate the number of shares of common stock not issued to the holder on a timely basis and to which the holder is entitled and (b) the closing sale price of the common stock on the trading day immediately preceding the last possible date which the Company could have issued such shares of common stock to the holder.

- In addition to the foregoing, if within three trading days after the Company's receipt of the applicable exercise notice, the Company fails to issue and deliver a certificate to the holder and register such shares of common stock on the Company's share register, and if on or after such third trading day the holder purchases (in an open market transaction or otherwise) shares of common stock to deliver in satisfaction of a sale by the holder of shares of common stock issuable upon such exercise that the holder anticipated receiving from the Company, then, the Company shall within three business days after the holder's request and in the holder's discretion, either (i) pay cash to the holder in an amount equal to the holder's total purchase price (including brokerage commissions, if any) for the shares of common stock so purchased, or (ii) promptly honor its obligation to deliver to the holder a certificate or certificates representing such shares of common stock and pay cash to the holder in an amount equal to the excess of any amounts owed.
- Adjustment of exercise price and shares: In the event of changes in the Company's outstanding common stock by reason of stock dividends, stock splits, recapitalizations, reclassifications, combinations or exchanges of shares, reorganizations, liquidations, consolidation, acquisition of the Company (whether through merger or acquisition of substantially all the assets or stock of the Company), or the like, the number, class and type of shares available under this warrant in the aggregate and the exercise price shall be correspondingly adjusted to give the holder of this warrant, on exercise for the same aggregate exercise price, the total number, class, and type of shares or other property as the holder would have owned had this warrant been exercised prior to the event and had the holder continued to hold such shares until the event requiring adjustment.
- Fundamental transactions: "Fundamental Transaction" means that (i) the Company shall, directly or indirectly, in one or more related transactions, (1) consolidate or merge with or into (whether or not the Company is the surviving corporation) another person, or (2) sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company to another person, or (3) allow another person to make a purchase, tender or exchange offer that is accepted by the holders of more than 50% of the outstanding shares of Common Stock (not including any shares of common stock held by the person or persons making or party to, or associated or affiliated with the persons making or party to, such purchase, tender or exchange offer), or (4) consummate a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another person whereby such other person acquires more than 50% of the outstanding shares of common stock (not including any shares of common stock held by the other person or other persons making or party to, or associated or affiliated with the other persons making or party to, such stock or share purchase agreement or other business combination), or (5) reorganize, recapitalize or reclassify its common stock, or (ii) any "person" or "group" (as these terms are used for purposes of Sections 13(d) and 14(d) of the 1934 Act) is or shall become the "beneficial owner" (as defined in Rule 13d-3 under the 1934 Act), directly or indirectly, of 50% of the aggregate ordinary voting power represented by issued and outstanding common stock.

§ In the event of a Fundamental Transaction, if (i) the Holder has not exercised the warrant in full prior to the consummation of such Fundamental Transaction, (ii) the Successor Entity has not agreed to assume the warrant and (iii) the Fundamental Transaction does not provide for the holder of the warrant to have the right to receive upon exercise of the warrant after consummation of the Fundamental Transaction such securities, cash, assets or other property which the warrant holder would have received upon consummation of the Fundamental Transaction had the warrant been exercised immediately prior to the Fundamental Transaction, then at the request of the holder delivered before the ninetieth day after the consummation of such Fundamental Transaction, the Company or the Successor Entity (as the case may be) shall purchase this warrant from the holder on the date of such request by paying to the holder cash in an amount equal to the Black Scholes Value of the unexercised portion of this warrant that remained on the date of the consummation of such Fundamental Transaction.

Accounting Analysis

Classification of warrants:

The Company has concluded that the 2008 & 2009 Warrants were not required to be classified as liabilities pursuant to the provisions of ASC 480, *Distinguishing Liabilities from Equity*. The Company does not have an unconditional obligation to redeem the warrants, the Company does not have an unconditional obligation to repurchase its shares, nor does the Company have an unconditional obligation to issue a variable number of shares under any circumstances.

We then considered whether the contract met the definition of a derivative and whether any of the scope exceptions to derivative accounting were applicable.

Derivative Analysis: (ASC 815-10)

The Company concluded that the 2008 & 2009 Warrants were within the scope of ASC 815-10 since all of the characteristics of a derivative instrument were met.

815-10-15-83(a), Underlying, notional amount, payment provision:

Both the 2008 & 2009 Warrants have an underlying and a notional amount.

815-10-15-83(b), Initial net investment:

Both the 2008 & 2009 Warrants do not require an initial net investment.

815-10-15-83(c), Net settlement:

Both the 2008 & 2009 Warrants provide for the delivery of a public exchange traded security (the Company's common shares) which is readily convertible to cash. The warrants may also be exercised in any increment.

An equity-linked freestanding financial instrument that meets the definition of a derivative instrument in ASC 815 is recognized as an asset or liability and measured at value through earnings, unless it qualifies for one of the ASC 815-10-15 scope exceptions.

Scope Exceptions (ASC 815-10-15)

The Company concluded that the 2008 & 2009 Warrants do not qualify for the equity classification scope exception in ASC 815-40-25-10 from derivative accounting for the following reasons:

- Both the 2008 & 2009 Warrants include a provision whereby the Company may be required to net-cash settle the warrants in circumstances where holders of the Company's common stock would not be entitled to cash, which is inconsistent with ASC 815-40-55-2 through 55-6. The warrant agreements include a fundamental transaction clause whereby, in the unlikely event that another person becomes the beneficial owner of 50% of the outstanding shares of the Company's common stock, and if other conditions are met, the Company may be required to purchase the warrants from the holders by paying cash in an amount equal to the Black Scholes value of the remaining unexercised portion of the warrants on the date of such fundamental transaction. Receipt of cash, from the warrant holder's perspective, is not contractually limited to circumstances in which the underlying shareholders would also receive cash. A change of control is not within the Company's control and the net cash settlement to the warrant holders would represent an additional form of consideration that may not be available to holders of the Company's common stock.
- Settlement is required in registered shares for the 2009 Warrants (provided that the warrant holder does not elect to receive shares in a cashless exercise at a time when no registration statement for the shares is effective) and the rights of the warrant holder rank higher than shareholder rights for both the 2008 & 2009 Warrants.
- The 2008 & 2009 Warrants also do not represent:
 - a) Contracts between an acquirer and a seller to enter into a business combination (ASC 815-10-15-74 (c1)).
 - b) Contracts to enter into an acquisition by a not-for-profit entity (ASC 815-10-15-74 (c2)).
 - c) Contracts between one or more not-for-profit entities to enter into a merger of not-for-profit entities (ASC 815-10-15-74 (c3)).
 - d) Forward contracts that require settlement by the reporting entity's delivery of cash in exchange for the acquisition of a fixed number of its equity shares (ASC 815-10-15-74 (d)).
 - e) The Company concluded that the 2008 & 2009 Warrants were not within the scope of ASC 505, *Equity-Based Payments to Non-Employees* or ASC 718, *Compensation – Stock Compensation*.

Conclusion

The 2008 & 2009 Warrants should both be classified as a liability on the Company's consolidated balance sheet since the warrants met the definition of a derivative instrument and did not qualify for equity classification.

Correction of an error

The Company concluded that an error in recognition, measurement, presentation, and disclosure has occurred from a misapplication of U.S. GAAP related to the accounting of the 2008 Warrants. Instead of accounting for the issuance of the 2008 Warrants as an equity transaction, the Company should have accounted for the 2008 Warrants as a liability transaction since these warrants met the definition of a derivative instrument and did not qualify for equity classification. The Company's valuation of the 2008 Warrants based on a Monte Carlo Option Pricing Model resulted in a valuation of approximately \$8.2 million, \$1.8 million, \$0.4 million, \$0.1 million, and \$0.2 million as of February 20, 2008, September 30, 2008, September 30, 2009, September 30, 2010 and December 31, 2010, respectively.

The Company considered the impact of correcting the misstatements related to the 2008 Warrants and also all other known misstatements, including both the carryover reversing effects of prior year misstatements, on the Company's historical consolidated financial statements as described in ASC 250.

The Company concluded that from both a quantitative and qualitative analysis, a reader of the Company's consolidated financial statements would not find the unrecorded differences to be beneficial or material to their understanding of the Company's business, financial condition, results of operations, or cash flows as the adjustments are cash and non-operating related and based on estimates, nor should the unrecorded adjustments affect an investor's expectations about future performance of the Company any period presented since February 20, 2008, the quarter ending March 31, 2011, or the fiscal year ending September 30, 2011.

In the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2011, management will adjust common stock and accumulated deficit by approximately \$8.2 million and \$8.0 million, respectively, and record the liability related to the fair value of the warrants as of January 1, 2011 of approximately \$0.2 million to correct the initial accounting treatment of the 2008 Warrants from equity to liability accounting as an out-of-period adjustment. In future periods, the Company will record adjustments to fair value the warrant liability and record the change in fair value of the financial instruments in our consolidated statements of operations at the end of each quarterly reporting period through February 13, 2013 (the expiration date) or earlier upon exercise or cancellation of the 2008 Warrants. The Company will also revise the disclosure related to the accounting for the 2008 Warrants in future filings to reflect the corrected accounting treatment being applied.

* * * *

In connection with responding to your comment and with this submission, we hereby acknowledge 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 law of the United States.

We believe the response above fully address the comment contained in your letter. Please call me at (505) 559.2810 if you have any questions regarding the above response.

Sincerely,

/s/ Mark Weinswig

Mark Weinswig
Chief Financial Officer
EMCORE Corporation