[Mercury Computer Systems Letterhead]

March 29, 2005

VIA EDGAR AND OVERNIGHT COURIER

Mr. Daniel Gordon
Branch Chief
Division of Corporation Finance
Securities and Exchange Commission
450 Fifth Street, N.W.
Washington, DC 20549

Re: Mercury Computer Systems, Inc.
Form 10-K for the fiscal year ended June 30, 2004 Filed September 10, 2004
Form 10-Q for the quarter ended December 31, 2004
File No. 0-23599

Dear Mr. Gordon:

This letter is submitted on behalf of Mercury Computer Systems, Inc. (the "Company") in response to the comments of the staff of the Division of Corporation Finance (the "Staff") of the Securities and Exchange Commission (the "Commission") raised in your letter of March 1, 2005 to Robert E. Hult, Senior Vice President and Chief Financial Officer of the Company (the "Comment Letter"). For reference purposes, the text of the Comment Letter has been reproduced herein with responses below each numbered comment.

The Company will file amendments to its Form 10-K for the fiscal year ended June 30, 2004 (the "Form 10-K") and Form 10-Q for the fiscal quarter ended December 31, 2004 (the "Form 10-Q") in response to the Staff's comments nos. 3, 5 and 6.

Form 10-K as of June 30, 2004

Note G – Acquisitions – Page 53

Comment 1:

We note your disclosure that you believe the acquisition of TGS "will expand the breadth of the Company's product offerings in the Image and Visualization Solutions Group markets." We also note your disclosure on page 55 that the pro forma results of operations assuming TGS had been acquired

July 1, 2003 would not differ materially from your operating results as reported. We note you have similar disclosures relating to your acquisition of Advanced Radio Corporation in this Form 10-K and relating to your acquisition of Momentum Computer Group in your December 31, 2004 Form 10-Q. Given these statements, it is unclear why these purchases resulted in relatively minor amounts being allocated to intangible assets, with relatively large amounts recorded to goodwill. Based on your disclosures, it appears that the value of these acquisitions rests with the product offerings of the acquired companies and therefore you should have allocated a greater amount to intangible assets in accordance with paragraphs 37(e) and 39 of SFAS 141. Please supplementally tell us why you did not allocate a greater amount to any intangible assets, including those listed in Appendix A14 of SFAS 14. Tell us why the purchase resulted in such a significant amount being recorded to goodwill.

Response 1:

The Company supplementally advises the Staff of the following information pertaining to its allocation of the purchase price between the acquired tangible assets, intangible assets and goodwill for each of the following separate business acquisitions completed within the past twelve months: TGS Group ("TGS"); Advanced Radio Corporation ("ARC"); and Momentum Computer, Inc. ("Momentum"). For each acquisition, the Company followed the guidelines set forth in Statement of Financial Accounting Standards No. 141, *Business Combinations*, relating to the identification and valuation of the tangible and intangible assets. A detailed description of the process that the Company followed in this regard for each acquisition is provided below.

In overview, the Company believes that its purchases of TGS, ARC and Momentum resulted in the allocation of considerable amounts to goodwill, and conversely did not result in the allocation of greater amounts to identified intangible assets, because of the significant synergistic and strategic benefits that it expected to realize from each acquisition and that were not considered in the valuations of the identified intangible assets that the Company acquired. The Company believes that it, unlike other market participants, had unique opportunities to generate revenues and profits through (1) its ability to integrate the acquired technologies into the Company's technology, thus offering its customers a more comprehensive technology solution and (2) its ability to expand the target company's customer base through use of the Company's sales channel. Such perspectives were discussed with the Company's Board of Directors as the strategic rationale for the acquisitions, and the quantification of these synergies was reflected in the financial projections that were used to support the purchase price the Company negotiated for each acquisition.

In contrast, the Company's valuations for identified intangible assets only reflected assumptions likely to be used by market participants. Purchase consideration related to synergistic or strategic benefits in excess of what may have been realized by market participants was not included in the valuation of intangible assets, consistent with the guidance of SFAS No. 142, *Goodwill and Other Intangible Assets*, and the AICPA's practice aid, *Assets to be Used in Research and Development Activities* (the "AICPA's practice aid"). As a result, such buyer-specific synergies are reflected as a component of residual goodwill.

The major assumptions utilized in the Company's valuations for intangible assets were based on: (1) information about the target company on a stand-alone basis, largely as provided by the target's management; (2) results from the Company's diligence process; and (3) a determination as to what, if any, further synergies market participants would be able to achieve.

In each business case that management presented to the Company's Board of Directors as part of the acquisition approval process, the Company estimated the value of the target company on a stand-alone basis and with Mercury-specific synergies, while explicitly considering the costs to achieve these synergies. By valuing synergies expected to be realized by the Company, the analyses provided support for the purchase price as well as the estimated level of goodwill.

Identification of Intangible Assets to be Valued

In order to identify properly all intangible assets acquired for consideration in the purchase price allocations of TGS, ARC and Momentum, for each acquisition, the Company obtained and read the following key documents and information:

- Technical due diligence reports prepared by the Company's engineers and management, based in part on interviews the Company conducted with the target company's senior engineers and management;
- The target company's website, product marketing literature and other publicly available information;
- Legal and financial due diligence reports prepared with the assistance of the Company's outside advisors;
- The target company's historical balance sheets and historical and projected income statements;
- The term sheet exchanged with the target company outlining the proposed transaction;
- The final stock purchase agreement to effect the acquisition;
- The Company's press releases pertaining to the public announcement of the acquisition; and
- The Company's internal business case reviews and industry narratives reviewed by management and the Company's board of directors.

In the case of each acquisition, the Company was assisted in the identification and the valuation of intangible assets by nationally-recognized independent appraisers that the Company engaged. The appraisers reviewed the key documents listed above and conducted interviews with select members of the Company's due diligence team and the acquired company's management. Specifically, the appraisers interviewed those individuals who are directly responsible for the operations, technology development and marketing efforts of the Company and each acquired company.

Using the listing of intangible assets examples in SFAS 141 (appendix A14) as a guide, the Company conducted a thorough search of the documents noted above and interviewed key management to identify potential intangible assets, broadly including:

- Marketing-related intangible assets, such as trade names and non-compete agreements;
- Customer-related intangible assets, such as order backlog and customer relationships;
- Contract-based intangible assets, such as license and royalty agreements; and
- Technology-based intangible assets, such as completed technology and in-process research and development.

Valuation Approach and Reasonableness

The valuation approaches considered were the income approach, market approach and cost approach. Each of these customary and accepted approaches has application to specific types of assets depending on the nature of the asset being measured and the ability of a buyer to replicate the asset in light of any legal protection it enjoys. Based on the characteristics of the individual asset to be valued, the most applicable approach was selected.

In general, the reasonableness of key valuation assumptions used to value identified intangible assets (including revenue growth rates, operating expenses, obsolescence rates, tax rates and discount rates) was determined by a comparison of the stand-alone projections of the target company (excluding Mercury-specific synergies) to the historical results of the target company, industry growth rates, and other benchmarking analyses, and through discussions with management of the target company and the Company.

TGS Group

TGS is an interactive graphics software vendor that provides two-dimensional and three-dimensional (“3D”) graphics software tools, utilities and applications. At the time of acquisition, it employed 70 people (including 22 engineers) and in its latest fiscal year ended September 30, 2003 had reported unaudited revenues of $7.4 million and net income of $0.2 million. TGS has operated as a business for over 20 years.

The Company acquired TGS as a first major step in moving up the value chain for its Medical Business Group. The acquisition is the beginning of the formation of a group around the concept of “3D Image Understanding” that will be focusing on the development, design, patenting and marketing of a 3D platform, with an initial focus on a medical vertical market and related markets like bio-informatics. The Company already has a base of customers in this space and intends to integrate the TGS technology platform into the Company’s platform and offer this combined 3D platform to its customers to gain incremental revenue.

Intangible Assets Identified – TGS

Through the intangible asset discovery process described above, the Company identified the following potential intangible assets with respect to the TGS acquisition:

- Completed technologies;
- Maintenance relationships;
- Customer relationships;
- Trade names;
- Customer contracts;
- Non-competition agreements;
- Order backlog; and
- Licensing agreements.

In addition, the Company considered the possible existence of (1) employment contracts and (2) in-process research and development, although the Company noted no evidence of their existence through its process to identify potential intangible assets.

Intangible Assets Valued and Not Valued – TGS

In the final purchase price allocation, the Company did allocate value to certain of the assets listed above as follows:

Intangible Asset	Fair Value (in thousands)
Completed technologies:	
Open Inventor software	$ 1,110
Amira software	420
Customer relationships:	
Maintenance relationships – Open Inventor	690
Maintenance relationships – Amira	40
Customer relationships from software licenses	660
Customer A contract	100
Customer B contract	100
Licensing Agreement – Vendor A	350
Trade name – Amira	50
	$ 3,520

The Company did not allocate value to the following items, as they were determined to have a *de minimis* or no value for the reasons noted below:

- Non-competition agreements;
- Order backlog;
- Employment contracts;
- Open Inventor and TGS trade names; and
- In-process research and development.

Non-competition Agreements – In connection with the acquisition, all employees of TGS signed non-competition agreements with the Company under which employees who leave agree not to compete against the Company for a period of six to twelve months depending upon the employee's position with the acquired company. Given the short time period and the low probability of any individuals leaving and competing successfully against the Company, no value was ascribed to these agreements.

In addition, five employees and one non-employee shareholder of TGS, as well as certain of their affiliates, signed non-compete agreements that extend for a period of 30 months following the closing date of the acquisition. The Company believes the fair value of a non-competition agreement is based on the cumulative probability of an employee leaving, competing and successfully competing. Due to the compensation plans that the Company put in place for the key employees that will provide them significant compensation if they remain employed with the Company for a 24- to 36-month period, the Company believes that the probability of those employees leaving is relatively low. Moreover, the time necessary to develop new, competing software would reduce the likelihood of such persons successfully competing against the Company and the potential damage to the Company should they decide to compete. Consequently, the Company concluded that these specific non-competition agreements had a *de minimis* value.

Order Backlog – As of the acquisition date, TGS had an inconsequential amount of order backlog. As a software company, TGS is typically able to fulfill orders in short notice, as the time needed to create and distribute software disks is very short. Since nominal backlog existed at the acquisition date, no value was assigned in the purchase price allocation.

Employment Contracts – No existing employment contracts were identified in the Company's acquisition due diligence, and the Company did not enter into any new employment contracts with employees of TGS hired as part of the acquisition. Consequently, no value was assigned.

Open Inventor and TGS Trade Names – The Open Inventor trade name is owned by a third party and has been used by TGS for approximately ten years under a license agreement (which the Company separately valued and recorded as part of the purchase price allocation). At the time of the acquisition, the Company expected to use the TGS trade name only internally for approximately six months, at which time the Company would discontinue use of the TGS name. For these reasons, the Company did not ascribe a separate value to either of these intangible assets.

In-Process Research and Development – The Company considered the AICPA's practice aid to identify and account for in-process research and development ("IPR&D"). Through due diligence efforts, the

Company identified that TGS had two completed software products, Open Inventor and Amira, and had no unrelated research and development projects under development. As of the acquisition date, Open Inventor 4.0 was the current version of the product and its successor, Open Inventor 5.0, was substantially complete with no remaining technological risks. Therefore, the Company considered Open Inventor 5.0 to be part of the Open Inventor completed technology that it valued, and not IPR&D. Open Inventor 5.0 was commercially released shortly after the acquisition date.

With respect to the Amira software product, Amira 3.1 was the most current version of the product, having been released only three months prior to the acquisition date. As of the acquisition date, there were no Amira development projects in process, and the next version of the software was expected to be made available no sooner than 12 months following the acquisition date. Accordingly, the Company concluded that TGS had no research and development projects that met the criteria of the AICPA guidelines for assets to be used in research and development.

Valuation Methodology and Assumptions – TGS

For those identified intangible assets that the Company did value as part of the TGS purchase price allocation, the Company determined the fair value of each acquired intangible asset as follows:

Completed Technology – The Company used the Income Approach, specifically the relief-from-royalty method, to value completed technologies related to both the Open Inventor and Amira software technologies. Under that method, fair value is represented by the present value of the cost savings that accrue to the owner of an intangible asset who would otherwise have to pay royalties on revenues earned through the use of the asset. Key assumptions used in this valuation included estimated revenue, the royalty rate for use of the asset, and the discount rate, determined as follows:

- Estimated revenue to be generated from sales was derived from the product revenue forecasts that the Company obtained from TGS's management, which were the same forecasts (representing TGS as a stand-alone business) that were reviewed by the Company's Board of Directors in considering the acquisition. Those forecasts implied average annual growth of 17% through 2008 for Open Inventor, which compares to historical growth of 10% for the prior two years. Those forecasts also implied average annual growth of 29% for Amira through 2008, which compares to 79% growth in the prior two years, as sales of this product had only become substantive in the year-earlier period.
- The royalty rate was determined by performing a search based on SIC codes and keywords for licenses of technology similar to that of TGS, which resulted in the identification of four agreements with royalty rates ranging from 5% to 15%. Based on the projected growth rates for the technologies and the 3D imaging industry as a whole, as well as the relative maturity and market acceptance of the Open Inventor and Amira software, the Company selected the high end of the range for both technologies. The Company calculated royalty savings by multiplying the projected revenue attributable to the completed technologies by a rate of 15%.

- A discount rate of 17% was selected, equaling the weighted average cost of capital ("WACC") for TGS and reflecting the relative risk of the asset.

Maintenance Relationships – The Company used the Income Approach, specifically the discounted cash flow ("DCF") method, to value customer relationships arising from TGS's existing software maintenance contracts. Key assumptions used in this valuation included estimated revenue, cost of sales and other operating expenses, royalty rate and discount rate, determined as follows:

- Revenue from existing maintenance contracts was estimated to grow at a rate of 5% annually and be adversely impacted by annual customer attrition rates of 15% for the Open Inventor and 40% for the Amira maintenance relationships, based upon review of TGS's historical revenue and discussion with TGS management. The Open Inventor maintenance relationships have a lower attrition rate, as the software is sold as a toolkit that is highly integrated into end-user applications. The Amira relationships have a higher attrition rate, as the software is a stand-alone application that often meets the needs of a customer immediately upon purchase. Further, the 5% estimated annual growth for existing maintenance contracts compares with TGS's historical annual average growth rate of 7% for total maintenance revenue (from existing and new customers).
- Cost of sales and operating expenses were estimated to be approximately 50% of revenues based upon a combination of discussions with TGS management, historical financial results and industry experience.
- In order to isolate the net income attributable to the Open Inventor and Amira maintenance relationships, the Company deducted a royalty expense related to the use of the technology, using the same 15% royalty rate used to value the completed technology.
- A discount rate of 16% was selected, equaling the WACC for TGS less 1%, due to the relative certainty of achieving the expected cash flows.

Customer Relationships – The Company used the Income Approach, specifically the DCF method, to value the customer relationships of TGS (excluding maintenance relationships). Key assumptions used in this valuation included estimated revenue, cost of sales and other operating expenses, royalty rate and discount rate, determined as follows:

- License revenue from existing customer relationships was estimated to grow at a rate of 5% annually through 2010 and be adversely impacted by customer attrition at a rate of 30% annually, reflecting the increased risk of losing existing customers due to the introduction of new technologies by competitors. These assumptions were based upon discussions with TGS management, reflecting their experience and estimates.
- Cost of sales and operating expenses were estimated to be approximately 67% of customer relationship revenue, based upon discussions with TGS management and historical financial results. The 67% estimate is lower than TGS's 93% average total cost for the prior two years, reflecting only the relevant effort necessary to maintain the existing relationships and not to obtain new ones.

- In order to isolate the net income attributable to the Open Inventor and Amira customer relationships, the Company deducted a royalty expense related to the use of the technology, using the same 15% royalty rate used to value the completed technology.
- A discount rate of 17% was selected, equaling the WACC for TGS and reflecting the relative risk of the asset.

Customer A Contract – The contract with Customer A was TGS's most significant Open Inventor customer contract, which had been in place for six years but was due to expire two months after the acquisition date, unless renewed. The contract specifies the pricing to Customer A of licenses, royalties and related maintenance services. The Company used the Income Approach, specifically the DCF method, to value the contract. Key assumptions used in this valuation included estimated revenue, cost of sales and other operating expenses, royalty rate and discount rate, determined as follows:

- Estimated revenue to be generated from the contract was derived from TGS management's forecasts, which indicated an average annual growth rate of 34% through 2007 and a decline in revenue thereafter. In addition, the Company included the likelihood of the contract being discontinued in each year of the projection period.
- Cost of sales and operating expenses were estimated to be approximately 71% of revenues, based upon discussions with TGS management and historical financial results. The 71% estimate is lower than TGS's 93% average total costs for the prior two years, reflecting only the relevant effort necessary to maintain the existing relationship.
- In order to isolate the net income attributable to the Customer A contract, the Company deducted a royalty expense related to the use of the technology, using the same 15% royalty rate used to value the completed technology.
- A discount rate of 16% was selected, equaling the WACC for TGS less 1%, due to the relative certainty of achieving the expected cash flows.

Customer B Contract – The Customer B contract was a significant services contract that had been in place for three years at the acquisition date and was expected to continue into the foreseeable future. The contract specifies the pricing to Customer B for TGS's provision of on-site consultants. The Company used the Income Approach, specifically the DCF method, to value the contract. Key assumptions used in this valuation included estimated revenue, cost of sales and other operating expenses, and discount rate, determined as follows:

- Estimated revenue to be generated from the contract was derived from TGS management's forecasts, which indicated flat revenue through 2008 in amounts consistent with 2004 revenue. In addition, the Company included the likelihood of the contract being discontinued in each year of the projection period.
- Cost of sales and operating expenses were estimated to be approximately 80% of revenues, based upon discussions with TGS management and historical financial results. The 80% estimate is lower than TGS's 93% average total costs for the prior two years, reflecting higher cost of providing

services, as well as only the relevant effort necessary to maintain the existing relationship rather than generating new business with new customers.

- A discount rate of 16% was selected, equaling the WACC for TGS less 1%, due to the relative certainty of achieving the expected cash flows.

Vendor A Contract **–** As part of the acquisition, the Company assumed an agreement with Vendor A, which allows TGS to use the core Open Inventor intellectual property that is owned by Vendor A. Any modifications, enhancements or derivative works created by TGS based on the core technology remain the property of TGS. Two months prior to the acquisition date, TGS had renegotiated the contract and agreed to pay $350,000 for the perpetual use of the core technology from that point forward. As this negotiation was between a willing buyer and seller and was consummated in close proximity to the acquisition date, the Company used the amount to be paid to Vendor A as the fair value of this licensing agreement.

Amira Trade Name **–** The Company acquired the rights to the Amira trade name, a registered name, which TGS management indicated was widely recognized among universities performing research in the medical imaging field. The Company used the Income Approach, specifically the relief-from-royalty method, to value the trade name. Key assumptions used included estimated revenue, the royalty rate for use of the trade name, and the discount rate, determined as follows:

- Estimated revenue was derived from the projections of total license and maintenance revenues related to the Amira product, then reduced by 40% to derive only university-related revenue based on TGS's historical customer base for the Amira product.
- The royalty rate for use of the trade name was estimated to be 1% based on rates typically charged in this and relevant industries.
- A discount rate of 17% was selected, equaling the WACC for TGS.

Unallocated Purchase Price – TGS Goodwill

This transaction resulted in an amount of purchase price that exceeded the estimated fair values of tangible and intangible assets, which was allocated to goodwill. The Company believes that the high amount of goodwill relative to identifiable intangible assets was the result of two factors: (1) the overall rationale for the transaction, which was to gain entry into the 3D medical image processing market by combining the acquired technology of TGS with that of the Company, in order to move from 2D image processing to an integrated 3D application layer product and offer this product to the Company's existing customers; and (2) the buyer-specific synergies of expected additional revenues and associated profits, resulting from the integration of the Company's and TGS's technology and the exploitation of this technology primarily with the Company's customers.

Moreover, the significant amount of recorded goodwill was in large part due to the fact that TGS was experiencing significant cash flow problems at the acquisition date and had a working capital deficit of $3.7 million. As a result, rather than acquiring net assets, the Company acquired net liabilities of $3.4 million

(excluding intangible assets), which had the direct effect of increasing recorded goodwill by a corresponding amount.

Advanced Radio Corporation

ARC commenced operations in 2002 and is a developer of high-performance radio frequency products used in signals intelligence applications. At the acquisition date, it had three products and employed only six people (including five engineers). In its latest year ended December 31, 2003, it had no revenue and a net loss of $0.5 million. In the subsequent five-month period, ARC had revenue of $0.1 million and a net loss of $0.5 million.

The Company pursued this transaction to access technology complementary to its technology in order to expand the Company's product offerings and protect existing competitive advantages within certain product lines of its Defense Electronics Group. The Company also considered the potential long-term ability to sell additional systems within its defense program offerings as a result of a combined product offering.

Intangible Assets Identified – ARC

Through the intangible asset discovery process described above, the Company identified the following potential intangible assets with respect to the ARC acquisition:

- Patents and patents applied for;
- Completed and unpatented technology;
- Order backlog;
- In-process research and development;
- Customer relationships;
- Trade name; and
- Non-competition agreements.

In addition, the Company considered the possible existence of: (1) licensing agreements; (2) employment contracts; and (3) customer contracts, although the Company noted no evidence of their existence through the Company's process to identify potential intangible assets.

Intangible Assets Valued and Not Valued – ARC

In the final purchase price allocation, the Company did allocate value to certain of the assets listed above as follows:

Intangible Asset	Fair Value (in thousands)
Patents and patents applied for	$ 700
Order backlog	70
	$ 770
In-process research and development:	
Project Homer	$ 400
Project Maggie	100
	$ 500

The Company did not allocate value to the following items, as they were determined to have a *de minimis* or no value for the reasons noted below:

- Customer relationships;
- ARC trade name;
- Non-competition agreements;
- Licensing agreements;
- Employment contracts;
- Customer contracts; and
- Completed and unpatented technology.

Customer Relationships – The Company considered ARC's short operating history and the fact that it had not yet completed any product sales to its short list of customers. Further, the Company noted that it already had relationships with each of ARC's customers and determined that ARC would not enhance these existing relationships. As a result of these factors, the Company believed that this intangible asset had no value.

Trade Name – The Company's due diligence found that there was no significant recognition of the ARC name due to ARC's limited operating history and, therefore, no value was assigned to this intangible asset.

Non-competition Agreements – In connection with the acquisition, all employees of ARC signed non-competition agreements with the Company under which they agreed not to compete against the Company for a period of three years. In assessing the value of the non-competition agreements, the Company considered factors such as the ability, feasibility and desire of employees to compete. In the specific case, the Company concluded that it would be very difficult for an individual to design around the patented technology in a short period of time, and that they would not likely be able to attract necessary financial resources or manufacturing capability. Further, even if an employee were successful in those efforts, it

would take a considerable period of time before they could take market share away from the Company. Moreover, due to the compensation plans that the Company put in place for three key employees that will provide them significant compensation if they remain employed with the Company for a three-year period, the Company believes that the probability of these employees leaving is relatively low. As a result, no value was ascribed to this asset.

Licensing Agreements and Employment Contracts – There were no licensing agreements or employment contracts identified in the due diligence process and, therefore, no value was assigned.

Customer Contracts – Through the due diligence process, it was determined that no customer contracts existed as of the acquisition date, except for the backlog orders that were separately valued.

Completed and Unpatented Technology – While considered, the primary value of ARC's technology is embedded in the patents and patents applied for and, therefore, no separate value was ascribed to this asset.

Valuation Methodology and Assumptions – ARC

For those identified intangible assets that the Company did value as part of the ARC purchase price allocation, the Company determined the fair value of each acquired intangible asset as follows:

Patents and Patents Applied For – The patents and patents applied for comprise the primary technology that is included in ARC's radio frequency equipment. As of the acquisition date, ARC held one patent and had applied for others. These assets were valued using the Income Approach, specifically the relief-from-royalty method. Key assumptions used in this valuation included estimated revenue, the royalty rate for use of the asset, and the discount rate, determined as follows:

- Estimated revenue to be generated from sales of the patented technology was derived from forecasts obtained from ARC's management, which were the same forecasts (representing ARC as a stand-alone business) that were reviewed by the Company's Board of Directors in considering the acquisition. Those forecasts implied average annual revenue growth of 140% through 2007, at which time the growth rate was reduced to 5% and was impacted by an expected attrition rate of 10% through 2011 (the projected end of the patent's economic life), reflecting the expectation that the patented technology will erode over time as ARC adds additional features and functionality in the future that are not present in the existing product.
- A royalty rate of 4% was determined based upon an analysis of royalty transaction data for similar companies and similar technologies. This relatively low rate was deemed reasonable in consideration of the immaturity and limited market acceptance of the technology (i.e., there had been no product sales at the acquisition date).
- A discount rate of 35% was estimated based on ARC's stage of development, the limited market acceptance of the patented technology, and the uncertainty of achieving the expected cash flows.

Order Backlog – As of the acquisition date, ARC had 11 orders in backlog, each of which was expected to be fulfilled within five months. Value attributable to order backlog stems from the future cash flows that will be generated by orders that have already been placed or contracts entered into but not yet completed. The Company used the Income Approach, specifically the DCF method, to value the backlog. Key assumptions used in this valuation included estimated revenue, cost of sales and other operating expenses, and discount rate, determined as follows:

- Estimated revenue to be generated from order backlog was derived from the amount of total backlog as of the acquisition date, reduced by the value of orders included in the valuation of patents and patents applied for to avoid double-counting.
- Cost of sales and operating expenses were estimated to be approximately 65% of revenues, reflecting no costs for selling and marketing as well as research and development, as such efforts had already been completed with respect to these backlog orders.
- A discount rate of 20% was utilized, considering the relative certainty of achieving the expected cash flows.

In-Process Research and Development – The Company considered the AICPA's practice aid to identify and account for IPR&D. Through the due diligence process, the Company identified two in-process research and development projects at the acquisition date: Project Homer and Project Maggie. These projects were classified as IPR&D since they involved significant modification of the design of existing products. As of the acquisition date, product feasibility analysis and product design were being performed, but product development had not commenced. ARC management estimated that approximately 25% of the total development effort remained as of the acquisition date for each project.

To value the IPR&D projects, the Company used the Income Approach, specifically a DCF method, which reflected application of the "multi-period excess earnings method" outlined in the AICPA's practice aid. Key assumptions used in this valuation included estimated revenue, costs to complete development, cost of sales and other operating expenses, and discount rate, determined as follows:

- Estimated revenue was derived from ARC management's forecasts of total revenue to be generated from the IPR&D projects. Based on ARC management's estimates that 25% of development effort still remained on the projects and that 75% of the completed effort resulted principally from the core technology comprising existing products, 25% of the overall projected revenue from the projects was attributed to each of the IPR&D projects, with the remainder of the revenue being attributed to the patented technologies in their valuation.
- Costs to complete development for each project were based on estimates of internal labor cost made by ARC's management.
- Cost of sales and operating expenses were estimated to be approximately 55% of revenues, reflecting only maintenance R&D after project completion. That rate compares to ARC's forecasted overall costs and expenses of approximately 75%, including full R&D costs for new product development.
- A discount rate of 40% was utilized, considering ARC's stage of development, the relative risk of completing development of the projects, and the relative uncertainty of achieving the expected cash

flows. This discount rate was consistent with rates-of-return studies of early-stage companies, highlighted in the AICPA's practice aid.

Unallocated Purchase Price – ARC Goodwill

This transaction resulted in an amount of excess purchase price that was not allocable to any other tangible or intangible assets. From the Company's perspective, the amount of goodwill relates to several factors: (1) the Company's willingness to pay for potential buyer-specific synergies related to market opportunities for combined existing product offering; (2) the Company's ability to protect its existing market position; and (3) the potential to continue developing next-generation technologies from the acquired workforce.

Momentum Computer, Inc.

Momentum is a supplier of quick turn-around design of application-specific processor and high-performance I/O boards for the telecommunications, military and aerospace markets. Momentum is structured to work as an extension of its customers' engineering teams, designing products to meet the specific architectural, environmental, performance and schedule requirements of each customer's project. Momentum has a brief operating history, having commenced operations in 1999. At the time of acquisition, Momentum employed 30 people (including 17 engineers) and for its last year ended December 31, 2003 reported unaudited revenues of approximately $3.3 million and a net loss of $0.7 million. In the subsequent 11-month period, Momentum had unaudited revenue of $7.7 million and net income of $0.3 million.

The Company pursued this transaction to respond to competitive threats from companies and technologies serving the lower-end of the market. Specifically, by making the acquisition, the Company gained a single-board computer provider that successfully competes by leveraging quick turn-around design capabilities, flexible contract terms and low cost. The Company plans to grow Momentum into a productive supplier of rugged boards in addition to serving the Company's existing business units. The Company believes that the Momentum acquisition will also provide the Company with the opportunity to serve broader markets, particularly telecommunications.

Intangible Assets Identified – Momentum

Through the intangible asset discovery process described above, the Company identified the following potential intangible assets with respect to the Momentum acquisition:

- Customer relationships;
- Order backlog;
- Trade names;
- Completed technologies; and

- Non-competition agreements.

In addition, the Company considered the possible existence of: (1) employment contracts; (2) in-process research and development; and (3) licensing agreements, although the Company noted no evidence of their existence through its process to identify potential intangible assets.

Intangible Assets Valued and Not Valued – Momentum

In the final purchase price allocation, the Company did allocate value to certain of the assets listed above as follows:

Intangible Asset	Fair Value (in thousands)
Customer relationships	$ 1,900
Order backlog	549
	$ 2,449

The Company did not allocate value to the following items, as they were determined to have a *de minimis* or no value for the reasons noted below:

- Trade names;
- Completed technologies;
- Non-competition agreements;
- In-process research and development;
- Employment contracts; and
- Licensing agreements.

Trade and Product Names – The Momentum trade name and its product names are relatively new to the market and have minimal to no brand recognition in the broad market, given the size of Momentum and its brief operating history. In addition, no trade names or trademarks have been registered. Therefore, no value was assigned to these assets.

Completed Technologies (Patents and Unpatented Technology) – Momentum does not hold any patents. Momentum's sales are primarily generated from designing customized boards that meet customer specifications and from producing them in limited quantities. While Momentum does offer and sell boards based on its previous custom designs, sales of these products are relatively insignificant in relation to sales of customized boards. Further, Momentum does not engage in significant efforts to create or develop new technologies; its principal focus is to provide low-cost, quick and relatively straightforward board design services to customers. Momentum's customers generally own the intellectual property that results from its efforts, and as a result, Momentum itself possesses very little technology. For these reasons, no value was assigned to this asset.

Non-competition Agreements – In connection with the acquisition, all employees of Momentum signed non-competition agreements with the Company under which employees who leave agree not to compete against the Company for a period of six months. In addition, one employee of Momentum (the former CEO and founder) signed a 36-month non-compete agreement, and six employees of Momentum signed a 24-month non-compete agreement. In assessing the value of the non-competition agreements, the Company considered factors such as the ability, feasibility and desire to compete, as follows:

- Regarding the six-month agreements, no value was assigned, considering the short time period and the low probability of any of these individuals leaving and competing successfully against the Company.
- Regarding the one 36-month agreement, the Company concluded that there is very low incentive for the employee to compete against the Company, considering that: (1) the individual was the single-largest and the majority stockholder of Momentum and, as such, received a significant portion of the total purchase price the Company paid for the acquisition; and (2) the individual stands to receive significant additional cash payments in the form of an earn-out if Momentum achieves targeted operating results over the 24-month period following the acquisition date, both of which should reduce the individual's desire to compete. Consequently, no value was ascribed to the 36-month agreement.
- Regarding the six 24-month agreements, the Company concluded that there is a low probability of any individual successfully competing against the Company since Momentum's existing design wins limit competition for 12 to 24 months. Further, the Company believes that there is low incentive for the employees to compete against the Company, considering that they stand to receive considerable additional cash payments in the form of an earn-out if Momentum achieves targeted operating results over the 24-month period following the acquisition date. As a result, no value was ascribed to the 24-month agreements.

In-Process Research and Development – Based upon discussions with Momentum's management and review of its product development calendar, the Company determined that any of its research activities, of which there were few, were still in the conceptualization phase (as described in the AICPA practice aid) and did not qualify for in-process research and development. Therefore, no value was assigned to this asset.

Employment Contracts – No existing employment contracts were identified in the Company's acquisition due diligence, and the Company did not enter into any new employment contracts with employees of Momentum hired as part of the acquisition. Consequently, no value was assigned.

Licensing Agreements – No existing vendor licensing agreements were identified in the Company's acquisition due diligence and, therefore, no value was assigned.

Valuation Methodology and Assumptions – Momentum

For those identified intangible assets that the Company did value as part of the Momentum purchase price allocation, the Company determined the fair value of each acquired intangible asset as follows:

Customer Relationships – The Company used the Income Approach, specifically the DCF method, to value the customer relationships of Momentum. Key assumptions used in this valuation included estimated revenue, cost of sales and other operating expenses, and discount rate, determined as follows:

- Estimated revenue to be generated from existing customer relationships was based on Momentum management's forecasts of revenue to be derived from the 14 design wins received prior to the acquisition date, as projected from 2004 through 2010. Those projections implied an average annual growth rate of 75% through 2007, which compares to the historical growth rate of 62% from 2001 to 2004. In addition, the projected revenues were adjusted downward by 30% based on findings of the Company's due diligence team with respect to the validity of the target's revenue projections, and reflect estimated annual customer attrition ranging from 0% in 2004 to 100% in 2010, since revenues are dependent on these customers continuing to outsource board fabrication. Further, revenue from customer relationships was reduced for the value of design win orders that were included in the Company's valuation of order backlog (described below), to avoid double-counting of revenues.
- Cost of sales and operating expenses were estimated to be approximately 89% of revenue based upon discussions with Momentum's management and its historical results. The 89% compares closely with Momentum's total costs of 93% incurred for 2004.
- A discount rate of 20% was selected based on the 18% WACC for Momentum, adjusted for the risks associated with intangible assets relative to the business enterprise.

Order Backlog – As of the acquisition date, Momentum had 44 orders in backlog, expected to be fulfilled within four months. The Company used the Income Approach, specifically the DCF method, to value the backlog. Key assumptions used in this valuation included estimated revenue, cost of sales and other operating expenses, and discount rate, determined as follows:

- Estimated revenue to be generated from order backlog was derived from the amount of total backlog as of the acquisition date.
- Cost of sales and operating expenses were estimated to be approximately 71% of revenues, reflecting no costs for selling and marketing as well as research and development, as such efforts had already been completed with respect to these backlog orders.
- A discount rate of 18% was utilized, equaling the WACC for Momentum, considering the relative certainty of achieving the expected cash flows.

Unallocated Purchase Price – Momentum Goodwill

This transaction resulted in an amount of purchase price that exceeded the estimated fair values of tangible and intangible assets, which was allocated to goodwill. The Company believes that the high amount of goodwill relative to identifiable intangible assets was the result of several factors: (1) the Company's ability to gain protection against competition and to mitigate loss of market share at the low end of the market through expanded product and service offerings; (2) the Company's intentions to utilize its financial stability and market presence to attract new customers that are not currently customers of Momentum; and (3) buyer-related synergies resulting from the Company's leverage of its sales force and intellectual property to attract new contracts and revenue.

Supplementary Information (Unaudited) – Page 67

Comment 2:

Please supplementally describe the factors responsible for the 30% increase in revenues in the fourth quarter of 2004.

Response 2:

Revenues for the fourth quarter of 2004 increased 30% to $59.1 million compared to revenues of $45.4 million in the third quarter of 2004. The Company supplementally advises the Staff that the $13.7 million increase in revenues was due to the following factors:

- Defense Electronics Group revenues increased $16.0 million as a result of specific customer order patterns relative to the third quarter of 2004.
- Offsetting the $16.0 million sequential growth within the Defense Electronics Group from the third quarter of 2004 to the fourth quarter of 2004 was a decline of $0.5 million in revenues within the Imaging and Visualization Solutions Group, and a decline of $1.9 million in revenues within the OEM Solutions Group. Both declines were the result of order patterns of the respective customers of those groups relative to the third quarter.

The Company is an OEM supplier to its commercial markets and conducts business with its defense customers via commercial off-the-shelf distribution, which means that product requests are a primary driver of revenue fluctuations from quarter to quarter. Customers specify delivery date requirements that coincide with their need for product. Because these customers may use the Company's products in connection with a variety of defense programs or other projects with different sizes and durations, a customer's orders for one quarter generally do not indicate a trend for future orders by that customer. Additionally, order patterns of one customer do not necessarily correlate with the order patterns of

another customer and, therefore, the Company generally cannot identify sequential quarterly trends, even within business units.

Moreover, as has been the case over the past two years, in any given reporting period there are approximately five customers who represent sales of 10% or more, and the top five customers typically represent approximately 50% or more of total revenues. Thus, the Company's total revenues fluctuate from period to period based on the timing of orders from a relatively small number of large customers. The composition of these top customers varies from period to period between approximately six to eight customers, generally with no discernable trend in their order patterns.

Item 9A. Controls and Procedures – Page 68

Comment 3:

We note management's conclusion that as of June 30, 2004, the disclosure controls and procedures are effective "to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to [the CEO and CFO] by others within the Company and its consolidated subsidiaries." This conclusion contains an inappropriate qualification as to the effectiveness of your disclosure controls and procedures. Please revise your filing to limit your conclusion to state simply whether the disclosure controls and procedures were effective. However, if you elect to retain qualifying language in your disclosure, revise so that the language is fully consistent with the definition of disclosure controls and procedures contained in Rule 13a-15(e).

Response 3:

In response to the Staff's comment, the Company will revise its disclosure regarding the effectiveness of its disclosure controls and procedures as of June 30, 2004, in an amendment to the Form 10-K to read as follows:

> "The Company conducted an evaluation under the supervision and with the participation of the Company's management, including the Company's Chief Executive Officer and Chief Financial Officer (its principal executive officer and principal financial officer, respectively), regarding the effectiveness of the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this report. Based on such evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the Company's disclosure controls and procedures are effective to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms."

Form 10-Q as of December 31, 2004

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Results of Operations – Page 14

Comment 4:

We note that revenues declined from $59.1 million in the fourth quarter of 2004 to $55.0 million in the first quarter of 2005. More specifically, we note revenues in your Defense Electronics Group declined from $42.8 million in the fourth quarter of 2004 to $31.0 million in the first quarter of 2005, while revenues in your OEM Solutions Group increased from $7.4 million in the fourth quarter of 2004 to $13.5 million in the first quarter of 2005. Given the significance of these changes, we believe they should be addressed in Management's Discussion and Analysis. Specifically, you should discuss any material trends that may exist in the business. For example, is the decline in revenues for DEG indicative of a trend that may also impact your future results? Please respond supplementally and revise future filings to include discussion of such changes as appropriate.

Response 4:

The Company supplementally advises the Staff that the decrease in Defense Electronics Group revenues from $42.8 million in the fourth quarter of 2004 to $31.0 million in the first quarter of 2005 resulted primarily from the comparative strength of demand of customer orders in the fourth quarter relative to the first quarter. Within the Company's OEM Solutions Group, product requests from the Company's largest semiconductor application customer were a key driver of the increase in revenues from $7.4 million in the fourth quarter of 2004 to $13.5 million in the first quarter of 2005.

As indicated in the Company's response to comment no. 2 above, the Company's revenues fluctuate from period to period primarily based on product requests from a relatively small group of large customers, generally with no discernable trends in order patterns. As such, the Company does not believe that the sequential changes in revenues in its Defense Electronics and OEM Solutions Groups from the fourth quarter of 2004 to the first quarter of 2005 were indicative of any trends that may impact the Company's future results.

To the extent that there are significant changes in sequential quarter operating results in the future, the Company will include a discussion of such changes (including any known material trends) in its future filings as appropriate.

Item 4. Controls and Procedures – Page 29

Changes in Internal Control over Financial Reporting – Page 29

Comment 5:

We note your disclosure that "there was no change in [your] internal control over financial reporting during [your] first fiscal quarter that has materially affected, or is reasonably likely to materially affect, [your] internal control over financial reporting." You do not indicate if there were any changes to your internal controls over financial reporting that occurred with your evaluation during your most recent fiscal quarter. Please revise to disclose if you had any changes occur in your internal controls over financial reporting that occurred during your second fiscal quarter of 2005. Refer to Item 308(c) of Regulation S-K.

Response 5:

The Company supplementally advises the Staff that there was no change in the Company's internal control over financial reporting during its second fiscal quarter of 2005 that materially affected, or was reasonably likely to materially affect, its internal control over financial reporting. The Form 10-Q contained a typographical error referencing the Company's first fiscal quarter of 2005, instead of the applicable second quarter. In response to the Staff's comment, the Company will revise the disclosure accordingly in an amendment to the Form 10-Q.

Comment 6:

We note your statement that a "control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the internal control system are met." Please revise to state clearly, if true, that your disclosure controls and procedures are designed to provide reasonable assurance of achieving their objectives and that your principal executive officer and principal financial officer concluded that your disclosure controls and procedures are effective at that reasonable assurance level. In the alternative, remove the reference to the level of assurance of your disclosure controls and procedures. Please refer to Section II.F.4 of Management's Reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports, SEC Release No. 33-8238, available on our website at http://www.sec.gov/rules/final/33-8238.htm.

Response 6:

In response to the Staff's comment, the Company will remove the reference to the level of assurance of its disclosure controls and procedures in an amendment to the Form 10-Q.

* * * * *

As requested in the Comment Letter, the Company acknowledges that:

- The Company is responsible for the adequacy and accuracy of the disclosure in the filings;
- Staff comments or changes to disclosure in response to Staff comments in the filings reviewed by the Staff do not foreclose the Commission from taking any action with respect to the filing; and
- The Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

If you should have any questions concerning the enclosed matters, please contact the undersigned at (978) 256-1300.

Very truly yours,

/s/ Robert E. Hult
Robert E. Hult
Senior Vice President and Chief Financial Officer

cc: Martin James
Kevin Vaughn
Securities and Exchange Commission
Lisa R. Haddad
Goodwin Procter LLP
Michael D. Poirier
PricewaterhouseCoopers LLP