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File No. 029637-0010

November 2, 2006

Max A. Webb
Assistant Director
Division of Corporation Finance
Securities and Exchange Commission
100 F Street, N.E., Mail Stop 3561
Washington, D.C. 20549

**Re: AeroVironment, Inc.
Registration Statement on Form S-1
Filed September 28, 2006
File No. 333-137658**

Dear Mr. Webb:

We are in receipt of the Staff's letter dated October 25, 2006 with respect to the above-referenced Registration Statement. We are responding to the Staff's comments on behalf of AeroVironment, Inc. ("*AeroVironment*" or the "*Company*") as set forth below. Simultaneously with the filing of this letter, AeroVironment is submitting (by EDGAR) Amendment No. 1 to its Registration Statement on Form S-1 (the "*Amendment*"), responding to the Staff's comments. Courtesy copies of this letter and the Amendment (specifically marked to show the changes thereto) are being submitted to the Staff by hand delivery.

AeroVironment's responses set forth in this letter are numbered to correspond to the numbered comments in the Staff's letter. All terms used but not defined herein have the meanings assigned to such terms in the Amendment. For ease of reference, we have set forth the Staff's comments and AeroVironment's response for each item below.

Prospectus

General

- Please provide us with any artwork that you intend to use. The inside front cover artwork should be clear illustrations of your product or business with concise language describing the illustrations. Artwork that does not convey the business purpose and language that strays beyond a limited scope will not be appropriate inside the front cover. Please refer to Section VIII of the Division of Corporation Finance March 31, 2001 Current Issues and Rulemaking Projects Quarterly Update available at www.sec.gov.*
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AeroVironment Response: AeroVironment respectfully advises the Staff that the artwork is currently in development and could not be included in the Amendment. AeroVironment will include the artwork in the next amendment and provide it to the Staff prior to that time if it becomes available. It is contemplated that the artwork will consist of illustrations and short descriptions of the Company's products.

2. *Please revise your statement on page i that "[t]he information contained in this prospectus is current only as of its date" to clarify that the date to which you refer is the date of the prospectus.*

AeroVironment Response: AeroVironment has revised the disclosure on page i of the Amendment in accordance with the Staff's comment.

3. *In numerous places in the prospectus, you indicate your belief regarding some aspect of your UAS or PosiCharge products. Please provide us with the basis for these beliefs, examples of which include:*

- *On page 51: Your UAS and PosiCharge products "provide unique capabilities that had not previously existed," "perform reliably and affordably," and have "high efficiency... relative to previous available alternatives."*
- *On page 52: "[F]or the fiscal year ended April 30, 2006, sales of our small UAS accounted for a significant majority of the U.S. military's small UAS purchases."*
- *On page 52: Your work to develop certain battery charging algorithms "contributed to the major battery manufacturers offering battery warranties for fast charge."*

AeroVironment Response: In response to the Staff's comment, AeroVironment has provided, as Annex A to this letter, material supporting the statements of belief contained in the Amendment regarding its UAS and PosiCharge products.

4. *In numerous places in the prospectus, you compare your PosiCharge product to others in your industry. Please provide us with the basis for such comparisons and, if available to you and not already included, include in the prospectus a comparison with other fast charge competitors like those listed on page 8. Examples of your statements include:*

- *On pages 2 and 48: "PosiCharge is able to recharge a typical electric industrial vehicle battery and return it to service up to 16 times faster than conventional charging methods."*
 - *On page 52: "PosiCharge can reduce the amount of electricity required to support electric industrial vehicles by several hundred dollars per year per vehicle as compared to conventional battery chargers."*
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- On page 52: “[O]ther fast charge and conventional charge systems, which lack our current and voltage regulating tailored charge algorithms and monitoring capabilities, may actually contribute to lower battery performance and lifespan over time, ultimately resulting in higher battery costs and degraded vehicle performance.”
- On page 52: “PosiCharge customers typically begin to realize cost savings when compared to battery charging within the first twelve months of operation.”
- On page 56: PosiCharge DVS “is designed to deliver lower up-front installation and ongoing utility costs when compared to other single vehicle fast chargers.”
- On page 56: PosiCharge MVS “is designed to deliver greater cost-savings as the number of vehicles simultaneously charged increases, as compared to competitive charging systems, which are currently capable of charging only up to eight vehicles at the same time.”

AeroVironment Response: In response to the Staff’s comment, AeroVironment has provided, as **Annex B** to this letter, material supporting the statements contained in the Amendment comparing its PosiCharge product to others in the industry. In addition, AeroVironment respectfully advises the Staff that it does not have available data providing direct comparisons of its PosiCharge products to the fast charge products of its competitors to include in the Amendment.

5. We note the dealer prospectus delivery obligation language you include on page i of the prospectus. Please also include this language on the outside back cover page of the prospectus. Refer to Item 502(b) of Regulation S-K.

AeroVironment Response: AeroVironment has added the legend to the outside back cover page of the prospectus which is contained in the Amendment, in accordance with the Staff’s comment.

Prospectus Summary

Overview, page 1

6. Please explain here what you mean by “funded backlog” and “unfunded backlog” in the last paragraph of this section.

AeroVironment Response: AeroVironment has revised the disclosure on page 2 of the Amendment in accordance with the Staff’s comment.

7. Revise the last sentence of the first paragraph to give the growth rate for each of the three years, not the compound rate.

AeroVironment Response: AeroVironment has revised the disclosure on pages 1 and 50 of the Amendment to include the annual growth rate for the period from April 30, 2004 to April 30, 2005 and for the period from April 30, 2005 to April 30, 2006. AeroVironment believes that additionally disclosing its compound annual growth rate for the aggregate of these periods provides prospective investors with a better understanding of its performance.

8. *Revise the first sentence of the second paragraph to eliminate the capital letters in global war on terror.*

AeroVironment Response: AeroVironment has revised the disclosure on pages 1, 50, 52 and 53 of the Amendment in accordance with the Staff's comment.

Summary Consolidated Financial Data, page 5

9. *We refer you to footnote 1 concerning the stock split to be reflected in your pro forma earnings per share. Please clarify whether the stock split will occur prior or subsequent to the effectiveness of your Form S-1 registration statements. If prior to effectiveness, SAB Topic 4C requires that stock splits effected after the date of the latest balance sheet presented, but before the effective date of the registration statement, be retroactively reflected, with disclosure, in the financial statements for all periods presented. Please advise or revise as appropriate.*

AeroVironment Response: AeroVironment has revised the disclosure on pages 5, 6, 33 and 34 of the Amendment in accordance with the Staff's comment.

Risk Factors

General

10. *Please consider a risk factor about growing congestion in battlefield skies and how this could limit the use of UAS vehicles. Describe any accidents that have occurred involving UAS vehicles. See Too many drones in Army's future? Tight airspace may force cuts in UAV programs, dated July 10, 2006, in Army Times.*

AeroVironment Response: AeroVironment has added a new risk factor on page 14 of the Amendment in response to the Staff's comment.

11. *Please consider a risk factor about the "forward operating depot" you maintain in Iraq to support your UAS fleet used by the U.S. military, as referenced at the top of page 52. Include the number of company employees and the potential harmful results to the company and its employees should it be attacked or destroyed. As part of this risk factor, include instructors or other support personnel that you have stationed abroad generally, as referenced on page 55.*

AeroVironment Response: AeroVironment has revised the disclosure on page 16 of the Amendment in response to the Staff's comment. In addition, AeroVironment notes that all inventory and equipment located at this forward operating depot is property of the U.S. government, which bears the risk of loss in the event that this equipment is damaged or destroyed.

12. *Consider adding a risk factor that any winding down of the war in Iraq might adversely affect your sales.*

AeroVironment Response: AeroVironment has revised the disclosure on page 8 of the Amendment in response to the Staff's comment.

We rely heavily on sales to the U.S. government, page 7

13. *You indicate that governmental agencies could exercise their rights to terminate contracts at-will. Please revise to indicate whether all or substantially all of your government contracts are terminable at will.*

AeroVironment Response: AeroVironment has revised the disclosure on page 7 of the Amendment in accordance with the Staff's comment.

If critical components of our products that we currently purchase, page 9

14. *Name your sole suppliers of critical components here or in the Business section and cross-reference the site here.*

AeroVironment Response: AeroVironment has revised the disclosure on pages 10 and 63 of the Amendment in accordance with the Staff's comment.

Our earnings and profit margins may decrease, page 12

15. *We note that you define fixed-price and cost-plus-fee contracts in the risk factor on page 13 entitled, "Cost overruns on our contracts could subject us to losses..." Please define these terms in this risk factor instead or switch the order in which these risk factors appear.*

AeroVironment Response: AeroVironment has revised the disclosure on page 12 of the Amendment in accordance with the Staff's comment.

16. *In addition, please revise to indicate whether "development work" references research and development work.*

AeroVironment Response: AeroVironment has revised the disclosure on page 12 of the Amendment in accordance with the Staff's comment.

Our business could be adversely affected by a negative audit, page 19

17. *You indicate here and on page 61 that you are currently being audited by the Defense Contract Management Agency ("DCMA") and that DCMA has "identified certain corrective actions to be taken with respect to our current system, which we are in the process of implementing." On page 61, you identify the system under audit as the system "for the care, control and accountability of government property." Please so identify the system in this risk factor, as well. In addition, please summarize material corrective actions which DCMA has identified, if practicable. For example, if the need for certificates of authorization for certain flight tests of UAS outside military installations,*

which you discuss on the bottom of page 10, was identified as part of this audit, please so indicate.

AeroVironment Response: AeroVironment has revised the disclosure on pages 19, 20 and 65 of the Amendment in accordance with the Staff's comment. AeroVironment respectfully advises the Staff that because implementation of the corrective measures identified by the DCMA has not had a material impact on its business, financial condition or results of operations, it believes that a summary of the corrective actions taken is not necessary.

Our management, whose interest may not be aligned with yours, page 22

18. *We note the disclosure on page 22 indicating that the Company's executive officers and their affiliates collectively own 80.7% of the Company's outstanding shares of common stock. We also note that they currently control the vote on all matters requiring stockholder approval, including the election of directors and will continue to do so following completion of the offering. Please revise the notes to the Company's financial statements to disclose the existence of this control relationship. Refer to the disclosure requirements outlined in paragraph 2 of SFAS No. 57.*

AeroVironment Response: AeroVironment respectfully disagrees with the Staff's analysis of the requirements of SFAS No. 57. Paragraph 2 of SFAS No. 57 states that "[f]inancial statements shall include disclosures of material related party transactions. . . ." As ownership of the Company's outstanding shares of common stock is not a "transaction," the Company does not believe that disclosure of common stock ownership should be included in the Related Party Transactions footnote to the Company's financial statements. In addition, the Company notes that, as the definition of what constitutes "ownership" is different for purposes of the financial statements than it is for purposes of calculating the percentages for the Company's principal stockholders in the Registration Statement, inclusion of this information in the notes to the financial statements could be confusing to investors. Also, as noted in the Company's response to the Staff's Comment No. 45, the Company has revised the disclosure on page F-21 to disclose the significant terms of the voting agreement with certain stockholders of the Company.

Special Note Regarding Forward-Looking Statements, page 26

19. *We note your statement in the last paragraph of this section that you cannot guarantee the accuracy or completeness of "statistical and other industry data generated by independent parties." A disclaimer of liability for material information provided by the issuer is not appropriate. Please revise to remove the language noted above. Alternately, revise to say that you believe and act as if they are accurate.*

AeroVironment Response: AeroVironment has revised the disclosure on page 27 of the Amendment in accordance with the Staff's comment.

Use of Proceeds, page 27

20. *Please quantify the various uses of proceeds, if practicable.*

AeroVironment Response: AeroVironment respectfully advises the Staff that it has not yet determined the allocation of the proceeds among the proposed uses and that consequently it is not able to quantify the various potential uses at this time.

Dividend Policy, page 27

21. *We note the disclosure on page 27 indicating that the Company's debt agreements restrict the Company from paying any dividends to its stockholders. Please revise the notes to the Company's financial statements to disclose the nature and terms of the restrictions imposed on the Company's ability to pay dividends by the terms of its debt arrangements. Refer to the requirements outlined in Rule 4-08(e) of Regulation S-X.*

AeroVironment Response: AeroVironment has revised the disclosure on page F-31 of the Amendment in accordance with the Staff's comment. AeroVironment notes that the credit agreement referred to on page F-31 prohibits it from paying any dividends to its stockholders, except in certain cases which do not apply to AeroVironment.

Capitalization, page 28

22. *We note from the disclosure in the paragraph preceding your capitalization table on page 28 that "as adjusted" capitalization gives effect to the exercise of outstanding options by certain selling shareholders in the offering. If the exercise of these options will result in a material reduction of earnings applicable to common shareholders (excluding the effects of the offering), please revise to disclose pro forma earnings per share for the latest fiscal year and subsequent interim period presented giving effect to the conversion, but not to the offering. This pro forma presentation should be included on the face of your statements of operations for the latest fiscal year and subsequent interim period presented and should also be disclosed in your Summary Consolidated Financial Data. Refer to the guidance outlined in Topic Three, Section IV.C. 3. of the Division of Corporation Finance Staff Training Manual.*

AeroVironment Response: AeroVironment respectfully advises the Staff that the determination of the number of options that are to be exercised by certain selling stockholders in the offering has not been determined. When that determination is made, the Company will revise the disclosure in the Amendment in accordance with the Staff's comment if the exercise will result in a material reduction of the earnings applicable to common stockholders.

Selected Consolidated Financial Data, page 32

23. *Please disclose the nature of any matters that impact the comparability of your selected financial data for the periods presented. Refer to the guidance outlined in Instruction 2 to Item 301 of Regulation S-K.*

AeroVironment Response: AeroVironment has revised the disclosure on pages 33 and 34 of the Amendment in accordance with the Staff's comment. AeroVironment is aware of no other matters, including accounting changes, business combinations, dispositions of business operations, or other transactions, that materially affect the comparability of the information reflected in its selected financial data. AeroVironment is also not aware of any additional items or

material uncertainties which it believes would enhance the understanding of or would highlight other trends in its financial condition and results of operations.

Management's Discussion and Analysis, page 34

24. *Please expand your MD&A to identify and discuss key performance indicators that management uses to manage the business and that would be material to investors, and to provide information about the quality of, and potential variability of, the Company's earnings and cash flows, so that investors can ascertain the likelihood that past performance is indicative of future performance. Refer to SEC Release No. 33-8350.*

AeroVironment Response: AeroVironment respectfully advises the Staff that the key performance indicators that its management considers in evaluating its business include revenue, cost of sales, gross margin, research and development expenses, backlog and selling, general and administrative expenses. In response to the Staff's comment, AeroVironment has provided additional disclosure regarding each of these performance indicators and how AeroVironment views its business on pages 35, 36 and 37.

Supplemental Executive Retirement Plan Obligation, page 36

25. *We note the disclosure indicating that accruals due to Dr. MacCready under the Supplemental Executive Retirement Plan will be reversed in connection with the Company's planned public offering. As Dr. MacCready is one of the Company's principal shareholders, it appears the reversal of this obligation should be accounted for as a capital contribution in the Company's financial statements. Please revise to explain your planned accounting treatment for the reversal of this obligation and the relevant technical accounting literature that supports your planned treatment.*

AeroVironment Response: AeroVironment has revised the disclosure on page 39 of the Amendment in accordance with the Staff's comment. The Supplemental Executive Retirement Plan (the "**SERP**") was designed to provide retirement benefits for Dr. MacCready based upon the assumption that no initial public offering of the Company was likely to occur. However, upon a successful initial public offering, the SERP would be canceled. Unless and until the Company's initial public offering is completed, the Company believes that the most accurate estimate of the liability associated with the SERP is the net present value of the expected payment stream. Upon the occurrence of the initial public offering or other liquidity event, the most accurate estimate of the liability associated with the SERP will be zero. The Company therefore views this reversal as a change in an accounting estimate that is consistent with the application of Statement of Financial Accounting Standards No. 154, *Accounting Changes and Error Corrections*, paragraph 19.

Liquidity and Capital Resources, page 42

26. *Revise to describe reasons for material changes in cash flows from operating, investing, and financing activities from period to period. We note that your disclosures are merely a reiteration of the cash flow statement. The liquidity discussion should focus on the reasons for the changes in assets and liabilities and the need for purchases of property and equipment, treasury stock, investments, acquisitions, etc.*
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AeroVironment Response: AeroVironment has revised the disclosure on pages 45, 46 and 47 of the Amendment in accordance with the Staff's comment.

Overview, page 47

27. Please better explain what "grid-tied" means with reference to *Architectural Wind*.

AeroVironment Response: AeroVironment has revised the disclosure on page 51 of the Amendment in accordance with the Staff's comment.

Small UAS, page 48

28. Please clarify here that *Global Hawk* and *Predator* referenced at the top of page 49 are not manufactured by you.

AeroVironment Response: AeroVironment has revised the disclosure on page 52 of the Amendment in accordance with the Staff's comment.

29. Please indicate to what extent commercial applications for UAS, such as those that you mention in the last paragraph of this section, have already developed. If most have not yet developed, please explain why not.

AeroVironment Response: AeroVironment has revised the disclosure on page 53 of the Amendment in accordance with the Staff's comment.

PosiCharge Fast Charge Systems, page 50

30. Please define what you mean by logistics in a business setting, as referenced on page 51.

AeroVironment Response: AeroVironment has revised the disclosure on page 54 of the Amendment in accordance with the Staff's comment.

Small UAS, page 51

31. You indicate that your five types of small UAS vehicles, with the exception of *Dragon Eye*, share a "common ground control unit." Does this mean that their ground control units are the same?

AeroVironment Response: Yes. The same ground control unit is used to operate all of the Company's small UAS, with the exception of *Dragon Eye*.

32. In addition, how does the need for landing space comport with the use of these vehicles in urban environments? Please describe any other challenges to use of UAS vehicles in urban environments. For example, see *Army finds Raven UAVs unsuitable for Baghdad use*, dated September 6, 2005, in *Aerospace Daily & Defense Report*.

AeroVironment Response: Given the ability of system operators to maintain line of sight communications between the transceiver and the aircraft, which can be accomplished by mounting the transceiver on a high location such as a rooftop, AeroVironment believes that UAS vehicles are

valuable tools in urban environments and will continue to be used extensively in such settings. Regarding the need for landing space, the Company notes that *Raven* and *Puma* can land nearly vertically through a controlled stall, enabling either vehicle to land on a rooftop or small clearing. With respect to the risks presented by air traffic congestion in urban environments, AeroVironment has provided additional disclosure on page 14 of the Amendment. The Company's small UAS, including *Raven* and *Dragon Eye*, are being used extensively in both urban and rural environments in support of Operation Iraqi Freedom and Operation Enduring Freedom.

33. *Revise the last sentence of this section to replace the compound annual growth rate with the growth rate for each of the three years. Make a similar change in the last sentence of the next section.*

AeroVironment Response: AeroVironment has revised the disclosure on page 55 of the Amendment to include the annual growth rate for the period from April 30, 2004 to April 30, 2005 and for the period from April 30, 2005 to April 30, 2006. AeroVironment believes that additionally disclosing its compound annual growth rate for the aggregate of these periods provides prospective investors with a better understanding of its performance.

PosiCharge Fast Charge Systems, page 52

34. *You indicate that PosiCharge was developed from your "innovative" work on electrical and hybrid vehicles and battery systems in the 1990s. Either revise to eliminate this adjective or detail how your work was innovative.*

AeroVironment Response: AeroVironment has revised the disclosure on page 55 of the Amendment in accordance with the Staff's comment.

Technology and Research and Development, page 53

35. *Please describe the makeup of and selection process for the intellectual property and commercialization committee you mention in the third paragraph on page 54. Is this a committee of the board of directors, management, or other employees?*

AeroVironment Response: AeroVironment has revised the disclosure on page 57 of the Amendment in accordance with the Staff's comment.

36. *Please indicate why you often choose to protect your intellectual property "through trade secrets as opposed to publication," as referenced in the fourth paragraph on page 54.*

AeroVironment Response: AeroVironment has revised the disclosure on page 58 of the Amendment in accordance with the Staff's comment.

Products and Services, page 54

37. *We note the disclosure on page 54 indicating that the Company provides system solutions that typically include hardware, software, training, service, spare parts, and ongoing support. We also note from the disclosure on page F-10 that the substantial majority of the Company's revenue is generated pursuant to written contractual arrangements to design,*

develop, manufacture, and/or modify complex products, and to provide related engineering, technical and other services according to the specification of the customers. We further note that these arrangements are accounted for pursuant to SOP 81-1. Please tell us and clarify in your accounting policy disclosures whether any of your sales arrangements provide for multiple deliverables that must be accounted for in accordance with the guidance outlined in EITF 00-21. If so, please tell us and expand your disclosure to explain how you consider the guidance outlined in EITF 00-21 in accounting for these arrangements.

AeroVironment Response: AeroVironment has revised the disclosure on pages 38 and F-10 of the Amendment in accordance with the Staff's comment. AeroVironment considers all contracts for treatment in accordance with Financial Accounting Standards Board Emerging Issues Task Force No. 00-21, "Revenue Arrangements with Multiple Deliverables" ("EITF 00-21"). EITF 00-21 provides for deferral to higher authoritative guidance, including American Institute of Certified Public Accountants Statement of Position 81-1, *Accounting for Performance of Construction-Type and Certain Production-Type Contracts* ("SOP 81-1"), under which the majority of AeroVironment's contracts are properly accounted for. Contracts which provide for multiple deliverables to which SOP 81-1 does not apply are accounted for in accordance with the provisions of EITF No. 00-21.

Small UAS, page 55

38. *Please include the size of the fleet for each vehicle and each of its primary customers.*

AeroVironment Response: AeroVironment respectfully requests that it not be required to provide disclosure regarding the size of the fleet for each vehicle for each of its primary customers. Certain of the Company's vehicles are in the evaluation stage with its customers. Making the number of such vehicles that have been supplied to these customers publicly available would alert AeroVironment's competitors as to the stage of the evaluation process to which these programs had progressed. Such knowledge would provide its competitors, who AeroVironment believes to be actively attempting to sell their products to the same customers, with competitively sensitive information that could be used by them to target their marketing efforts to the Company's disadvantage, thereby damaging AeroVironment's prospects for successful program acquisition.

Further, AeroVironment has limited awareness of how its vehicles are deployed once they are shipped to its customers and is unable to ascertain how many of the vehicles it has supplied to a customer are being actively deployed at any given time as opposed to being retained for training or inventory purposes. Moreover, due to the national security implications of their operations, AeroVironment does not believe that its Department of Defense customers would be willing to provide it with such information, or if it were willing to provide such information to AeroVironment, that it would be willing for AeroVironment to make such information publicly available.

Contract Engineering Services, page 57

39. *Please indicate why you are not seeking to grow this service offering at this time.*

AeroVironment Response: AeroVironment has revised the disclosure on page 60 of the Amendment in accordance with the Staff's comment.

UAS Manufacturing and Operations, Page 59

40. Please define ISO and "ISO 9001: 2000" referenced on the top of page 60.

AeroVironment Response: AeroVironment has revised the disclosure on page 63 of the Amendment in accordance with the Staff's comment.

Competition, page 60

41. Your list of UAS competitors here differs somewhat from that provided on page 8. For example, you include Northrop Grumman Corporation as a competitor on page 8 but state here that its Global Hawk is not viewed by you as direct competition. Please revise to make your disclosure consistent.

AeroVironment Response: AeroVironment has revised the disclosure on page 8 of the Amendment in accordance with the Staff's comment.

Regulation, page 61

42. Please revise to elaborate on the corrective actions identified by the DCMA. Include any financial statement impact including costs of implementation in your disclosure.

AeroVironment Response: AeroVironment has revised the disclosure on page 65 of the Amendment in accordance with the Staff's comment. AeroVironment respectfully advises the Staff that because implementation of the corrective measures identified by the DCMA has not had a material impact on its business, financial condition or results of operations, it believes that a summary of the corrective actions taken is not necessary.

Bidding Process, page 62

43. You state in the third paragraph that you are the "sole provider under the only two programs of record established by the DoD for small UAS, a 2006 U.S. Army/SOCOM contract for Raven and a 2003 U.S. Marine Corps contract for Dragon Eye." Please provide additional background and context for these contracts so investors can better assess their significance. For example, how big are the contracts in dollars and in number of vehicles delivered, and for what length of time are the contracts?

AeroVironment Response: AeroVironment has revised the disclosure on pages 66 and 67 of the Amendment in accordance with the Staff's comment.

44. In addition, if these were the only two such UAS programs, how did you come to supply the U.S. Navy, as identified in the chart on page 55, which is not one of the customers under the two contracts? How did you come to supply customers with the Swift, the Wasp, and the Puma, as identified in that same chart, which are not vehicles you supplied under the two contracts? Furthermore, how did you come to be the sole provider of Ravens to the U.S. Army in 2004, which you highlight in the second paragraph, two years before your contract with the Army under one of the two "programs of record"? In addition, you also identify these contracts on page 47 as the only "competitively bid U.S. military small UAS

programs of record as of July 29, 2006." Were these the only two such programs of any kind or the only two competitive programs? Please revise to clarify your disclosure or advise.

AeroVironment Response: AeroVironment has revised the disclosure on pages 66 and 67 of the Amendment in accordance with the Staff's comment in order to provide greater clarity with regards to the various types of contracts it has entered into with the U.S. government and how these contracts are funded.

Transactions with Officers and Directors, page 77

45. *Revise the notes to the financial statements to disclose the significant terms of the voting agreement with certain principle shareholders of the Company. Refer to the requirements outlined in paragraph 2 of SFAS No. 57.*

AeroVironment Response: AeroVironment has revised the disclosure on page F-21 of the Amendment in accordance with the Staff's comment.

Principal and selling stockholders, page 78

46. *By footnote or otherwise, please identify the natural persons with voting or investment control over the Taylor Family Trust. Refer to Interpretation 1.60 of Telephone Interpretation Manual (July 1997).*

AeroVironment Response: AeroVironment has revised the disclosure on page 83 of the Amendment in accordance with the Staff's comment.

Common Stock, page 80

47. *The last sentence of the first paragraph of this section, which says that all shares now outstanding and to be outstanding upon completion of this offering are fully paid and non-assessable, is a legal conclusion which you are not qualified to make. Either delete the sentence or attribute it to a law firm and file a consent in the next amendment.*

AeroVironment Response: AeroVironment has revised the disclosure on page 84 of the Amendment in accordance with the Staff's comment.

Underwriting, page 86

48. *Please expand this section to disclose that the selling shareholders may be deemed to be underwriters with respect to the shares they are offering for resale.*

AeroVironment Response: AeroVironment has revised the disclosure on page 90 of the Amendment in accordance with the Staff's comment.

April 30, 2006 Financial Statements, page F-1

Consolidated Statements of Income, page F-4

49. *We note from pages 34 and F-9 that you classify the gains and losses from sales and disposals of assets as a component of other income (expenses), net. Please revise to reflect these amounts as components of operating income or explain why you do not believe this is required. Refer to the guidance outlined in paragraphs 25 and 45 of SFAS No. 144 and footnote 68 to SAB Topic 13.*

AeroVironment Response: AeroVironment has revised the disclosure on pages 5, 33, 37, 41, F-4, F-23 and F-27 of the Amendment in accordance with the Staff's comment. The Company has reclassified gains and losses from sales and disposals of assets from other income to SG&A.

50. *We note from the disclosure on page 34 that you include interest income and expense in "other income and expense." Please revise to provide separate disclosure of interest expense in your consolidated statements of operations. Refer to the requirements outlined in Rule 5-03(8) of Regulation S-X.*

AeroVironment Response: AeroVironment has revised the disclosure on pages 5, 33, 37, 41, F-4, F-23 and F-27 of the Amendment in accordance with the Staff's comment.

Consolidated Statements of Shareholders' Equity, page F-5

51. *We note that you have repurchases of common shares, however, have no treasury stock presented. Please tell us and revise to disclose your accounting policies with regard to these repurchased shares including any plans authorizing the repurchases, any stock retired, and any stock held and how the value was determined. Also, please tell us and clarify in your financial statements whether any compensation expense was required to be recognized in connection with share repurchases. If not, please explain why.*

AeroVironment Response: AeroVironment has revised the disclosure on pages F-11 and F-12 of the Amendment in accordance with the Staff's comment. Regarding treasury stock, as a California corporation, the Company accounts for repurchased shares according to California Corporations Code Section 510, which states: "When a corporation reacquires its own shares, those shares are restored to the status of authorized but unissued shares, unless the articles prohibit the reissuance thereof." The Company's articles do not prohibit such reissuance.

Research and Development, page F-11

52. *Revise to disclose the related costs of sales associated with customer funded research and development for the periods presented in your financial statements.*

AeroVironment Response: AeroVironment has revised the disclosure on page F-12 of the Amendment in accordance with the Staff's comment.

Note 2. Inventories, net, page F-14

53. *From the schedule on page F-24, the balance of inventory reserves increased significantly in fiscal 2005. Please tell us and explain in MD&A and the notes to your financial statements the facts or circumstances responsible for the increase in inventory reserves during 2005. Also, please provide us with further details on any write-downs or impairments taken and the reasons for such actions. Additionally, revise the notes to your financial statements to disclose such transactions as necessary.*

AeroVironment Response: AeroVironment has revised the disclosure on pages 39, F-8 and F-9 of the Amendment in accordance with the Staff's comment. The Company notes that it has made no further write-downs or impairments.

Note 8. Stock Based Compensation, page F-16

54. *We note from the disclosure provided in Note 8 that the Company granted 63,000 stock options with an exercise price of \$15.00 per share during the fiscal year ended April 30, 2006. Please tell us and explain in the notes to the Company's financial statements and MD&A how the Company determined the fair market value of its common shares and the related exercise price of the options granted during the fiscal year ended April 30, 2006. As part of your response and your revised disclosure, please address the following:*

- *For each option grant made during the period, please indicate the number of options granted, the exercise price, the fair value of the common stock at the date of grant, and the intrinsic value, if any, per option.*
- *Indicate the valuation method and significant assumptions used to determine the fair value of your common shares and indicate whether the valuation was based on a contemporaneous or retrospective valuation. Also, please indicate whether the valuation was performed by an independent valuation specialist or a related party.*
- *To the extent that the expected public offering price of your common shares exceeds the exercise price of options granted during the preceding twelve month period, please discuss in MD&A each significant factor contributing to a difference between the fair value of each option grant and the expected public offering price.*
- *Refer to the guidance outlined in paragraphs 179 and 182 of The AICPA Practice Aid "Valuation of Privately-Held-Company Equity Securities." We may have further comment upon review of your response and your revised disclosures.*

AeroVironment Response: AeroVironment has revised the disclosure on pages 40 and F-18 of the Amendment in accordance with the Staff's comment. AeroVironment granted options to acquire 63,000 shares of its common stock on October 20, 2005, at an exercise price of \$15 per share. The Board of Directors determined the fair market value of its common stock at such time based upon two arms-length sales by third parties of 25,000 shares of its common stock, occurring

on September 1, 2005 and October 5, 2005, both of which were priced at \$15 per share. The shares were sold by one of the Company's independent directors, Dr. Murray Gell-Mann, and purchased by another of its independent directors, Arnie Fishman and by the Whiting Family Partnership, a family limited partnership of which Tim Conner, the Company's Chief Executive Officer, is a limited partner.

In September 2006, during its second fiscal quarter, AeroVironment issued options to purchase 17,500 shares of its common stock at an exercise price of \$82.98 per share, which was determined to be the fair market value of its common stock at such time, based upon a contemporaneous independent third-party valuation. AeroVironment will provide the requested disclosure with respect to these options in the amendment in which it includes its second quarter financial statements. No other options were granted during the twelve-month period prior to the expected date of the consummation of this offering.

55. *Also, please revise to include the pro forma disclosures required by paragraph 45 of SFAS No. 123 in your Summary of Significant Accounting Policies. Refer to the guidance outlined in paragraph 2e of SFAS No. 148.*

AeroVironment Response: AeroVironment has revised the disclosure on page F-11 of the Amendment in accordance with the Staff's comment.

Note 9. Income Taxes, page F-19

56. *Please tell us and explain in Note 9 the nature of the reconciling item included in the reconciliation of your statutory tax rate to your effective tax rate for the fiscal year ended April 30, 2004, described as "reduction of amount in excess of tax liability." As part of your response, you should also explain why you believe it is appropriate to account for this item as a change in estimate rather than as a correction of an error.*

AeroVironment Response: AeroVironment has determined based upon a detailed review that the majority of the reductions in the tax liability consisted of research and development credits. While no errors in accounting were discovered, the disclosure presentation has been revised in footnote 9 on page F-20 of the Amendment in response to the Staff's comment.

Note 10. Related Party Transactions, page F-20

57. *We note the disclosure indicating that the Company provided a loan to its Chief Executive Officer for \$599,000 in June 2004 to facilitate the exercise of stock options. We also note that this loan was repaid during April 2005. Please tell us and revise the disclosures provided in Note 10 to indicate the number and terms of the options exercised through the issuance of this note and the significant terms of the note received from the Company's Chief Executive Officer. Your response and your revised disclosure should indicate whether this note was recourse or non-recourse and should also indicate whether variable accounting was required for the options exercised through the issuance of the note and the reasons why variable accounting was or was not required.*

AeroVironment Response: AeroVironment has revised the disclosure on page F-21 of the Amendment in accordance with the Staff's comment.

General

58. *Please update the financial statements, if necessary, as required by Rule 3-12 of Regulation S-X.*

AeroVironment Response: AeroVironment has concluded that no update to the financial statements as required by Rule 3-12 of Regulation S-X is necessary for the Amendment.

59. *An updated accountant's consent should be included with any future amendments to your Form S-1 registration statement.*

AeroVironment Response: AeroVironment has provided an updated accountant's consent attached as an exhibit to the Amendment.

Confidential Treatment Request

60. *We have received your confidential treatment request related to this filing and will respond to it separately.*

AeroVironment Response: Thank you.

Any comments or questions regarding the foregoing should be directed to the undersigned at (858) 523-5407. Thank you in advance for your cooperation in connection with this matter.

Very truly yours,

/s/ Craig M. Gamer

Craig M. Gamer
of LATHAM & WATKINS LLP

cc: Mr. Timothy Conver
Michael E. Sullivan, Esq.

Annex A

Statements of Belief Regarding the Company's Small UAS and PosiCharge Products

1. On pages 1 and 50: "[W]e believe that both the small unmanned aircraft systems, or UAS, and fast charge markets are in the early stages of development and have significant growth potential."

Support: According to General Hobbins, Director of the Joint Air Power Competence Center of the Air Force, the market for UAS is expected to grow from 4% of total U.S. military funding for aircraft in 2000 to 31% of total U.S. military funding for aircraft by 2010 (Please see the attached article published at UVonline.com entitled "Unmanned Aircraft Key to Future Operations, General Says" by Captain Elizabeth Culbertson, USAF ("**Annex A-1**")). The Company has also received feedback from its UAS customers, including the U.S. Army, Marine Corps and Special Operations Command, which indicate a high degree of utility of its small UAS products. Customers' deployment plans exceed current deployment levels, suggesting continued demand for its small UAS products. For example, the Army's current acquisition objective is 1,900 *Raven* systems, of which approximately 23% had been delivered as of July 29, 2006. While the Army's acquisition objective would deploy AeroVironment's small UAS at the company level, the Company anticipates that future deployment may occur at the platoon level, which may suggest a larger future volume of small UAS to equip a larger number of platoons. Penetration into other branches of the U.S. military, such as the U.S. Navy and Air Force, is lower than for the Company's U.S. Army, Marine Corps and Special Operations Command customers, but the Company believes that these branches are also likely to adopt this technology in the future. For example, the U.S. Air Force is currently in the process of selecting a micro UAV. Initial acquisitions smaller in scope by allied militaries such as France, Italy and Australia similarly suggest future adoption on a larger scale.

The Company expects non-military applications for small UAS to grow once the Federal Aviation Administration develops a comprehensive regulatory framework for integrating them into the national airspace and as programs such as the Secure Borders Initiative, a potentially large program to limit illegal transit across U.S. borders using technology, communications and coordination, evolve. The Company also believes that as it actively seeks to educate different commercial market segments on the benefits of small UAS deployment, such as first responders, commercial demand will increase.

Regarding the market for fast charge systems, the Company estimates that of the approximately 100,000 electric forklifts delivered in North America in 2005, only 3,000 to 5,000 of those vehicles were supported by fast charge systems. Given the financial, operational and safety benefits offered by fast charge technology, the Company expects continued market penetration and a resulting increase in the share of new electric forklifts being supported by fast charge systems.

2. On pages 1 and 50: "We believe that our small UAS capabilities, combined with our high level of service, logistical support and training, have enabled us to win both competitively bid U.S. military small UAS programs of record as of July 29, 2006."

On page 64: “We believe that the principal competitive factors in the markets for our products and services include product performance, features, acquisition cost, lifetime operating cost, including maintenance and support, ease of use, integration with existing equipment, quality, reliability, customer support, brand and reputation.”

Support: Please see the attached summary (“Annex A-2”) of the set of criteria employed by the U.S. Army to evaluate the applicants for its 2005 SUAV award for which the Company was ultimately selected the winner. These criteria included technical specifications, cost to the U.S. Army, management and evaluation of past performance of the Company’s small UAS. Prior to being declared the winner of the SUAV award from the Marine Corps, the Company secured a Marine Corps award for its *Dragon Eye* product. Please see the attached summary (“Annex A-3”) of the set of criteria employed by the U.S. Marine Corps to evaluate the applicants for its 2003 SUAV award, which included technical specifications, cost to the U.S. Marine Corps, supportability features and evaluation of past performance of the Company’s small UAS. The Company believes that its overall small UAS offering, which includes hardware, service, training and support, enables it to deliver a compelling solution to its customers to satisfy their requirements better than the Company’s competitors.

3. On pages 2 and 56: “We believe that the increased use of our small UAS in the U.S. military will be a catalyst for increased demand by allied countries, and that our efforts to pursue new applications will help to create non-military opportunities.”

On page 51: “While military customers represent the substantial majority of the domestic small UAS market today, we believe that new applications in intelligence, homeland/border security and local law enforcement, as well as potential commercial applications, represent significant new domestic and international growth opportunities for our small UAS solutions.”

On page 53: “As such, we believe that small UAS will play an increasing role in transforming the U.S. military and that the armed forces of NATO and other U.S. allies represent significant growth opportunities.”

On page 53: “We believe that potential commercial applications for small UAS include petrochemical infrastructure monitoring, natural disaster damage assessment and rescue operations, utility infrastructure inspection and aerial imaging.”

Support: The Company believes that the utilization of small UAS among U.S. military forces may result in subsequent adoption by other NATO countries, due to joint operations and procurement programs between the U.S. military and the militaries of these other nations. For example, the United Kingdom’s military is currently borrowing the Company’s *Raven* systems from the U.S. Army for use in Iraq operations (Please see the article “British Forces in Iraq now have Raven UAV for Surveillance” (“Annex A-4”). The Company believes that the U.S. military’s sharing of technology and tactics with NATO and other allied forces will increase their level of familiarity with small UAS and help to drive their acquisition of the Company’s small UAS products.

The Company has provided demonstrations of its small UAS in a variety of non-military applications, including firefighting, search and rescue, border security, and offshore oil platform inspection. In addition, the Company has provided small UAS surveillance services to a pipeline operator on a commercial basis. The Company believes that although its small UAS provide a potentially safer and more cost-effective method of delivering aerial data, it will take time to educate different market segments regarding the utility of this technology for their needs. The Company believes that its demonstrations of the commercial applications of its small UAS and initial commercial projects will help to drive increased adoption of small UAS in non-military applications over time.

The Company expects non-military applications for small UAS to grow once the Federal Aviation Administration develops a comprehensive regulatory framework for integrating them into the national airspace and as programs such as the Secure Borders Initiative, a potentially large program to limit illegal transit across U.S. borders using technology, communications and coordination, evolve. The Company also believes that as it actively seeks to educate different commercial market segments on the benefits of small UAS deployment, such as first responders, commercial demand will increase.

5. On page 52: “We believe that UAS, which range from large systems, such as *Global Hawk* and *Predator*, to small systems, such as our *Raven*, are an integral part of this transforming military force because they provide critical observation and communications capabilities.”

Support: The Company refers the Staff to a joint article by the Office of Force Transformation and the Office of Assistant Secretary of Defense, which states: “Transformation is the roadmap that will lead the U.S. to ‘...a future force that is defined less by size and more by mobility and swiftness, one that is easier to deploy and sustain, one that relies more heavily on stealth, precision weaponry, and information technologies’” (*Network Centric Operations Conceptual Framework Version 2.0*, a collaborative effort of John Garstka, Office of Force Transformation and David Alberts, Office of Assistant Secretary of Defense).

A key component of the Department of Defense’s military transformation effort is the concept of Network Centric Operations, or NCO. The NCO strategy contemplates a variety of sensors and sensor platforms distributed throughout the battlefield, effectively transmitting data to necessary military personnel. The Company believes that unmanned vehicles, and unmanned aircraft systems in particular, offer a unique platform for collecting data. Their position above the battlefield affords them a valuable vantage point for gathering visual and other data to aid in activities such as target identification, battle damage assessment and force protection. Benefits specific to the utilization of small UAS include the ability to deploy them when and where needed, without a large logistics or support footprint, as well as their potential to provide data and communications relay for troops whose communications are limited by obstacles to line-of-sight systems. As an example of the perceived value of small UAS in this military transformation, the U.S. Army’s Future Combat Systems program identifies four classes of unmanned aircraft system for integration into its force structure.

6. On page 53: “We believe that the U.S. military’s ongoing transformation, coupled with the nature of the threat associated with the global war on terror, will continue to be long-term drivers of the demand for small UAS.”

Support: The Company refers the Staff to #5 in this Annex A above for a discussion of the demand for small UAS as a result of the U.S. military’s ongoing transformation.

Regarding the global war on terror as a long-term driver for the demand for small UAS, the U.S. political and military leadership have consistently maintained that the global war on terror is a longer-term conflict that will run its course over many years. This conflict is characterized by small groups of enemy combatants operating in a clandestine fashion in urban and other areas, requiring the U.S. and allied forces to deploy small groups of highly-skilled warfighters supported by advanced technology and weapons systems to seek out and neutralize these opponents. This trend suggests that small UAS, which provide a cost-effective and flexible platform for collecting and transmitting data on a warfighter level, will continue to be utilized as important tools in this conflict.

7. On page 54: “We believe that the market for our PosiCharge fast charge systems will continue to grow as organizations that utilize electric vehicles seek to enhance their operational performance. In addition, we believe that the non-U.S. market offers significant opportunities for growth.”

Support: The Company estimates that of the approximately 100,000 electric forklifts delivered in North America in 2005, only 3,000 to 5,000 of those vehicles were supported by fast charge systems. Given the financial, operational and safety benefits offered by fast charge technology, the Company expects continued market penetration and a resulting increase in the share of new electric forklifts being supported by fast charge systems. The Company believes that penetration of the market outside of North America is also in a relatively early stage of development.

The Company believes that PosiCharge can increase productivity, enhance safety, reduce infrastructure cost, and liberate valuable floorspace occupied by battery changing rooms. The Company believes that as more operators of factories, distribution centers, warehouses and airport ground support equipment implement PosiCharge or other fast charge systems, awareness of the technology will continue to increase and resistance to adopting the technology, both from potential customers and entrenched distribution channel participants, will decrease, resulting in market growth.

8. On page 54: “We believe that our products provide unique capabilities that had not previously existed, perform reliably and affordably, and help our customers operate more effectively.”

Support: Regarding the assertion that AeroVironment provided products with capabilities that had not previously existed, based upon its extensive industry knowledge and experience, the Company believes that it developed the first back-packable small UAS (*Pointer, Raven*) that could

be hand launched and provide real-time video and infrared, as well as the first fast charge system that could deliver charge up to 16 vehicles simultaneously from a single utility connection.

Regarding the reliability, affordability and effectiveness of the Company's small UAS, the fleet of *Raven* small UAS currently operating in Iraq have an Operational Availability, a measure of readiness for use that was developed and is managed by the Army, of above 90%, which is considered by the U.S. Army to be high. As compared to other methods of conducting reconnaissance, including sending personnel into potentially dangerous locations, the Company believes that small UAS provide an affordable solution, particularly compared to larger UAS such as *Hunter*, *Shadow*, *Predator* and *Global Hawk*. By utilizing the Company's small UAS, military personnel are able to increase their situational awareness, thereby increasing their operating effectiveness. Furthermore, a single person using a single ground control unit and receiver/transmitter can operate the Company's small UAS, such as *Raven*, whereas larger UAS typically require larger support teams and infrastructure. For example, the *Predator* UAS requires a support team of 55 personnel.

Regarding the reliability, affordability and effectiveness of the Company's PosiCharge systems, its systems have been in continuous use in customer facilities since the year 2000. Once installed, PosiCharge systems tend to operate effectively and reliably for multiple years; PosiCharge systems installed in 2000 and 2001 are still currently in service. From the Company's experience, the most common replacement service required for PosiCharge systems is the replacement of charge cable connectors that have been damaged by operators. In terms of affordability and effectiveness, PosiCharge allows customers to increase the productivity of their lift truck drivers, reduce labor costs, re-purpose battery changing rooms for more productive activities and improve facility safety through the elimination of battery changing and its associated risk of battery acid spillage and personal injury.

9. On page 55: "We believe that, for the fiscal year ended April 30, 2006, sales of our small UAS accounted for a significant majority of the U.S. military's small UAS purchases."

Support: Based upon its extensive industry knowledge and experience, as of April 30, 2006, the Company was aware of only two active, material small UAS procurement programs in the U.S. Department of Defense. AeroVironment was the only company selected to provide small UAS to the U.S. Army, Marine Corps and SOCOM as a result of winning both of these programs. As such, the Company believes that it has a significant majority share of the U.S. military's small UAS purchases.

10. On page 55: "We believe our work to develop these algorithms contributed to the major battery manufacturers offering battery warranties for fast charge, which provided a critical assurance to customers that fast charge systems would not harm their batteries."

Support: Extensive testing of motive power battery performance and lifespan with PosiCharge fast charge systems has been conducted in the Company's advanced battery development testing laboratories, beginning in 1998 and continuing today. Battery brands from all major U.S. motive battery manufacturers have been tested, and data derived from this testing has been shared with the battery manufacturers. The Company believes that this collaborative

approach of sharing extensive test data with battery manufacturers was a key driver for the issuance of fast charge warranties for brands including Deka (2001), GNB (2001), Crown (2001) and EnerSys (2002). In the case of Deka batteries (produced by East Penn Manufacturing), the Company tested one of their batteries over several years, sending individual cells to them for analysis at three points during the test program. The Company believes that the issuance of battery warranties by the battery manufacturers for fast charge systems helped to reduce the perceived risk of implementing fast charge systems by customers, contributing to further adoption.

11. On page 56: “Moreover, while fast charge technology itself provides significant operational and financial benefits to our customers, we believe that our ability to integrate the system effectively into customer operations through installation services, asset management capabilities and post-sale support increases the value proposition. We believe that this “turnkey” approach to the fast charge market represents a potential source of competitive advantage.”

Support: The Company’s sales offering previously consisted primarily of application engineering (determining the appropriate configuration of PosiCharge components to suit a particular customer’s needs) and system sales. Customers typically contracted an in-house or local service provider for installation. Based on its experience, the Company believes that providing installation services itself increases the probability of successful operation and use by the customer. Similarly, by supporting its customers through post-sale services (provided through a combination of employees and contracted service providers), the Company believes that this increases its customers’ success with the systems and strengthen its relationships with them, which may lead to subsequent sales to them.

The Company’s PosiCharge systems record each charging event. By collecting this data and synthesizing it into reports, the Company can provide actionable information to its customers regarding the level of use of their individual lift trucks. This information enables customers to increase the efficiency of their fleet by tailoring maintenance and rotating assets to reduce cost and improve vehicle performance. The Company believes that this capability is a significant element of competitive differentiation. A sample of recent transactions involving the sale of installation or data services indicated an average increase in revenue per transaction of over 20%.

12. On page 60: “The product of years of research with both our own and U.S. government-sponsored development funding, we believe *Global Observer* to be the world’s first liquid hydrogen-powered UAS.”

Support: Based upon its extensive industry knowledge and experience, including over 20 years of experience developing stratospheric and other unmanned aircraft, the Company is not aware of any other liquid hydrogen-powered unmanned aircraft that has flown successfully.

13. On page 61: “We believe that recent combat experience in urban environments indicates that such a capability would be of great value and could significantly improve the ability to neutralize hostile elements such as snipers, machine guns and mortar launchers.”

Support: The U.S. military is pursuing means of shortening the “kill chain”, which refers to a six-stage plan of attack — find, fix, track, target, engage and assess. The objective is to act quickly when a target is identified to increase the probability of neutralizing that target. (See

“Compressing the Kill Chain” by Adam J. Hebert, published in Air Force Magazine Online (“[Annex A-5](#)”). Threats such as snipers, machine gunners and mortar or small rocket launchers are particularly difficult to find and tend to be highly mobile, making them difficult to track after they attack. Urban environments offer numerous places for these targets to hide. *Switchblade* is a development program that would provide an easy-to-launch small UAS designed to identify the location of these types of targets through its onboard video camera. The operator would view the target through a screen on the ground control unit and then activate a terminal guidance mode that would launch *Switchblade* at high speed toward the target. An explosive charge within *Switchblade* would detonate upon contact.

14. On page 61: “By maintaining assigned points of contact with our customers, we believe that we are able to enhance our relationships, service existing contracts effectively and gain vital feedback to improve our responsiveness and product offerings.”

Support: In both its UAS and PosiCharge product lines, the Company has deployed dedicated business development and sales personnel to pursue specific prospects and manage relationships with certain customers. These individuals provide single points of contact for the Company’s customers and facilitate an up-to-date understanding of customer needs. The Company believes that the relationships between these individuals and the Company’s customers play a significant role in providing a flow of information from the customers back to AeroVironment, allowing it to continually improve its product and service offerings.

15. On page 62: “We believe that these dealers are well suited to address the large number of smaller and geographically dispersed customers with industrial vehicle fleets.”

Support: Based upon its extensive industry knowledge and experience, the Company believes that independent battery dealers tend to focus on specific geographic areas. Their coverage areas range based on the geographic concentration of potential customers, the scope of the distributors’ sales and service operation and whether or not they have offices in multiple locations. Because these dealers are regionally-based, they are not able to support customers with extensive operations in multiple regions, states or nations, but are well-suited to identify prospective customers within their regions, sell to those customers and provide services with rapid response levels based on their geographic proximity.

16. On page 63: “As a result, we believe that we can significantly reduce the time required to move a product from its design phase to full-rate production deliveries with high reliability, quality and yields.”

Support: The Company believes that it maintains an agile and flexible design approach that permits it to respond quickly to customer input. As a result, the Company believes that it can develop solutions to address evolving customer needs relatively quickly and efficiently. This ability is based on a number of factors, including the Company’s design and engineering approach, its strategic deployment of internal research and development funding, and its people and other resources. The Company’s design and engineering approach is based on the concept of engineering “first principles,” where the Company focuses on the issues most critical to enabling a successful result. This allows the Company to avoid spending a great deal of time and money on

related but unnecessary activities. The Company also allocates internal funding to research and development programs that it determines to be “high potential.” This enables it to begin formal contracting processes with a “head start” compared to where its competitors might be. Finally, the Company’s skilled people take a direct path to delivering rapid and effective prototypes, in part by utilizing equipment, such as its CNC machinery, to accelerate the development of tooling for new components and products. All of these factors, and others, result in the Company’s ability to respond rapidly to customer, product and market requirements.

Annex B

Statements of Comparison Regarding PosiCharge and its Competitors

1. On pages 2 and 35: “PosiCharge is able to recharge a typical electric industrial vehicle battery and return it to service up to 16 times faster than conventional charging methods.”

Support: Although AeroVironment believes this assertion to be accurate, the Company has revised the disclosure on pages 2 and 48 of the Amendment to conform to the data available in the following documents. Please see the attached (1) study commissioned by the Electric Power Research Institute (the “**EPRI Study**”) (“**Annex B-1**”) and (2) article from BuyerZone.com entitled “Electric forklifts: clean and quiet for indoor use” (the “**BuyerZone Article**”) (“**Annex B-2**”). According to the BuyerZone Article, conventional forklift battery chargers typically require eight hours to complete a full charge. This charging process typically generates heat inside the battery, which requires another eight hours for the battery to cool down to a temperature low enough to permit installation into a forklift. According to the EPRI Study, PosiCharge can return a battery’s state of charge from 20% to 80%, while not generating the heat of a conventional forklift battery charger (and therefore not requiring a cooling period), in one to two hours. While it is true that PosiCharge is capable of restoring a battery’s state of charge in as little as one hour under optimal conditions, the Company’s experience is that a recharge time of approximately one hour and 20 minutes is more typical for the fastest charge time under real world conditions. For this reason, the Company has revised its disclosure to indicate that PosiCharge can recharge a typical industrial vehicle battery up to six times faster than a conventional charger.

2. On page 55: “PosiCharge can reduce the amount of electricity required to support electric industrial vehicles by several hundred dollars per year per vehicle as compared to conventional battery chargers.”

Support: Please see the attached EPRI Study. The EPRI Study disclosed the results of a trial conducted by a Ford Motor Company assembly plant between August 2001 and December 2001, during which the assembly plant had installed and operated both PosiCharge fast charge systems and conventional battery charging equipment. The EPRI Study concluded that PosiCharge fast charge systems reduced electricity consumption by over \$500 per electric lift truck per year, when compared to electricity consumption utilizing conventional battery charging equipment.

3. On pages 55 and 56: “[O]ther fast charge and conventional charge systems, which lack our current and voltage regulating tailored charge algorithms and monitoring capabilities, may actually contribute to lower battery performance and lifespan over time, ultimately resulting in higher battery costs and degraded vehicle performance.”

Support: Please see the attached article by Edward P. Rafter, P.E., Tier IV Consulting Group, entitled “Why Batteries Fail Prematurely,” published in EC&M Magazine (the “**EC&M Article**”) (“**Annex B-3**”). The EC&M Article indicates that undercharging or overcharging a battery can cause it to fail prematurely, and that setting the proper charging level requires effective monitoring of the interaction between voltage and temperature. Based upon its extensive knowledge of and experience in the industry, AeroVironment believes that no other fast charge

systems offered by competitors and no conventional charging systems have the monitoring and control capabilities comparable to those of the PosiCharge system.

4. On page 56: “PosiCharge customers typically begin to realize cost savings when compared to battery charging within the first twelve months of operation.”

Support: AeroVironment provides potential PosiCharge customers with a financial analysis that details the expenditures and estimated cost savings over time for the PosiCharge system. AeroVironment is providing the staff a copy of such an analysis, which is attached hereto as **Annex B-4**. AeroVironment believes that the primary cost savings obtained using PosiCharge systems includes the productivity that is regained by eliminating the need for the vehicle operator to drive the vehicle to a dedicated area to change the battery. Additionally, PosiCharge systems typically reduce the need for battery maintenance, thereby reducing labor costs for battery maintenance personnel. AeroVironment respectfully requests that the staff return Annex B-4 when it has finished its review.

5. On page 59: PosiCharge DVS “is designed to deliver lower up-front installation and ongoing utility costs when compared to other single vehicle fast chargers.”

Support: Please see the attached data sheet for PosiCharge DVS, which is attached hereto as **Annex B-5**. PosiCharge DVS draws electricity from a single utility connection, which it then converts and routes to charge two vehicles simultaneously. Because of the costs associated with the installation of any battery charger into a building’s electrical system, DVS offers lower total installation costs to support two vehicles than would be the case if two single vehicle fast chargers were each installed. Additionally, by employing more efficient power management components than some other fast charge systems, DVS can more efficiently transfer electricity into the battery, resulting in less electricity loss and, potentially, lower utility cost.

6. On page 59: PosiCharge MVS “is designed to deliver greater cost-savings as the number of vehicles simultaneously charged increases, as compared to competitive charging systems, which are currently capable of charging only up to eight vehicles at the same time.”

Support: Please see the attached data sheet for PosiCharge MVS, which is attached hereto as **Annex B-6**. PosiCharge MVS draws electricity from a single utility connection, which it then converts and routes to charge up to 16 vehicles simultaneously. Because of the costs associated with the installation of any battery charger into a building’s electrical system, MVS offers lower total installation costs to support 16 vehicles than would be the case if two eight-vehicle fast chargers were each installed. Additionally, by employing more efficient power management components than some other fast charge systems, MVS can more efficiently transfer electricity into the battery, resulting in less electricity loss and, potentially, lower utility cost.

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November 2, 2006

VIA EDGAR

Max A. Webb
Assistant Director
Division of Corporation Finance
Securities and Exchange Commission
100 F Street, N.E., Mail Stop 3561
Washington, D.C. 20549

**Re: AeroVironment, Inc.
Registration Statement on Form S-1
Filed September 28, 2006
File No. 333-137658**

Dear Mr. Webb:

Simultaneously with the filing of this letter, AeroVironment, Inc. is submitting (by EDGAR) Amendment No. 1 to its Registration Statement on Form S-1 (the "**Amendment**"). Courtesy copies of this letter and the Amendment (specifically marked to show the changes thereto) are being submitted to the Staff by hand delivery.

Any comments or questions regarding the Amendment should be directed to the undersigned at (858) 523-3959. Thank you in advance for your cooperation in connection with this matter.

Very truly yours,

/s/ MICHAEL SULLIVAN
Michael Sullivan

cc: Craig M. Gamer, Esq., Latham & Watkins LLP
Stuart L. Hindle, AeroVironment, Inc.