AeroVironment Inc
Form 10-K
June 22, 2011

Table of Contents

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

ý **Annual Report Under Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the fiscal year ended April 30, 2011

o **Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the transition period from to
Commission file number 001-33261

AEROVIRONMENT, INC.

(Exact name of registrant as specified in its charter)

Delaware	**95-2705790**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
181 W. Huntington Drive, Suite 202 **Monrovia, CA**	**91016**
(Address of Principal Executive Offices)	(Zip Code)

Registrant's telephone number, including area code: **(626) 357-9983**

Securities registered pursuant to Section 12(b) of the Act:

Title of Class	**Name of each exchange on which registered**
Common Stock, par value $0.0001 per share	**The NASDAQ Stock Market LLC**

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes o No ý

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes o No ý

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ý No o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes o No o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ý

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check One):

Large accelerated filer o	Accelerated filer ý	Non-accelerated filer o (Do not check if a smaller reporting company)	Smaller reporting company o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes o No ý

The aggregate market value of the voting stock held by non-affiliates of the registrant, based on the closing price on the NASDAQ Global Select Market on October 30, 2010 was approximately $413.3 million.

As of June 10, 2011, the issuer had 22,057,784 shares of common stock, par value $0.0001 per share, issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the conclusion of the registrant's fiscal year ended April 30, 2011, are incorporated by reference into Part III of this Form 10-K.

Table of Contents

AEROVIRONMENT, INC.
INDEX TO FORM 10-K

1

Table of Contents

PART I

Forward-Looking Statements

This Annual Report on Form 10-K, or Annual Report, contains forward-looking statements, which reflect our current views about future events and financial results. We have made these statements in reliance on the safe harbor created by the Private Securities Litigation Reform Act of 1995 (set forth in Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act). Forward-looking statements include our views on future financial results, financing sources, product development, capital requirements, market growth and the like, and are generally identified by terms such as "may," "will," "should," "could," "targets," "projects," "predicts," "contemplates," "anticipates," "believes," "estimates," "expects," "intends," "plans" and similar words. Forward-looking statements are merely predictions and therefore inherently subject to uncertainties and other factors which could cause the actual results to differ materially from the forward-looking statement. These uncertainties and other factors include, among other things:

- unexpected technical and marketing difficulties inherent in major research and product development efforts;
- availability of U.S. government funding for defense procurement and research and development programs;
- the extensive regulatory requirements governing our contracts with the U.S. government and the results of any audit or investigation of our compliance therewith;
- the potential need for changes in our long-term strategy in response to future developments;
- unexpected changes in significant operating expenses, including components and raw materials;
- changes in the supply, demand and/or prices for our products;
- increased competition, including from firms that have substantially greater resources than we have;
- changes in the regulatory environment; and
- general economic and business conditions in the U.S. and elsewhere in the world.

Set forth below in Item 1A, "Risk Factors" are additional significant uncertainties and other factors affecting forward-looking statements. The reader should understand that the uncertainties and other factors identified in this Annual Report are not a comprehensive list of all the uncertainties and other factors that may affect forward-looking statements. We do not undertake any obligation to update or revise any forward-looking statements or the list of uncertainties and other factors that could affect those statements.

Item 1. Business.

Overview

We design, develop, produce and support a technologically-advanced portfolio of products and services. We supply unmanned aircraft systems, or UAS, and related services primarily to organizations within the U.S. Department of Defense, or DoD. We also supply charging systems and services for electric vehicles, or EVs and power cycling and test systems to commercial, consumer and government customers. We derive the majority of our revenue from these business areas and we believe that the markets for these solutions have significant growth

potential. Additionally, we believe that some of the innovative potential products in our research and development pipeline will emerge as new growth platforms in the future, creating additional market opportunities.

Table of Contents

The success we have achieved with our current products stems from our investment in research and development and our ability to invent and deliver advanced solutions, utilizing our proprietary technologies, to help our government, commercial and consumer customers operate more effectively and efficiently. Our core technological capabilities, developed through 40 years of innovation, include lightweight aerostructures, power electronics, electric propulsion systems, efficient electric power generation and storage systems, high-density energy packaging, miniaturization, controls integration and systems engineering optimization.

Our UAS business segment focuses primarily on the design, development, production and support of innovative UAS that provide situational awareness and other mission effects to increase the security and effectiveness of our customers' operations. Our Efficient Energy Systems, or EES, business segment focuses primarily on the design, development, production and support of innovative efficient electric energy systems that address the growing demand for electric transportation solutions.

Our Strategy

As a technology solutions provider, our strategy is to develop innovative new solutions that enable us to create new markets or market segments, gain market share and grow as market adoption increases. We believe that by introducing new solutions that provide customers with compelling value we are able to create new markets or market segments and then grow our positions within those markets or market segments profitably, instead of competing in existing markets against large, incumbent competitors.

We intend to grow our business by maintaining market leadership for UAS, electric vehicle charging systems and power cycling and test systems, and by creating new solutions that enable us to enter and lead new markets. Key components of this strategy include the following:

Expand our current solutions to existing and new customers. Our small UAS, electric vehicle charging systems and power cycling and test systems are leading solutions in their respective markets. We intend to increase the penetration of our small UAS products and services within the U.S. military, the military forces of allied nations and non-military customers. We believe that the continued adoption of our small UAS by the U.S. military will continue to spur demand by allied countries, and that our efforts to pursue new applications will help to create opportunities beyond the military market we currently serve. We similarly intend to increase the penetration of our electric vehicle charging systems and services, and our power cycling and test systems, into existing and new customer segments in North America and globally.

Deliver innovative new solutions. Innovation is the primary driver of our growth. We plan to continue research and development efforts to develop better, more capable products, services and business models, both in response to and in anticipation of emerging customer needs. In some cases these innovations result in upgrades to existing offerings, expanding their value among existing customers and markets. In other cases these innovations become entirely new solutions that position us to address new markets, customers and business opportunities. We believe that by continuing to invest in research and development we will continue to deliver innovative new products and services that address market needs within and outside of our current target markets, enabling us to create new opportunities for growth.

Foster our entrepreneurial culture and continue to attract, develop and retain highly-skilled personnel. We have created a company culture that encourages innovation and an entrepreneurial spirit, which helps to attract and retain highly-skilled professionals. We intend to maintain this culture to encourage the development of the innovative, highly technical system solutions and business models that give us our competitive advantage. A core component of our culture is the demonstration of trust

Table of Contents

and integrity in all of our interactions, contributing to a positive work environment and engendering loyalty among our employees and customers.

Preserve our agility and flexibility. We are able to respond rapidly to evolving markets, solve complicated customer problems, and deliver new products and system capabilities quickly, efficiently and affordably. We believe this ability helps us to strengthen our relationships with customers and partners. We intend to maintain our agility and flexibility, which we believe to be important sources of differentiation when we compete against organizations with more extensive resources.

Effectively manage our growth portfolio. Our production and development programs and services provide us with numerous investment opportunities that we believe will support our long-term growth. Each opportunity is evaluated independently and within the context of all other investment opportunities to determine its relative priority. This process ensures that we allocate resources based on relative risks and returns to maximize long-term return on investment, which is a key element of our growth strategy.

Market Opportunity, Requirements and Solutions Summary

We develop innovative solutions that target potentially large, emerging market opportunities related to two growing, global trends: the increasing economic and security value of network-centric, intelligence, surveillance, reconnaissance and communications solutions; and the increasing economic, environmental and energy security value of electric transportation solutions. We believe that our focus on these trends constitutes important work that will benefit our company, stockholders, employees and community. The following table provides a summary of the market opportunities we pursue, the market requirements we satisfy and solutions we develop:

Market Opportunity	Primary Market Requirements	Our Solutions
	UAS Products	
Man-portable airborne intelligence, surveillance and reconnaissance, or ISR, tools for the rapid acquisition of tactical situational awareness within 20 kilometers	Minimum size, weight and volume for rucksack or vehicle carriage	Puma, Raven® and Wasp small UAS systems:
	High reliability and robust performance in various operating environments	Battery-powered with an electric motor, each aircraft produces minimal audio signature and is designed for ruggedness
	Day and night video sensors	Onboard sensors stream live color or infrared video wirelessly to a monitor integrated into a hand-held ground control unit
	Quiet operation	Operated from a common and interoperable ground control system
	Operation via hand-held controller	Supported by spare parts, repair and training services
		Offered as hardware or through turnkey flight services

Table of Contents

Market Opportunity	Primary Market Requirements	Our Solutions
Rapidly deployable mesh network for tactical video, voice, data and text communications	Signal encryption	Digital Data Link, or DDL:
	Multiple available communications channels	Small, lightweight, low power, wireless video link
	Lightweight, small, low power consumption	Bi-directional, digital; enables enhanced command and control of small UAS
		Internet protocol-based for maximum flexibility and interoperability between small airborne and ground systems
		Efficient use of bandwidth maximizes the number of systems that can reliably operate within an area
	EES Products	
Charging infrastructure for plug-in electric vehicles entering the global automotive market	Designed for safety and reliability	Passenger and Fleet Electric Vehicle Charging Systems:
	Standards-based solutions for home and public charging	240-volt "Level 2" charging systems and a variety of three-phase, 480-volt "Level 3," DC, or fast charging systems for fleet and public charging that range from 10 kilowatts to 250 kilowatts
	Data and communications networking to integrate with smart grid and various business models	Geographically broad, qualified network of licensed electrical contractors for installation and support services
		Infrastructure tools for web-based integration with partners and service providers
Charging infrastructure for plug-in electric industrial materials handling vehicles	Designed for safety and reliability	PosiCharge Industrial Electric Vehicle Charging Systems:
	Support multiple vehicle and battery types	Broad range of solutions for different vehicle duty cycles
	Economically scalable based on vehicle usage	Standard connector interface to support multiple vehicles and battery types

	Data and communications network for reporting and trouble-shooting

Table of Contents

Market Opportunity	Primary Market Requirements	Our Solutions
		Fast, opportunity and conventional charging rates for multiple user types and operational requirements
Test systems for electric vehicle developers, battery manufacturers, and electric energy research and development activities	Programmable, robust	Power Cycling and Test Systems:
	Multiple DC power levels for multiple test regimes	Programmable simulation of duty cycles for lifecycle testing electric vehicles, battery packs and components
	Designed for safety and reliability	Source and sink for electrical loads
		Returns electricity delivered by test items to the grid
	UAS Development Programs	
Organic, high-precision non-line-of-sight strike capability for dismounted forces	Man-portable, rapidly deployable	Switchblade :
	Precise, lower probability for collateral damage	Backpack-able, tube-launched, loitering munition
		Unfolds tandem wings upon ejection from launch tube and transmits streaming video from an onboard sensor
		Operator identifies and designates target using ground control unit monitor
		Aircraft autonomously guides itself to the target, with high precision and lower probability for collateral damage
		Can be launched from a variety of air and ground platforms
Affordable, high altitude long endurance platforms for wide area ISR and communications	Seamless remote sensing and communications platform	Global Observer :
	Less costly than satellites and existing manned and unmanned aircraft systems	Hydrogen-powered, hybrid-electric propulsion system provides more energy per unit of weight than conventional fuels to maximize endurance

No latitude restrictions	Composite airframe reduces weight while maintaining structural strength
Rapid turnaround	
Deployable from outside combat areas	

Table of Contents

Market Opportunity	Primary Market Requirements	Our Solutions
	Capacity sufficient for existing payloads	Up to one week flight duration at up to 65,000 feet in altitude
		A system, consisting of at least two aircraft trading positions over a designated geographic area, to provide continuous coverage an unblinking eye at a significantly lower cost than available alternatives

Customers

We sell the majority of our UAS products and services to organizations within the DoD, including the U.S. Army, Marine Corps, Special Operations Command and Air Force. Our EES business segment generates revenue from commercial, consumer and, to a lesser extent, government customers.

During our fiscal year ended April 30, 2011, approximately 48% of our sales were made to the U.S. Army pursuant to orders made under contract by the U.S. Army on behalf of itself as well as several other organizations within the DoD. Other U.S. government agencies and government subcontractors accounted for 35% of our sales revenue, while purchases by foreign, commercial customers and consumers accounted for the remaining 17% of sales revenue during our fiscal year ended April 30, 2011.

Technology, Research and Development

Technological Competence and Intellectual Property

The innovations developed by our company and our founder include, among others: the world's first effective human-powered and manned solar-powered airplanes; the first modern passenger electric car, the EV1 prototype for General Motors; the world's highest flying airplane in level flight, Helios, a solar-powered UAS that reached over 96,000 feet in 2001; and, more recently, Global Observer, the world's first liquid hydrogen-fuelled UAS. The Smithsonian Institution has selected seven vehicles developed by us or our founder for its permanent collection. Our history of innovation excellence is the result of our creative and skilled employees whom we encourage to invent and develop new technologies.

Our company was founded by the late Dr. Paul B. MacCready, the former Chairman of our board of directors and an internationally renowned innovator who was instrumental in establishing our entrepreneurial and creative culture. This culture has enabled us to consistently attract and retain highly-motivated, talented employees and has established our reputation as an innovative leader in the industries in which we compete.

A critical component of our ongoing innovation is a screening process that helps our business managers identify early market needs, which assists us in making timely investment into critical technologies necessary to develop solutions to address these needs. Similarly, we manage new product and business concepts through a commercialization process that balances spending, resources, time and intellectual property considerations against market requirements and potential returns on investment. Strongly linking our technology and business development activities to customer needs in attractive growth markets is an important element of this process. Throughout the process we revalidate our

Table of Contents

customer requirement assumptions to help ensure that the products and services we ultimately deliver are of high value.

As a result of our commitment to research and development, we possess an extensive portfolio of intellectual property in the form of patents, trade secrets, copyrights and trademarks across a broad range of UAS and advanced energy technologies. As of April 30, 2011, we had 65 U.S. patents issued; 74 U.S. patent applications pending; 31 active Patent Cooperation Treaty applications; and numerous foreign patents and applications. In many cases, when appropriate and to preserve confidentiality, we opt to protect our intellectual property through trade secrets as opposed to filing for patent protection.

The U.S. government has licenses to some of our intellectual property that is specifically developed in performance of government contracts, and may use or authorize others to use this intellectual property. In some cases we internally fund the development of certain intellectual property to maximize its value and limit potential competitors from utilizing it. While we consider the development and protection of our intellectual property to be integral to the future success of our business, at this time we do not believe that a loss or limitation of rights to any particular piece of our intellectual property would have a material adverse effect on our overall business.

Research, Development and Commercialization Projects

A core component of our business strategy is the development and commercialization of innovative solutions that we believe can become new products and enable us to enter large new markets or accelerate the growth of our current products. We invest in an active pipeline of these commercialization projects that range in maturity from technology validation to early market adoption. We cannot predict when, if ever, these projects will be successfully commercialized, or the exact level of capital expenditures they could require, which could be substantial. In our fiscal year 2011, we began to transition elements of our passenger and fleet electric vehicle charging systems offering from the development stage to the production stage as passenger electric vehicles became available to consumers.

For the fiscal years ended April 30, 2011, 2010 and 2009, our internal research and development spending amounted to 12%, 10% and 9%, respectively, of our revenue, and customer-funded research and development spending amounted to an additional 12%, 32% and 27%, respectively, of our revenue.

Sales and Marketing

Our marketing strategy is to increase awareness of our brand among key target market segments and to be associated with innovation, flexibility, agility and the ability to deliver reliable new technology solutions that improve customer operational effectiveness and efficiency within these segments. Our reputation for innovation is a key component of our brand and has been acknowledged through a variety of awards and recognized in numerous articles in domestic and international publications. We have registered the trademarks for AeroVironment, PosiCharge, Global Observer and Raven and have submitted several other applications for trademark registration, including those for the AeroVironment logo, EV Solutions , GO and Switchblade .

International Sales

We are increasing our sales efforts abroad and have contracted with international sales representatives for our business segments in a number of foreign markets. Our international sales accounted for approximately 7% of our revenue for the fiscal years ended April 30, 2011, 2010 and 2009.

Table of Contents

Competition

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.

Manufacturing and Operations

We pursue a lean and efficient manufacturing system strategy across our business segments, focusing on rapid prototyping, supply chain management, final assembly, integration, quality and final acceptance testing. Using concurrent engineering techniques within an integrated product team structure, we rapidly prototype design concepts and products while optimizing our designs for manufacturing requirements, mission capabilities and customer specifications. Within this framework we develop our products with feedback and input from manufacturing, quality, supply chain management, key suppliers, logistics personnel and customers. We rapidly incorporate this input into product designs to ensure maximum efficiency and quality in our products. 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.

We outsource certain production activities, such as the fabrication of structures, the manufacture of subassemblies and payloads and the production of certain of our EV charging products, to qualified suppliers, many of whom we have long-term relationships with. This outsourcing enables us to focus on final assembly system integration, and test processes for our products, ensuring high levels of quality and reliability. We believe that our efficient supply chain is a significant strength of our manufacturing strategy. We have forged strong relationships with key suppliers based on their ability to grow with our manufacturing needs and support our growth plans. We continue to expand upon our suppliers' expertise to improve our existing products and develop new solutions. We rely on both single and multiple suppliers for certain components and subassemblies. See "Risk Factors If critical components of our products that we currently purchase from a small number of suppliers or raw materials used to manufacture our products become scarce or unavailable, then we may incur delays in manufacturing and delivery of our products, which could damage our business" for more information. All of our production system operations incorporate internal and external quality programs and processes to increase acceptance rates, reduce lead times and lower cost.

Contract Engineering Services

We actively pursue internally and externally funded projects that help us to strengthen our technological capabilities. Our UAS business segment submits bids to large research customers such as the Defense Advanced Research Projects Agency, the U.S. Air Force, the U.S. Army and the U.S. Special Operations Command for projects that we believe have future commercial application. Contract engineering services conducted through our EES business segment represent a strategic source of innovation for us, and a portion of our business involves providing advanced battery module and pack testing services to automotive manufacturers in support of their electric and hybrid electric vehicle development programs. Providing these services contributes to the development and enhancement of our technical competencies. In an effort to manage the ability of our key technical personnel to support multiple, high-value research and development initiatives, we attempt to limit the volume of contract engineering projects that we accept. This process enables us to focus these personnel on projects we believe offer the greatest current and future value to our business.

Table of Contents

Contract Mix

The table below shows our revenue for the periods indicated by contract type, including both government and commercial sales:

	Fiscal Year Ended April 30,					
	2011		2010		2009	
Fixed-price contracts	69	%	59	%	59	%
Cost reimbursable contracts	30	%	40	%	40	%
Time-and-materials contracts	1	%	1	%	1	%

Employees

As of April 30, 2011, we had 768 full-time employees, of whom 281 were in research and development and engineering, 71 were in sales and marketing, 278 were in operations and 138 were general and administrative personnel. We believe that we have a good relationship with our employees.

Backlog

We define funded backlog as unfilled firm orders for products and services for which funding currently is appropriated to us under the contract by the customer. As of April 30, 2011 and April 30, 2010, our funded backlog was approximately $82.9 million and $72.3 million, respectively. We expect that 94% of our funded backlog will be filled during our fiscal year ending April 30, 2012.

In addition to our funded backlog, we had unfunded backlog of $230.8 million and $269.4 million as of April 30, 2011 and April 30, 2010, respectively. We define unfunded backlog as the total remaining potential order amounts under cost reimbursable and fixed price contracts with multiple one-year options, and indefinite delivery, indefinite quantity, or IDIQ contracts. Unfunded backlog does not obligate the U.S. government to purchase goods or services. There can be no assurance that unfunded backlog will result in any orders in any particular period, if at all. Management believes that unfunded backlog does not provide a reliable measure of future estimated revenue under our contracts.

Because of possible future changes in delivery schedules and/or cancellations of orders, backlog at any particular date is not necessarily representative of actual sales to be expected for any succeeding period, and actual sales for the year may not meet or exceed the backlog represented. Our backlog is typically subject to large variations from quarter to quarter as existing contracts expire, or are renewed, or new contracts are awarded. A majority of our contracts, specifically our IDIQ contracts, do not currently obligate the U.S. government to purchase any goods or services. Additionally, all U.S. government contracts included in backlog, whether or not they are funded, may be terminated at the convenience of the U.S. government.

Other Information

AeroVironment, Inc. was originally incorporated in the State of California in July 1971 and reincorporated in Delaware in 2006. In January 2007, we completed an initial public offering which resulted in the issuance of 5,252,285 shares of our common stock at a price of $17.00 per share, resulting in net proceeds to us of approximately $80.5 million, after deducting payment of underwriters' discounts and commissions and offering expenses.

Our principal executive offices are located at 181 W. Huntington Dr., Suite 202, Monrovia, California 91016. Our telephone number is (626) 357-9983. Our website home page on the Internet is *http://www.avinc.com*. We make our website content available for information purposes only. It should not be relied upon for investment purposes, nor is it incorporated by reference into this Form 10-K.

Table of Contents

We make our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and proxy statement for our annual stockholders' meeting, as well as any amendments to those reports, available free of charge through our website as soon as reasonably practical after we electronically file that material with, or furnish it to, the Securities and Exchange Commission, or SEC. You can learn more about us by reviewing our SEC filings. Our SEC reports can be accessed through the investor relations page of our web site at *http://investor.avinc.com*. These reports may also be obtained at the SEC's public reference room at 100 F. Street, N.E., Washington, DC 20549. The SEC also maintains a web site at www.sec.gov that contains reports, proxy statements and other information regarding the Company.

Unmanned Aircraft Systems

Our UAS business segment addresses the increasing economic and security value of network-centric intelligence, surveillance, reconnaissance, or ISR, and communications with innovative UAS solutions.

Industry Background

Small UAS

The market for small UAS has grown significantly over the last several years, initially due to the U.S. military's post-Cold War transformation, and now more directly by the demands associated with the current global threat environment. Following the end of the Cold War, the U.S. military began its transformation into a smaller, more agile force that operates via a network of observation, communication and precision targeting technologies. This transformation accelerated following the terrorist attacks of September 11, 2001, as the U.S. military required improved, distributed observation and targeting of enemy combatants who operate in small groups, often embedded in dense population centers or dispersed in remote locations. We believe that UAS, which range from large systems, such as Northrop Grumman's *Global Hawk* and General Atomics' *Predator*, *Sky Warrior*, *Reaper* and *Grey Eagle*, to small systems, such as our Raven, Wasp and Puma, serve as integral components of this transforming military force. These systems provide critical observation and communications capabilities serving the increasing demand for actionable intelligence, while reducing risk to individual "warfighters." Small UAS can provide real-time observation and communication capabilities to the small units who control them. As we explore opportunities to develop new markets for our small UAS, such as border surveillance, law enforcement, first response and infrastructure monitoring, we expect further growth through the introduction of UAS technology to non-military applications once rules are established for their safe and effective operation in each country's national airspace.

Stratospheric Persistent UAS

We believe a market opportunity exists for UAS that can fly for multiple days to perform continuous remote sensing and communications relay missions in an affordable manner. The emergence of distributed military threats in geographic areas with limited communications infrastructure has prompted U.S. military forces to deploy solutions to manage the increasing volume of data generated by their operations in those areas. Existing solutions such as communications satellites and manned and unmanned aircraft address some of this emerging demand for bandwidth, but do so at relatively high financial and resource costs. Given the nature of asymmetrical warfare, with embedded military adversaries operating in population centers, rural areas and remote locations, the ability to observe areas of interest on a continuous basis with high resolution sensors remains a critical and largely unmet need. Geosynchronous satellites provide fixed, continuous communications relay capabilities to much of the globe, but they operate nearly 25,000 miles from the surface of the earth, therefore limiting the bandwidth they can provide and requiring relatively larger, higher power ground stations. Remote sensing satellites typically operate at lower altitudes, but are unable to maintain geosynchronous

Table of Contents

positions, meaning they are moving with respect to the surface of the earth, resulting in a limited presence over specific areas of interest, and significant periods of time during which they are not present over those areas. UAS that are capable of operating for extended periods of time over an area of interest without gaps in availability while carrying a communications relay or observation payload in an affordable manner could help to satisfy this need.

Loitering Airborne Munitions Systems

The pursuit of weapons capable of rapid deployment and of striking their targets with high precision while minimizing the risk to surrounding civilians, property and the user accelerated in recent years due to advances in enabling technologies. Weapons such as laser-guided missiles, "smart" bombs and GPS-guided artillery shells have dramatically improved the accuracy of strikes against hostile targets. Most of these weapons systems typically are operated by elements of the armed forces that are geographically removed from the target area, requiring advanced planning and coordination to enable their use. When ground forces find themselves engaged in a firefight or near a target, their ability to deploy and use a precision weapon system quickly and easily can mean the difference between mission success and failure. Embedding a lethal payload into a man-portable unmanned aircraft system could provide warfighters with a valuable alternative to existing airborne and land-based munitions systems.

Our UAS Solutions

Small UAS Products

Our small UAS, including Raven, Wasp and Puma, are designed to provide valuable ISR, including real-time tactical reconnaissance, tracking, combat assessment and geographic data, directly to the small tactical unit or individual warfighter, thereby increasing flexibility in mission planning and execution. Our small UAS wirelessly transmit critical live video and other information generated by their payload of electro-optical or infrared sensors directly to a hand-held ground control unit, enabling the operator to view and capture images, during the day or at night, on the control unit. Our ground control systems allow the operator to control the aircraft by programming it for GPS-based autonomous navigation using operator-designated way-points and also provide for manual flight operation. The ground control systems are designed for durability and ease of use in harsh environments and incorporate a user-friendly, intuitive, graphical user interface. All of our small UAS currently in production operate from our common ground control system.

All of our small UAS are designed to be man-portable, assembled without tools in less than five minutes and launched and operated by one person, with limited training required. The efficient and reliable electric motors used in all of our small UAS are powered by replaceable modular battery packs that can be swapped out in seconds, enabling rapid return to flight. All of our small UAS, other than Switchblade, which we consider a loitering munition, are designed to be reusable and can be recovered through an autonomous landing feature that enables a controlled descent to a designated location.

In military applications, our small systems enable tactical commanders to observe around the next corner, to the next intersection or past the ridgeline in real-time. This information facilitates faster, safer movement through urban, rural and mountainous environments and can enable troops to be proactive based on field intelligence rather than reactive. Moreover, by providing this information, our systems reduce the risk to warfighters and to the surrounding population by providing the ability to tailor the military response to the threat. U.S. military personnel regularly use our small UAS, such as Raven, for missions such as force protection, combat observation and damage assessment. These reusable systems are easy to transport, assemble and operate and are relatively quiet when flying at typical operational altitudes of 200 to 300 feet above ground level, the result of our efficient electric propulsion systems. Furthermore, their small size makes them difficult to see from the ground. In addition, the low cost of our small UAS systems relative to larger systems and alternatives makes it practical for customers to deploy these assets directly to warfighters.

Table of Contents

Our small UAS also include spare equipment, alternative payload modules, batteries, chargers, repair services and customer support. We provide training by our highly-skilled instructors, who typically have extensive military experience, and continuous refurbishment and repair services for our products. By maintaining close contact with our customers and users in the field, we gather critical feedback on our products and incorporate that information into ongoing product development and research and development efforts. This approach enables us to improve our solutions in response to, and in anticipation of, evolving customer needs.

Each system in our small UAS portfolio typically includes multiple aircraft, our common and interoperable hand-held ground control system and an array of spare parts and accessories. Our current small UAS portfolio consists of the following aircraft:

Small UAS Product	Wingspan (ft.)	Weight (lbs.)	Recovery	Standard Sensors	Range (mi.)(1)	Flight Time (min.)(1)
Puma	9.2	13.0	Vertical autonomous landing capable (ground or water)	Mechanical pan, tilt, zoom and digital zoom electro-optical and infrared	9.0	120
Raven	4.5	4.2	Vertical autonomous landing capable	Digital zoom electro-optical or infrared	6.0	90
Wasp	2.4	1.0	Horizontal autonomous landing capable	Digital zoom electro-optical and infrared	3.0	45

(1) Represents minimum customer-mandated specifications for all operating conditions. In optimal conditions, the performance of our products may significantly exceed these specifications.

The ground control system is the primary interface between the operator and the aircraft, and allows the operator to control the direction, speed and altitude of the aircraft as well as view the visual information generated by the aircraft through real-time, streaming video. Our ground control system interfaces with each of our air vehicles, providing a common user interface with each of our air vehicles. In addition to the thousands of air vehicles delivered to our customers, thousands of ground control systems are also in our customers' hands.

During fiscal 2011 we began production of new digital Puma systems incorporating our DDL. This transition followed the successful initiation of our digital Raven system and retrofit kit production in fiscal 2010. The result of a successful development program, DDL enhances the capabilities, and ultimately, the utility of our small UAS by enabling more efficient radio spectrum utilization and communications security. Small UAS incorporating our DDL offer many more channels as compared to our analog link, increasing the number of air vehicles that can be operated in a given area. Additionally, our DDL enables each air vehicle to operate as an Internet-Protocol addressable hub capable of routing and relaying video, voice and data to and from multiple other nodes on this *ad hoc* network. This capability will enable beyond line-of-sight operation of our small UAS, further enhancing their value proposition to our customers.

UAS Services

In support of our small UAS we offer a suite of services that help to ensure the successful operation of our products by our customers. These services generate incremental revenue for the company and provide us with continuous feedback to understand the utility of our systems, anticipate our customers' needs and develop additional customer insights. We believe that this ongoing feedback loop enables us to continue to provide our customers with innovative solutions that help them succeed.

Table of Contents

We provide spare parts as well as repair, refurbishment and replacement services through our services operation. We designed our services operation to minimize supply chain delays and provide our customers with spare parts, replacement aircraft and support whenever and wherever they need them. We developed an Internet-accessible logistics system to provide our customers with the status of their returned products and their inventory that we help manage. This secure system also provides recent parts and repairs history and tracks usage data to enable inventory optimization forecasting. One of our facilities also serves as the primary depot for repairs and spare parts.

We provide complete training services to support all of our small UAS. Our highly-skilled instructors typically have extensive military experience. We deploy training teams throughout the continental United States and abroad to support our customers' wide variety of training needs on both production and development-stage systems.

Customers who require the information generated by our small UAS but who may not wish to purchase and operate the equipment themselves can contract with us for turnkey flight operation services. We can deploy our own operators to locations around the world to provide small UAS-generated reconnaissance video and information to support numerous types of missions.

We provide contract engineering services in support of customer-funded research and development projects, delivering new value-added technology solutions to our customers. These types of projects typically involve developing new system solutions and technology or new capabilities to existing solutions that we introduce as retrofits or upgrades. We recognize customer-funded research and development projects as revenue.

We supply our UAS products and services to multiple customers in the United States and beyond. During fiscal 2011, the U.S. Army, our largest customer, increased its projected total demand for our Raven small UAS by 8%, from 2,182 to 2,358 new systems. We had delivered approximately 70% against the new acquisition objective as of April 30, 2011. During fiscal 2011, strong initial adoption of our digital Puma system complemented continued demand for digital Raven systems and UAS services, increasing the diversity of our UAS portfolio. For the fiscal years ended April 30, 2011, 2010, and 2009, our UAS segment products and services accounted for 85%, 90% and 85%, respectively, of our revenue.

UAS Technology, Research and Development

Our primary areas of technological competence represent the sum of numerous technical skills and capabilities that help to differentiate our approach and product offerings. The following list highlights a number of our key UAS technological capabilities:

Lightweight, low speed aerostructures and propeller design;

Miniaturized avionics and micro/nano unmanned aircraft systems;

Image stabilization and target tracking;

Unmanned autonomous control systems;

Table of Contents

Payload integration;

Electric and hydrogen propulsion systems and high-pressure-ratio turbochargers;

Stratospheric flight operations;

Fluid dynamics;

Miniature, low power wireless digital communications; and

System integration and optimization.

Three of our UAS development programs are described below:

Global Observer. Global Observer is our high-altitude, long-endurance UAS under development to address the critical need for affordable, 24-hour, 365-days-a-year persistent communications and ISR. Each Global Observer aircraft is designed to operate at up to 65,000 feet for up to a week before landing. A complete system would include at least two aircraft, one flying over a designated area and the other in preparation or in transit to or from the designated area, which would alternate positions approximately every week to maintain an uninterrupted presence. Global Observer is the continuation of years of research with both our own and U.S. government development funding. The system has been developed and tested under a three-and-one-half-year joint capabilities technology demonstration program, or JCTD, sponsored by several agencies of the U.S. government. We expect the efficiency and endurance, three to four times the longest flight time of existing payload-capable fixed-wing aerial options, of this UAS to provide for dramatically lower operating and total life cycle costs for missions where long distance persistent communications or surveillance is critical. The Global Observer platform is intended to be the low-cost equivalent of a 12-mile-high, redeployable satellite, providing a potential footprint of coverage of up to 600 miles in diameter and capable of providing a broad array of services, including high-speed broadband data, video and voice relay and ISR. We expect these capabilities to provide