

Spirit AeroSystems Holdings, Inc.

Form 424B7

April 12, 2011

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Filed Pursuant to Rule 424(b)(7)
Registration No. 333-173369

CALCULATION OF REGISTRATION FEE CHART

| Title of Each Class of Securities to be Registered | Amount to be Registered | Proposed Maximum Offering Price per Share(1) | Proposed Maximum Aggregate Offering Price(1) | Amount of Registration Fee(2) |
|--|----------------------------|--|--|-------------------------------------|
| Class A Common Stock, par value \$0.01 per share | 11,853,481 Shares | \$ 25.16 | \$ 298,233,581.96 | \$ 34,624.92 |

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) of the Securities Act of 1933, as amended, based upon the average of the high and low sales prices for our class A common stock reported on the New York Stock Exchange on April 7, 2011.

(2) This filing fee of \$34,624.92 is calculated and being paid pursuant to Rule 457(c) and Rule 457(r) of the Securities Act of 1933 and relates to the registration statement on Form S-3 (File No. 333-173369) filed by Spirit AeroSystems Holdings, Inc. on April 7, 2011.

PROSPECTUS SUPPLEMENT
(To prospectus dated April 7, 2011)

10,307,375 Shares

Spirit AeroSystems Holdings, Inc.

Class A Common Stock

All of the shares of class A common stock in this offering are being sold by the selling stockholders identified in this prospectus supplement, primarily affiliates of Onex Corporation and members of management of the issuer. We will not receive any of the proceeds from this offering.

The class A common stock is listed for trading on the New York Stock Exchange under the symbol SPR. The last reported sale price of the class A common stock on April 8, 2011 was \$24.03 per share.

Investing in our common stock involves risks. See Risk Factors on page S-6 of this prospectus supplement.

The underwriter will purchase the common stock from the selling stockholders at a price of \$24.49 per share, resulting in \$252 million aggregate proceeds to the selling stockholders.

The underwriter may offer the shares of our class A common stock from time to time to purchasers directly or through agents, or through brokers in brokerage transactions on the New York Stock Exchange, or to dealers in negotiated transactions or in a combination of such methods of sale, at a fixed price or prices, which may be changed, or at market prices prevailing at the time of sale, at prices related to such prevailing market prices or at negotiated prices. See Underwriting.

To the extent that the underwriter sells more than 10,307,375 shares of class A common stock, the underwriter has the option to also purchase up to an additional 1,546,106 shares of class A common stock from the selling stockholders at a price of \$24.49 per share, within 30 days from the date of this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus are truthful or complete. Any representation to the contrary is a criminal offense.

The underwriter will deliver the shares on or about April 13, 2011.

MORGAN STANLEY

The date of this prospectus supplement is April 11, 2011.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus are part of a registration statement that we filed with the Securities and Exchange Commission (the "SEC") using a shelf registration process, under which our stockholders may offer shares of class A common stock from time to time. Under the shelf registration rules, using this prospectus supplement and the accompanying prospectus, our stockholders, including those identified in this prospectus supplement, may sell, from time to time, the class A common stock covered by this prospectus supplement and its accompanying prospectus in one or more offerings.

This prospectus supplement and the accompanying prospectus include important information about us, our class A common stock and other information you should know before investing. We urge you to read carefully this entire prospectus supplement and the accompanying prospectus, together with the information described under the headings "Incorporation of Certain Information by Reference" and "Where You Can Find More Information" in this prospectus supplement and the accompanying prospectus.

You should rely only on the information contained in or incorporated by reference in this prospectus supplement and the accompanying prospectus. We have not, and the underwriter has not, authorized anyone to provide you with different or additional information. The selling stockholders are not, and the underwriter is not, making an offer of these securities in any jurisdiction where the offer is not permitted. You should assume that the information contained in this prospectus supplement, the accompanying prospectus and the documents we incorporate by reference is accurate only as of its respective date or on the date which is specified in those documents. Our business, financial condition, results of operations and prospects may have changed since these dates.

Unless otherwise indicated, all information in this prospectus supplement assumes the underwriter's option to purchase additional shares will not be exercised.

INDUSTRY AND MARKET DATA

This prospectus supplement includes industry data that we obtained from publicly available sources and periodic industry publications and analyses from industry consultants.

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CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying prospectus include certain forward-looking statements that involve many risks and uncertainties. When used, words such as anticipate, believe, continue, estimate, expect, forecast, intend, may, plan, project, should, will and other similar words or phrases, or the negative thereof, unless the context requires otherwise, are intended to identify forward-looking statements. These statements reflect management's current views with respect to future events and are subject to risks and uncertainties, both known and unknown. Our actual results may vary materially from those anticipated in forward-looking statements.

Important factors that could cause actual results to differ materially from those reflected in such forward looking statements and that should be considered in evaluating our outlook include, but are not limited to, the following:

our ability to continue to grow our business and execute our growth strategy, including the timing and execution of new programs;

our ability to perform our obligations and manage costs related to our new commercial and business aircraft development programs and the related recurring production;

potential reduction in the build rates of certain Boeing aircraft including, but not limited to, the B737 program, the B747 program, the B767 program and the B777 program, and build rates of the Airbus A320 and A380 programs, which could be negatively impacted by continuing weakness in the global economy and economic challenges facing commercial airlines, and by lack of business and consumer confidence and the impact of continuing instability in the global financial and credit markets, including, but not limited to, sovereign debt concerns in Europe;

the inability to resolve significant claims with Boeing related to non-recurring and recurring costs on the B787 program;

declining business jet manufacturing rates and customer cancellations or deferrals as a result of the weakened global economy;

the success and timely execution of key milestones such as certification and delivery of Boeing's new B787 and Airbus' new A350 XWB (Xtra Wide-Body) aircraft programs, including first flight for the Airbus A350 XWB, receipt of necessary regulatory approvals and customer adherence to their announced schedules;

our ability to enter into supply arrangements with additional customers and the ability of all parties to satisfy their performance requirements under existing supply contracts with Boeing and Airbus, our two major customers, and other customers and the risk of nonpayment by such customers;

any adverse impact on Boeing's and Airbus' production of aircraft resulting from cancellations, deferrals or reduced orders by their customers or from labor disputes or acts of terrorism;

any adverse impact on the demand for air travel or our operations from the outbreak of diseases or epidemic or pandemic outbreaks;

returns on pension plan assets and the impact of future discount rate changes on pension obligations;

our ability to borrow additional funds or refinance debt;

competition from original equipment manufacturers and other aerostructures suppliers;

the effect of governmental laws, such as U.S. export control laws and anti-bribery laws such as the Foreign Corrupt Practices Act, environmental laws and agency regulations, both in the U.S. and abroad;

the cost and availability of raw materials and purchased components;

our ability to successfully extend or renegotiate our primary collective bargaining contracts with our labor unions;

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our ability to recruit and retain highly skilled employees and our relationships with the unions representing many of our employees;

spending by the U.S. and other governments on defense;

the possibility that our cash flows and borrowing facilities may not be adequate for our additional capital needs or for payment of interest on and principal of our indebtedness;

our exposure under our existing senior secured revolving credit facility to higher interest payments should interest rates increase substantially;

the effectiveness of our interest and foreign currency hedging programs;

the outcome or impact of ongoing or future litigation and regulatory actions; and

our exposure to potential product liability and warranty claims.

These factors are not exhaustive, and new factors may emerge or changes to the foregoing factors may occur that could impact our business. These forward-looking statements involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. Forward-looking statements should, therefore, be considered in light of various factors, including those set forth in this prospectus supplement under **Risk Factors** and elsewhere in this prospectus supplement or in the accompanying prospectus and the documents incorporated by reference herein and therein. In light of such risks and uncertainties, we caution you not to rely on these forward-looking statements in deciding whether to invest in our class A common stock. As with any projection or forecast, these statements are inherently susceptible to uncertainty and changes in circumstances. Except to the extent required by law, we are under no obligation to, and expressly disclaim any obligation to, update or alter our forward-looking statements after the date of this prospectus supplement whether as a result of such changes, new information, future events or otherwise.

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PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information contained in, or incorporated by reference into, this prospectus supplement and the accompanying prospectus. It is not complete and may not contain all the information that may be important to you. You should carefully read the entire prospectus supplement and the accompanying prospectus, as well as the information we incorporate by reference, including the matters described in the section entitled Risk Factors, before making an investment decision. In this prospectus supplement, unless the context indicates otherwise, the terms the Company, Spirit Holdings, we, us and our refer to Spirit AeroSystems Holdings, Inc. and all entities owned or controlled by Spirit AeroSystems Holdings, Inc., including Spirit AeroSystems, Inc. The term Spirit refers solely to Spirit AeroSystems, Inc. References to Boeing refer to The Boeing Company and references to Airbus refer to Airbus S.A.S., a division of European Aeronautic Defense & Space NV.

Company Overview

We are one of the largest independent non-OEM (original equipment manufacturer) aircraft parts designers and manufacturers of commercial aerostructures in the world, based on annual revenues, as well as the largest independent supplier of aerostructures to Boeing. In addition, we are one of the largest independent suppliers of aerostructures to Airbus. Boeing and Airbus are the two largest aircraft OEMs in the world. Aerostructures are structural components such as fuselages, propulsion systems and wing systems for commercial and military aircraft. For the twelve months ended December 31, 2010, we generated net revenues of \$4,172.4 million, and had net income of \$218.9 million.

Spirit Holdings was formed in February 2005 as a holding company for Spirit. Spirit's operations commenced on June 17, 2005, following the acquisition by an investor group led by Onex Partners LP and Onex Corporation (Onex), of Boeing's commercial aerostructures manufacturing operations in Wichita, Kansas and Tulsa and McAlester, Oklahoma, referred to in this prospectus supplement as Boeing Wichita. The acquisition of Boeing Wichita is referred to in this prospectus supplement as the Boeing Acquisition. Although Spirit began operations as a stand-alone company in 2005, its predecessor, Boeing Wichita, had 75 years of operating history and expertise in the commercial and military aerostructures industry. Spirit Holdings, Spirit's parent company, has had publicly traded shares on the New York Stock Exchange under the ticker SPR since November 2006. Following the completion of this offering, affiliates of Onex Corporation will own approximately 95% of the shares of our class B common stock (approximately 95% if the underwriter's option to purchase additional shares is exercised in full), which represents approximately 64% of the total Spirit Holdings stockholder voting power (approximately 62% if the underwriter's option to purchase additional shares is exercised in full).

On April 1, 2006, we became a supplier to Airbus through our acquisition of the aerostructures division of BAE Systems (Operations) Limited, referred to in this prospectus supplement as BAE Systems. This acquisition is referred to in this prospectus supplement as the BAE Acquisition.

We manufacture aerostructures for every Boeing commercial aircraft currently in production, including the majority of the airframe content for the Boeing B737, the most popular major commercial aircraft in history. As a result of our unique capabilities both in process design and composite materials, we were awarded a contract that makes us the largest aerostructures content supplier on the Boeing B787, Boeing's next generation twin aisle aircraft. In addition, we are one of the largest content suppliers of wing systems for the Airbus A320 family, and we are a significant supplier for the Airbus A380, and will be a significant supplier for the new Airbus A350 XWB after the development stage of the program. Sales related to the large commercial aircraft market, some of which may be used in military applications, represented approximately 94% of our net revenues for the twelve-month period ended December 31,

2010.

We derive our revenues primarily through long-term supply agreements with Boeing and Airbus. For the twelve months ended December 31, 2010, approximately 83% and 11% of our net revenues were generated from sales to Boeing and Airbus, respectively. We are currently the sole-source supplier of 96% of the products we sell to Boeing and Airbus, as measured by the dollar value of products sold. We are a critical partner to our customers due to the broad range of products we currently supply to them and our leading design and manufacturing capabilities using both metallic and composite materials. Under our supply agreements with Boeing and Airbus, we supply

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products for the life of the aircraft program (other than the A350 XWB and A380), including commercial derivative models. For the A350 XWB and A380, we have long-term requirements contracts with Airbus that cover a fixed number of product units at established prices.

We are organized into three principal reporting segments: (1) Fuselage Systems, which includes forward, mid and rear fuselage sections; (2) Propulsion Systems, which includes nacelles, struts/pylons and engine structural components; and (3) Wing Systems, which includes wing systems and components, flight control surfaces and other miscellaneous structural parts. The Fuselage Systems segment manufactures products at our facilities in Wichita, Kansas and Kinston, North Carolina, the Propulsion Systems segment manufactures products at our facilities in Wichita, Kansas, and the Wing Systems segment manufactures products at our facilities in Tulsa and McAlester, Oklahoma, Prestwick, Scotland, Subang, Malaysia and Kinston, North Carolina. We also recently constructed a fuselage assembly plant for the A350 XWB aircraft in Saint-Nazaire, France which is expected to begin operations in the second quarter of 2011, which will receive and assemble center fuselage frame sections designed and manufactured in our Kinston, North Carolina facility, and transport the assembled sections to Airbus. Fuselage Systems, Propulsion Systems and Wing Systems represented approximately 49%, 25%, and 26%, respectively, of our net revenues for the twelve months ended December 31, 2010. All other activities fall within the All Other segment, representing less than 1% of our net revenues for the twelve months ended December 31, 2010, principally made up of sundry sales of miscellaneous services, tooling contracts, and sales of natural gas through a tenancy-in-common with other companies that have operations in Wichita.

Recent Developments

On April 2, 2011, a Gulfstream G650 aircraft crashed during takeoff-performance tests in Roswell, New Mexico, with four fatalities. The Company designs, engineers and manufactures nacelles (including thrust reversers) and wing structures for the Gulfstream G650. The accident is under investigation by Gulfstream Aerospace Corporation, the National Transportation Safety Board and the Federal Aviation Administration (FAA) and the cause has not yet been determined.

Our Principal Offices and Websites

Spirit Holdings was incorporated in the state of Delaware on February 7, 2005. Our principal offices are located at 3801 South Oliver, Wichita, Kansas 67210 and our telephone number at that address is (316) 526-9000. Our website address is www.spiritaero.com. **Information contained on this website is not part of this prospectus supplement or the accompanying prospectus and is not incorporated in this prospectus supplement or the accompanying prospectus by reference.**

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OFFERING SUMMARY

| | |
|---|--|
| Class A common stock offered by the selling stockholders | 10,307,375 shares, or 11,853,481 shares if the underwriter's option to purchase additional shares is exercised in full. |
| Common stock outstanding after this offering | 116,626,952 shares of class A common stock and 23,509,546 shares of class B common stock, or 118,173,058 shares of class A common stock and 22,025,086 shares of class B common stock if the underwriter's option to purchase additional shares is exercised in full. |
| Voting rights of class A common stock | Our class A common stock is entitled to one vote per share. Our class B common stock, which is not being offered in this offering, but votes together with our class A common stock as a single class, is entitled to ten votes per share (reducing to one vote per share under certain limited circumstances). Our class B common stock, which is convertible into shares of our class A common stock on a 1-for-1 basis, is identical to our class A common stock in all other respects. |
| Use of proceeds | We will not receive any proceeds from the sale of shares by the selling stockholders. |
| Dividend policy | We currently do not intend to pay cash dividends and, in certain circumstances, are prohibited from doing so under credit agreements governing our credit facilities and the indentures governing our long term bonds. |
| Risk Factors | See "Risk Factors" beginning on page S-6 of this prospectus supplement for a discussion of factors you should carefully consider before deciding to invest in our class A common stock. |
| NYSE symbol | SPR |

The number of shares of class A common stock being offered in this offering represents 7.4% of our outstanding common stock and 2.3% of our combined voting power (8.5% and 2.7%, respectively, if the underwriter's option to purchase additional shares is exercised in full), in each case after giving effect to this offering. For more information on the ownership of our common stock, see "Selling Stockholders."

Except as otherwise indicated, all of the information presented in this prospectus supplement assumes the following:

no exercise by the underwriter of the option to purchase additional shares;

the exclusion of 1,269,833 shares of class A common stock and 1,331,930 shares of class B common stock (920,990 shares of class B common stock after giving effect to the offering and 859,344 shares of class B common stock if the underwriter's options to purchase additional shares is exercised in full) issued to certain members of our management and to certain directors of Spirit which will remain subject to vesting requirements under our benefit plans (except in historical outstanding share numbers in our consolidated balance sheets and diluted net income per share calculations); and

the exclusion of 693,156 Units of phantom stock issued pursuant to our Supplemental Executive Retirement Plan (except in diluted net income per share calculations).

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The following table sets forth our selected consolidated financial data for each of the periods indicated. The financial data are derived from our audited consolidated financial statements. Financial data for the years ended December 31, 2008, December 31, 2009 and December 31, 2010 are derived from our audited consolidated financial statements contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2010, which is incorporated by reference into this prospectus supplement.

This information is only a summary and should be read in conjunction with our consolidated financial statements and accompanying notes and Management's Discussion and Analysis of Financial Condition and Results of Operations contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2010 which is incorporated by reference into this prospectus supplement. Historical results of operations may not be indicative of results to be expected for any future period.

| | Spirit Holdings | | | | |
|---|--|------------------------------|------------------------------|------------------------------|------------------------------|
| | December 31, 2010 | December 31, 2009 | December 31, 2008 | December 31, 2007 | December 31, 2006 |
| | (Dollars in millions, except per share amounts) | | | | |
| Statement of Income Data: | | | | | |
| Net revenues | \$ 4,172.4 | \$ 4,078.5 | \$ 3,771.8 | \$ 3,860.8 | \$ 3,207.7 |
| Cost of sales(1) | 3,607.9 | 3,581.4 | 3,163.2 | 3,197.2 | 2,934.3 |
| Selling, general and administrative expenses(2) | 156.0 | 137.1 | 154.5 | 192.1 | 225.0 |
| Research and development | 51.5 | 56.7 | 48.4 | 52.3 | 104.7 |
| Operating Income | 357.0 | 303.3 | 405.7 | 419.2 | (56.3) |
| Interest expense and financing fee amortization(3) | (59.1) | (43.6) | (39.2) | (36.8) | (50.1) |
| Interest income | 0.3 | 7.0 | 18.6 | 29.0 | 29.0 |
| Other income (loss), net | (0.4) | 6.1 | (1.2) | 8.4 | 5.9 |
| Income (loss) before income taxes and equity in net loss of affiliate | 297.8 | 272.8 | 383.9 | 419.8 | (71.5) |
| Income tax benefit (provision)(4) | (78.2) | (80.9) | (118.5) | (122.9) | 88.3 |
| Equity in net loss of affiliates | (0.7) | (0.2) | | | |
| Net income | \$ 218.9 | \$ 191.7 | \$ 265.4 | \$ 296.9 | \$ 16.8 |
| Net Income per share, basic | \$ 1.56 | \$ 1.39 | \$ 1.93 | \$ 2.19 | \$ 0.15 |
| Shares used in per share calculation, basic(5) | 137.9 | 137.2 | 137.0 | 134.5 | 115.6 |
| Net income per share, diluted | \$ 1.55 | \$ 1.37 | \$ 1.91 | \$ 2.13 | \$ 0.14 |
| Shares used in per share calculation, diluted | 141.0 | 139.8 | 139.2 | 139.3 | 122.0 |
| Other Financial Data: | | | | | |
| Cash flow provided by (used in) operating activities | \$ 125.1 | \$ (13.9) | \$ 210.7 | \$ 180.1 | \$ 273.6 |
| Cash flow (used in) investing activities | \$ (288.4) | \$ (112.4) | \$ (119.8) | \$ (239.1) | \$ (473.6) |

| | | | | | |
|--|------------|------------|------------|------------|------------|
| Cash flow provided by financing activities | \$ 277.4 | \$ 276.1 | \$ 3.5 | \$ 8.3 | \$ 140.9 |
| Capital expenditures | \$ (288.1) | \$ (228.2) | \$ (235.8) | \$ (288.2) | \$ (343.2) |

Consolidated Balance Sheet

Data:

| | | | | | |
|----------------------------------|------------|------------|------------|------------|------------|
| Cash and cash equivalents | \$ 481.6 | \$ 369.0 | \$ 216.5 | \$ 133.4 | \$ 184.3 |
| Accounts receivable, net | \$ 200.2 | \$ 160.4 | \$ 149.3 | \$ 159.9 | \$ 200.2 |
| Inventories, net | \$ 2,507.9 | \$ 2,206.9 | \$ 1,882.0 | \$ 1,342.6 | \$ 882.2 |
| Property, plant & equipment, net | \$ 1,470.0 | \$ 1,279.3 | \$ 1,068.3 | \$ 963.8 | \$ 773.8 |
| Total assets | \$ 5,102.0 | \$ 4,473.8 | \$ 3,760.3 | \$ 3,339.9 | \$ 2,722.2 |
| Total debt | \$ 1,196.8 | \$ 893.8 | \$ 588.0 | \$ 595.0 | \$ 618.2 |
| Long-term debt | \$ 1,187.3 | \$ 884.7 | \$ 580.9 | \$ 579.0 | \$ 594.3 |
| Total equity | \$ 1,810.9 | \$ 1,573.8 | \$ 1,297.5 | \$ 1,267.1 | \$ 859.5 |

(1) Included in 2010 cost of sales are charges of \$28.7 million related to the grant of shares to employees represented by the IAM in connection with the ratification of a new ten-year labor contract on June 25, 2010, early retirement

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incentives for members represented by IAM who made elections to retire in 2010, and grants of shares to employees represented by the UAW in connection with the ratification of a new ten-year labor contract on December 18, 2010. Included in 2007 and 2006 cost of sales are non-recurring charges of \$1.2 million and \$321.9 million, respectively for the Union Equity Participation Plan.

- (2) Includes non-cash stock compensation expenses of \$7.9 million, \$9.7 million, \$15.3 million, \$32.6 million, \$56.6 million, for the respective periods starting with the twelve months ended December 31, 2010. Also included in 2007 are \$4.9 million of costs associated with the evaluation of Airbus European manufacturing sites in 2007. Included in 2006 are \$8.3 million of IPO-related charges.
- (3) Included in 2006 interest expense and financing fee amortization are expenses related to the IPO of \$3.7 million.
- (4) Included in the 2006 income tax benefit is a \$40.1 million federal and a \$4.0 million state tax valuation allowance reversal totaling \$44.1 million.
- (5) Under the FASB guidance, unvested share-based payment awards that contain non-forfeitable rights to dividends or dividend equivalents (whether paid or unpaid) are participating securities and shall be included in the computation of earnings per share pursuant to the two-class method.

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RISK FACTORS

Any investment in our class A common stock involves a high degree of risk. You should carefully consider the risks described below as well as other information and data contained in this prospectus supplement and the accompanying prospectus and the documents we incorporate by reference herein and therein (including our Annual Report on Form 10-K for the year ended December 31, 2010) before making an investment decision with respect to our class A common stock.

*The risks and uncertainties described below are not the only risks and uncertainties we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations. If any of the following risks actually occur, our business, financial condition and results of operations would suffer. In that event, the trading price of our class A common stock could decline, and you may lose all or part of your investment in our class A common stock. The risks discussed below also include forward-looking statements and our actual results may differ substantially from those discussed in these forward-looking statements. See *Cautionary Statement Regarding Forward-Looking Statements.**

Risks Related to this Offering

Future sales of our class A common stock in the public market could adversely affect the trading price of our class A common stock, which may negatively impact your investment. A majority of our voting power are held by a few holders.

Sales by us or our stockholders of a substantial number of shares of our class A common stock in the public market following this offering, or the perception that these sales might occur, could cause the market price of our class A common stock to decline or could impair our ability to raise capital through a future sale of, or pay for acquisitions using, our equity securities at a time and price favorable to us.

As of March 31, 2011, we had authority to issue up to 200,000,000 shares of our class A common stock and 150,000,000 shares of our class B common stock. As of March 31, 2011, 106,319,577 shares of our class A common stock and 33,405,981 shares of our class B common stock were issued and outstanding. In addition, as of such date, 4,923,320 shares of our class A common stock and 6,344,632 shares of our class B common stock were reserved for issuance under stock incentive or purchase plans or pursuant to individual option grants or stock awards, and 1,269,833 shares of class A common stock and 1,331,930 shares of class B common stock had been issued to certain members of our management and to certain directors of Spirit but remain subject to vesting requirements under our benefit plans. After giving effect to this offering, certain entities affiliated with Onex Corporation will collectively own approximately 16% of our equity interests which can be sold in one or more transactions (approximately 15% if the underwriter's option to purchase additional shares is exercised in full). The sale or perceived possibility for further sales of the stock owned by the Onex entities could place an exaggerated downward pressure on our stock price.

We, certain of our executive officers and directors and certain entities affiliated with Onex Corporation have agreed that, with limited exceptions, we and they will not, among other things, without the prior written consent of the underwriter, directly or indirectly, offer to sell, sell or otherwise dispose, or file with the SEC a registration statement under the Act relating to, of any shares of our class A common stock or securities convertible into or exchangeable or exercisable for any shares of class A common stock or publicly disclose the intention to make any such offer, sale pledge, disposition or filing, for a period of 45 days after the date of this prospectus supplement. See *Underwriting*. All of the shares of class A common stock sold in this offering will be freely transferable, except for any shares sold to our affiliates, as that term is defined in Rule 144 under the Securities Act of 1933, as amended (the *Securities Act*).

We may issue common stock or equity securities senior to our class A common stock in the future for a number of reasons, including to finance our operations and growth plans, to adjust our ratio of debt-to-equity, to satisfy our obligations upon the exercise of options or for other reasons. Further, our subsidiaries could issue securities in the future to persons or entities (including our affiliates) other than us or another subsidiary. This could materially adversely affect your investment in us because it would dilute your indirect ownership interest in our subsidiaries. We cannot predict the effect, if any, that future sales or issuances of shares of our common stock or other equity

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securities, or the availability of shares of common stock or such other equity securities for future sale or issuance, will have on the trading price of our class A common stock.

The price of our class A common stock may fluctuate significantly, which could negatively affect us and holders of our class A common stock.

The price of our class A common stock on the New York Stock Exchange constantly changes. Since January 1, 2010, the last daily reported sale price of our class A common stock has ranged from \$16.50 to \$26.16 per share. We expect that the market price of our class A common stock will continue to fluctuate. Holders of our class A common stock will be subject to the risk of volatility and depressed prices. The trading price of our class A common stock may fluctuate significantly in response to a number of factors, many of which are beyond our control. For instance, if our financial results are below the expectations of securities analysts and investors, the market price of our class A common stock could decrease, perhaps significantly. Other factors that may affect the market price of our class A common stock include:

actual or anticipated fluctuations in our operating results;

changes in aerostructures pricing;

our competitors and customers announcements of significant contracts, acquisitions or strategic investments;

our award of new contracts and our performance on new and existing contracts;

changes in our growth rates or our competitors and customers growth rates;

the timing or results of regulatory submissions or actions with respect to our business;

our inability to finance or raise additional capital;

conditions of the aerostructures industry, in the financial markets, or economic conditions in general; and

changes in stock market analyst recommendations regarding our class A common stock, other comparable companies or the aerospace industry in general.

In addition, the U.S. securities markets have experienced significant price and volume fluctuations. These fluctuations often have been unrelated to the operating performance of particular companies. Market fluctuations and broad market, economic and industry factors may negatively affect the price of our class A common stock, regardless of our operating performance. You may not be able to sell your shares of our class A common stock at or above the offering price, or at all. Any volatility of or a significant decrease in the market price of our class A common stock could also negatively affect our ability to make acquisitions using class A common stock.

We do not intend to pay cash dividends.

We do not intend to pay cash dividends on our class A common stock. We currently intend to retain all available funds and any future earnings for use in the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. In addition, the terms of our current, as well as any future, financing agreements may preclude us from paying any dividends. As a result, appreciation, if any, in the market value of our class A common stock will be your sole source of potential financial gain for the foreseeable future.

Risk Factors Related to Our Business and Industry

Our commercial business is cyclical and sensitive to commercial airlines' profitability. The business of commercial airlines is, in turn, affected by global economic conditions and geo-political considerations.

We compete in the aerostructures segment of the aerospace industry. Our customers' business, and therefore our own, is directly affected by the financial condition of commercial airlines and other economic factors, including global economic conditions and geo-political considerations that affect the demand for air transportation. Specifically, our commercial business is dependent on the demand from passenger airlines and cargo carriers for the

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production of new aircraft. Accordingly, demand for our commercial products is tied to the worldwide airline industry's ability to finance the purchase of new aircraft and the industry's forecasted demand for seats, flights, routes and cargo capacity. Similarly, the size and age of the worldwide commercial aircraft fleet affects the demand for new aircraft and, consequently, for our products. Such factors, in conjunction with evolving economic conditions, cause the market in which we operate to be cyclical to varying degrees, thereby affecting our business and operating results.

Near-term challenges to our customers include sovereign debt default, economic weakness in the airline industry and the continuing volatility in global credit markets (which contributed to widespread economic slowdown, restricted discretionary spending, inability to finance airplane purchases, and a slowdown in air traffic). Possible exogenous shocks such as expanding conflicts or political unrest in the Middle East or Asia, renewed terrorist attacks against the industry, or pandemic health crises have the potential to cause precipitous declines in air traffic. Any protracted economic slump, continued adverse credit market conditions, future terrorist attacks, war or health concerns could cause airlines to cancel or delay the purchase of additional new aircraft which could result in a deterioration of commercial airplane backlogs. If demand for new aircraft decreases, there would likely be a decrease in demand for our commercial aircraft products, and our business, financial condition and results of operations could be materially adversely affected.

Our business could be materially adversely affected if one of our components causes an aircraft accident.

Our operations expose us to potential liabilities for personal injury or death as a result of the failure of an aircraft component that has been designed, manufactured or serviced by us or our suppliers. While we believe that our liability insurance is adequate to protect us from future product liability claims, it may not be adequate. Also, we may not be able to maintain insurance coverage in the future at an acceptable cost. Any such liability not covered by insurance or for which third-party indemnification is not available could require us to dedicate a substantial portion of our cash flows to make payments on such liability, which could have a material adverse effect on our business, financial condition and results of operations.

An accident caused by one of our components could also damage our reputation for quality products. We believe our customers consider safety and reliability as key criteria in selecting a provider of aerostructures. If an accident were to be caused by one of our components, or if we were to otherwise fail to maintain a satisfactory record of safety and reliability, our ability to retain and attract customers could be materially adversely affected.

Our business could be materially adversely affected by product warranty obligations.

Our operations expose us to potential liability for warranty claims made by customers or third parties with respect to aircraft components that have been designed, manufactured, or serviced by us or our suppliers. Material product warranty obligations could have a material adverse effect on our business, financial condition and results of operations.

Because we depend on Boeing and, to a lesser extent, Airbus, as our largest customers, our sales, cash flows from operations and results of operations will be negatively affected if either Boeing or Airbus reduces the number of products it purchases from us or if either experiences business difficulties.

Currently, Boeing is our largest customer and Airbus is our second-largest customer. For the twelve months ended December 31, 2010, approximately 83% and 11% of our net revenues were generated from sales to Boeing and Airbus, respectively. Although our strategy, in part, is to diversify our customer base by entering into supply arrangements with additional customers, we cannot give any assurance that we will be successful in doing so. Even if we are successful in obtaining and retaining new customers, we expect that Boeing and, to a lesser extent, Airbus, will continue to account for a substantial portion of our sales for the foreseeable future. Although we are a party to various

supply contracts with Boeing and Airbus which obligate Boeing and Airbus to purchase all of their requirements for certain products from us, those agreements generally do not require specific minimum purchase volumes. In addition, if we breach certain obligations under these supply agreements and Boeing or Airbus exercises its right to terminate such agreements, our business will be materially adversely affected. Boeing and Airbus have the contractual right to cancel their supply agreements with us for convenience, which could include

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the termination of one or more aircraft models or programs for which we supply products. Although Boeing and Airbus would be required to reimburse us for certain expenses, there can be no assurance these payments would adequately cover our expenses or lost profits resulting from the termination. In addition, we have agreed to a limitation on recoverable damages if Boeing wrongfully terminates our main supply agreement with respect to any model or program. If this occurs, we may not be able to recover the full amount of our actual damages. Furthermore, if Boeing or Airbus (1) experiences a decrease in requirements for the products which we supply to it; (2) experiences a major disruption in its business, such as a strike, work stoppage or slowdown, a supply-chain problem or a decrease in orders from its customers; or (3) files for bankruptcy protection; our business, financial condition and results of operations could be materially adversely affected.

Both Boeing and Airbus contract with Japanese suppliers for parts for their commercial airplanes. In particular, Boeing contracts with Japanese suppliers to produce major aerostructures for the B787. If, as a result of the effects of the earthquake and tsunami that occurred recently in Japan, any of Boeing's or Airbus' Japanese suppliers are unable to deliver sufficient quantities of parts in a timely manner, it could result in a slowdown of production of certain Boeing or Airbus aircraft, which could have a material adverse impact on our results of operations.

Our largest customer, Boeing, operates in a very competitive business environment.

Boeing operates in a highly competitive industry. Competition from Airbus, Boeing's main competitor, as well as from regional jet makers, has intensified as these competitors expand aircraft model offerings and competitively price their products. As a result of this competitive environment, Boeing continues to face pressure on product offerings and sale prices. While we do have supply agreements with Airbus, we currently have substantially more business with Boeing and thus any adverse effect on Boeing's production of aircraft resulting from this competitive environment may have a material adverse effect on our business, financial condition and results of operations.

Our business depends, in large part, on sales of components for a single aircraft program, the B737.

For the twelve months ended December 31, 2010, approximately 54% of our net revenues were generated from sales of components to Boeing for the B737 aircraft. While we have entered into long-term supply agreements with Boeing to continue to provide components for the B737 for the life of the aircraft program, including commercial and the military P-8A Poseidon derivatives, Boeing does not have any obligation to purchase components from us for any replacement for the B737 that is not a commercial derivative model. Boeing has publicly announced its intention to develop a next-generation single-aisle aircraft program to replace the B737. If Boeing develops a next-generation aircraft program to replace the B737 which is not a commercial derivative, we may not have the next-generation technology, engineering and manufacturing capability necessary to obtain significant aerostructures supply business for the replacement program, may not be able to provide components for the replacement program at competitive prices or, for other reasons, may not be engaged by Boeing to the extent of our involvement in the B737 or at all. If we were unable to obtain significant aerostructures supply business for any B737 replacement program, our business, financial condition and results of operations could be materially adversely affected.

The profitability of the B787 program depends significantly on the assumptions surrounding a satisfactory settlement of assertions.

Due to the nature of the work performed related to the B787, we regularly commence work or incorporate customer requested changes prior to negotiating pricing terms for the engineering work or the product which has been modified. We have the legal right to negotiate pricing for customer directed changes. We assert to our customers our contractual rights to obtain the additional revenue or cost reimbursement we expect to receive upon finalizing pricing terms. An expected recovery value of these assertions is incorporated into our contract profitability estimates when applying contract accounting. Our inability to recover these expected values, among other factors, could result in the

recognition of a forward loss on the B787 program and could have a material adverse effect on our results of operations.

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Our business depends, in part, on the success of a new model aircraft, the B787.

The success of our business will depend, in part, on the success of Boeing's new B787 program. We have entered into supply agreements with Boeing pursuant to which we are a Tier 1 supplier to the B787 program. We have made and will continue to make a significant investment in this program before the first commercial delivery of a B787 jetliner. Following program delays, on December 15, 2009, Boeing completed the first flight of the B787 jetliner. This was followed by the completion of initial airworthiness testing on January 15, 2010. On November 11, 2010, Boeing announced the postponement of further flight test activities on the B787, following the occurrence of an onboard electrical fire on a November 10, 2010 test flight. Boeing developed software system and other upgrades in response to that occurrence. We anticipate, based on public announcements by Boeing, that Boeing will commence commercial deliveries on the B787 in approximately the third quarter of 2011. We are in the process of evaluating the impact of the revised schedule on our business. We have temporarily shifted employees from the B787 program to work on other programs. Amounts capitalized into inventory represent our primary working capital exposure to the B787 delays. Given the low margins we currently project in our first contract accounting block, if Boeing is unable to meet currently anticipated production levels or if we are not able to achieve the cost reductions we expect, successfully implement customer driven engineering changes, or successfully complete contract negotiations, including assertions, we could eventually need to recognize a forward loss in our current contract accounting block. Any additional delays in the B787 program, including delays in negotiations of certain contractual matters with Boeing, could further impact our cash flows from operations and could materially adversely affect our business, financial condition and results of operations.

We may be required to repay Boeing up to approximately \$1,023.3 million of advance payments and deferred revenue made to us by Boeing related to the B787 Supply Agreement. The advances may be repaid in the event that Boeing does not take delivery of a sufficient number of ship sets prior to the termination of the aircraft program. The deferred revenue may be repaid if a final contract amendment is not reached during the first half of 2011.

We are required to repay Boeing a 2007 interest free cash advance of \$700 million, in the amount of a \$1.4 million offset against the purchase price of each of the first five hundred B787 ship sets delivered to Boeing. In the event that Boeing does not take delivery of five hundred B787 ship sets by the end of the aircraft program, any advances not then repaid will first be applied against any outstanding B787 payments then due by Boeing to us, with any remaining balance to be repaid at the rate of \$84.0 million per year beginning in the year in which we deliver our final B787 production ship set to Boeing, prorated for the remaining portion of the year in which we make our final delivery.

On March 26, 2008, Boeing and Spirit amended their existing B787 Supply Agreement to, among other things, require Boeing to make additional advance payments to Spirit in 2008 in the amount of \$396.0 million for production articles. The additional advances will be applied against the full purchase price of the ship sets delivered (net of the \$1.4 million per ship set applied against the initial \$700.0 million of advances described above) until fully repaid, which is expected to occur before the delivery of the 50th ship set. In the event that Boeing does not take delivery of a sufficient number of ship sets to repay the additional advances by the end of the aircraft program, any additional advances not then repaid will first be applied against any outstanding B787 payments then due by Boeing to us, with any remaining balance repaid beginning in the year in which we deliver our final B787 production ship set to Boeing, with the full amount to be repaid no later than the end of the subsequent year.

On June 23, 2009, Boeing and Spirit further amended their existing B787 Supply Agreement to, among other things, require Boeing to make additional advances to Spirit. These additional advances are paid to Spirit quarterly, in amounts determined pursuant to pricing provisions set forth in the agreement, and will be recovered over future units. In the event that Boeing does not take delivery of a sufficient number of ship sets to recover these additional advances by the end of 2021, Spirit would be required to repay any outstanding balance in six equal annual installments. The advance payments have been made to Spirit quarterly since August 2009.

In December 2010, Spirit and Boeing entered into a memorandum of agreement and a settlement agreement. As part of these agreements, Spirit received a payment in December which has been recorded as *deferred revenue (short-term)* within the consolidated balance sheet pending finalization of a contract amendment which would

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contain the final settlement terms for claims under the B787 contract between Spirit and Boeing. If the final contract amendment is not agreed to by the second quarter of 2011, Boeing may require reimbursement or set-off of the payment over a short or long-term period of time. This final amendment may contain provisions that alter the current structure of repayment for the advances described in this risk factor.

Accordingly, portions of the advance repayment liability are included as current and long-term liabilities in our consolidated balance sheet. As of December 31, 2010, the amount of advance payments and deferred revenue made to us by Boeing under the B787 Supply Agreement and not yet repaid or recognized as revenue was approximately \$1,023.3 million.

We incur risk associated with new programs.

New programs with new technologies typically carry risks associated with design responsibility, development of new production tools, hiring and training of qualified personnel, increased capital and funding commitments, ability to meet customer specifications, delivery schedules and unique contractual requirements, supplier performance, ability of the customer to meet its contractual obligations to us, and our ability to accurately estimate costs associated with such programs. In addition, any new aircraft program may not generate sufficient demand or may experience technological problems or significant delays in the regulatory certification or manufacturing and delivery schedule. If we were unable to perform our obligations under new programs to the customer's satisfaction, if we were unable to manufacture products at our estimated costs, or if a new program in which we had made a significant investment was terminated or experienced weak demand, delays or technological problems, our business, financial condition and results of operations could be materially adversely affected. This risk includes the potential for default, quality problems, or inability to meet weight requirements and could result in low margin or forward loss contracts, and the risk of having to write-off inventory if it were deemed to be unrecoverable over the life of the program. In addition, beginning new work on existing programs also carries risks associated with the transfer of technology, knowledge and tooling.

In order to perform on new programs we may be required to construct or acquire new facilities requiring additional up-front investment costs. In the case of significant program delays and/or program cancellations, for the costs that are not recoverable, we could be required to bear the construction and maintenance costs and incur potential impairment charges for the new facilities. Also, we may need to expend additional resources to determine an alternate revenue-generating use for the facilities. Likewise, significant delays in the construction or acquisition of a plant site could impact production schedules.

Our operations depend on our ability to maintain continuing, uninterrupted production at our manufacturing facilities. Our production facilities are subject to physical and other risks that could disrupt production.

Our manufacturing facilities could be damaged or disrupted by a natural disaster, war, terrorist activity or sustained mechanical failure. Although we have obtained property damage and business interruption insurance, a major catastrophe, such as a fire, flood, tornado or other natural disaster at any of our sites, war or terrorist activities in any of the areas where we conduct operations or the sustained mechanical failure of a key piece of equipment could result in a prolonged interruption of all or a substantial portion of our business. Any disruption resulting from these events could cause significant delays in shipments of products and the loss of sales and customers and we may not have insurance to adequately compensate us for any of these events. A large portion of our operations takes place at one facility in Wichita, Kansas and any significant damage or disruption to this facility in particular would materially adversely affect our ability to service our customers.

Future commitments to our customers to increase production rates depend on our ability to expand production at our manufacturing facilities.

Boeing and Airbus, our two largest customers, have both announced planned production rate increases for several of their major programs. In some cases, in order to meet these increases in production rates, we will need to make significant capital expenditures to expand our capacity and improve our performance. While some of these expenditures will be reimbursed by our customers, we could be required to bear a significant portion of the costs. In

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addition, the increases in production rates could cause disruptions in our manufacturing lines, which could materially adversely impact our ability to meet our commitments to our customers, and have a resulting adverse effect on our financial condition and results of operations.

We operate in a very competitive business environment.

Competition in the aerostructures segment of the aerospace industry is intense. Although we have entered into supply agreements with Boeing and Airbus under which we are their exclusive supplier for certain aircraft parts, we will face substantial competition from both OEMs and non-OEM aerostructures suppliers in trying to expand our customer base and the types of parts we make.

OEMs may choose not to outsource production of aerostructures due to, among other things, their own direct labor and other overhead considerations and capacity utilization at their own facilities. Consequently, traditional factors affecting competition, such as price and quality of service, may not be significant determinants when OEMs decide whether to produce a part in-house or to outsource.

Our principal competitors among aerostructures suppliers are Aircelle S.A., Alenia Aeronautica, Fuji Heavy Industries, Ltd., GKN Aerospace, The Goodrich Corporation, Kawasaki Heavy Industries, Inc., Mitsubishi Heavy Industries, Saab AB, Snecma, Triumph Group, Inc., Latecoere S.A., Aerolia SAS, Premium Aerotech GmbH and Nexcelle. Some of our competitors have greater resources than we do and, therefore, may be able to adapt more quickly to new or emerging technologies and changes in customer requirements, or devote greater resources to the promotion and sale of their products than we can. Additionally, as part of its Power 8 restructuring plan, Airbus and its parent company EADS have formed wholly-owned French (Aerolia) and German (Premium Aerotech) subsidiaries for potential sale to third parties in 2012. If these facilities are sold, or otherwise attempt to obtain work from third parties, the facilities could become competitors of Spirit. Providers of aerostructures have traditionally competed on the basis of cost, technology, quality and service. We believe that developing and maintaining a competitive advantage will require continued investment in product development, engineering, supply-chain management and sales and marketing, and we may not have enough resources to make such investments. For these reasons, we may not be able to compete successfully in this market or against such competitors, which could have a material adverse effect on our business, financial condition and results of operations.

High switching costs may substantially limit our ability to obtain business that is currently under contract with other suppliers.

Once a contract is awarded by an OEM to an aerostructures supplier, the OEM and the supplier are typically required to spend significant amounts of time and capital on design, manufacture, testing and certification of tooling and other equipment. For an OEM to change suppliers during the life of an aircraft program, further testing and certification would be necessary, and the OEM would be required either to move the tooling and equipment used by the existing supplier for performance under the existing contract, which may be expensive and difficult (or impossible), or to manufacture new tooling and equipment. Accordingly, any change of suppliers would likely result in production delays and additional costs to both the OEM and the new supplier. These high switching costs may make it more difficult for us to bid competitively against existing suppliers and less likely that an OEM will be willing to switch suppliers during the life of an aircraft program, which could materially adversely affect our ability to obtain new work on existing aircraft programs.

Because of our limited operating history, our historical financial statements do not reflect the impact of an extended market downturn on our financial condition and results of operations.

Our historical financial statements are not indicative of how we would operate through an extended market downturn. Since the Boeing Acquisition and until the latter part of 2008, we had operated in a market experiencing an upturn; however, from the latter part of 2008 through 2009, we operated during a period of a deep economic recession. As previously mentioned, net orders and delivery rates are nearly even for 2010, yielding stable backlog quantities. In 2005, Boeing and Airbus experienced record aggregate annual airplane orders, followed in 2006 with aggregate annual order totals that, at the time, were the second highest ever. Aggregate annual orders, net of

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cancellations, remained strong in 2007 at 2,754. However, aggregate annual orders, net of cancellations, decreased to 1,439 in 2008 and 413 in 2009. In 2010 orders, net of cancellations, were 1,104. Our financial results from this limited history provide little indication of our ability to operate in a market experiencing significantly lower demand for our products and the products of our customers. As such, we cannot give any assurance that we will be able to successfully operate in such a market at historical profitability levels or at all.

Increases in labor costs, potential labor disputes and work stoppages at our facilities or the facilities of our suppliers or customers could materially adversely affect our financial performance.

Our financial performance is affected by the availability of qualified personnel and the cost of labor. A majority of our workforce is represented by unions. If our workers were to engage in a strike, work stoppage or other slowdown, we could experience a significant disruption of our operations, which could cause us to be unable to deliver products to our customers on a timely basis and could result in a breach of our supply agreements. This could result in a loss of business and an increase in our operating expenses, which could have a material adverse effect on our business, financial condition and results of operations. In addition, our non-unionized labor force may become subject to labor union organizing efforts, which could cause us to incur additional labor costs and increase the related risks that we now face.

We have agreed with Boeing to continue to operate substantial manufacturing operations in Wichita, Kansas until at least June 16, 2015 and we have other commitments to keep major programs in Wichita until 2020 in certain circumstances. This may prevent us from being able to offer our products at prices that are competitive in the marketplace and could have a material adverse effect on our ability to generate new business.

In addition, many aircraft manufacturers, airlines and aerospace suppliers have unionized work forces. Any strikes, work stoppages or slowdowns experienced by aircraft manufacturers, airlines or aerospace suppliers could reduce our customers' demand for additional aircraft structures or prevent us from completing production of our aircraft structures.

While we have successfully negotiated new contracts in 2009 and 2010 with three of the five unions that represent our U.S. employees, all of which are long-term ten-year agreements, our collective bargaining agreement with another union, which represents approximately 18% of our U.S. workforce, will expire in the third quarter of 2011. See **Business Employees** in our Annual Report on Form 10-K for the year ended December 31, 2010, which we incorporate by reference into this prospectus supplement. We cannot give any assurance that we will be able to negotiate new collective bargaining agreements with our unions, on commercially reasonable terms or at all. If we are unable to successfully negotiate new collective bargaining agreements, or if we enter into new collective bargaining agreements on terms which are less favorable to us than our existing agreements, our operating expenses could increase, which could have a material adverse effect on our business, financial condition and results of operations.

Our business may be materially adversely affected if we lose our government, regulatory or industry approvals, if more stringent government regulations are enacted, or if industry oversight is increased.

The FAA prescribes standards and qualification requirements for aerostructures, including virtually all commercial airline and general aviation products, and licenses component repair stations within the United States. Comparable agencies, such as the Joint Aviation Authorities (JAA) in Europe, regulate these matters in other countries. If we fail to qualify for or obtain a required license for one of our products or services or lose a qualification or license previously granted, the sale of the subject product or service would be prohibited by law until such license is obtained or renewed and our business, financial condition and results of operations could be materially adversely affected. In addition, designing new products to meet existing regulatory requirements and retrofitting installed products to comply with new regulatory requirements can be expensive and time consuming.

From time to time, the FAA, the JAA or comparable agencies propose new regulations or changes to existing regulations. These changes or new regulations generally increase the costs of compliance. To the extent the FAA, the JAA or comparable agencies implement regulatory changes, we may incur significant additional costs to achieve compliance.

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In addition, certain aircraft repair activities we intend to engage in may require the approval of the aircraft's OEM. Our inability to obtain OEM approval could materially restrict our ability to perform such aircraft repair activities.

We are subject to regulation of our technical data and goods under U.S. export control laws.

As a manufacturer and exporter of defense and dual-use technical data and commodities, we are subject to U.S. laws and regulations governing international trade and exports, including, but not limited to, the International Traffic in Arms Regulations, administered by the U.S. Department of State, and the Export Administration Regulations, administered by the U.S. Department of Commerce. Collaborative agreements that we may have with foreign persons, including manufacturers and suppliers, are also subject to U.S. export control laws. In addition, we are subject to trade sanctions against embargoed countries, administered by the Office of Foreign Assets Control within the U.S. Department of the Treasury.

A determination that we have failed to comply with one or more of these export controls or trade sanctions could result in civil or criminal penalties, including the imposition of fines upon us as well as the denial of export privileges and debarment from participation in U.S. government contracts. Additionally, restrictions may be placed on the export of technical data and goods in the future as a result of changing geopolitical conditions. Any one or more of such sanctions could have a material adverse effect on our business, financial condition and results of operations.

Our business is subject to regulation in the United States and internationally.

The manufacturing of our products is subject to numerous federal, state and foreign governmental regulations. The number of laws and regulations that are being enacted or proposed by state, federal and international governments and authorities are increasing. Compliance with these regulations is difficult and expensive. If we fail to adhere, or are alleged to have failed to adhere, to any applicable federal, state or foreign laws or regulations, or if such laws or regulations negatively affect sales of our products, our business, prospects, results of operation, financial condition or cash flows may be adversely affected. In addition, our future results could be adversely affected by changes in applicable federal, state and foreign laws and regulations, or the interpretation or enforcement thereof, including those relating to manufacturing processes, product liability, trade rules and customs regulations, intellectual property, consumer laws, privacy laws, as well as accounting standards and taxation requirements (including tax-rate changes, new tax laws and revised tax law interpretations).

We are subject to environmental, health and safety regulations and our ongoing operations may expose us to related liabilities.

Our operations are subject to extensive regulation under environmental, health and safety laws and regulations in the United States and other countries in which we operate. We may be subject to potentially significant fines or penalties, including criminal sanctions, if we fail to comply with these requirements. We have made, and will continue to make, significant capital and other expenditures to comply with these laws and regulations. We cannot predict with certainty what environmental legislation will be enacted in the future or how existing laws will be administered or interpreted. Our operations involve the use of large amounts of hazardous substances and regulated materials and generate many types of wastes, including emissions of hexavalent chromium and volatile organic compounds, and so-called greenhouse gases such as carbon dioxide. Spills and releases of these materials may subject us to clean-up liability for remediation and claims of alleged personal injury, property damage and damage to natural resources, and we may become obligated to reduce our emissions of hexavalent chromium, volatile organic compounds and/or greenhouse gases. We cannot give any assurance that the aggregate amount of future remediation costs and other environmental liabilities will not be material.

Boeing, our predecessor at the Wichita facility, is under an administrative consent order issued by the Kansas Department of Health and Environment to contain and remediate contaminated groundwater which underlies a majority of the site. Pursuant to this order and its agreements with us, Boeing has a long-term remediation plan in place, and treatment, containment and remediation efforts are underway. If Boeing does not comply with its

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obligations under the order and these agreements, we may be required to undertake such efforts and make material expenditures.

In connection with the BAE Acquisition, we acquired a manufacturing facility in Prestwick, Scotland that is adjacent to contaminated property retained by BAE Systems. The contaminated property may be subject to a regulatory action requiring remediation of the land. It is also possible that the contamination may spread into the property we acquired. BAE Systems has agreed to indemnify us, subject to certain contractual limitations and conditions, for certain clean up costs and other losses, liabilities, expenses and claims related to existing pollution on the acquired property, existing pollution that migrates from the acquired property to a third party's property and any pollution that migrates to our property from property retained by BAE Systems. If BAE Systems does not comply with its obligations under the agreement, we may be required to undertake such efforts and make material expenditures.

In the future, contamination may be discovered at or emanating from our facilities or at off-site locations where we send waste. The remediation of such newly discovered contamination, related claims for personal injury or damages, or the enactment of new laws or a stricter interpretation of existing laws, may require us to make additional expenditures, some of which could be material. See **Business Environmental Matters** in our Annual Report on Form 10-K for the year ended December 31, 2010, which we incorporate by reference into this prospectus supplement.

Significant consolidation in the aerospace industry could make it difficult for us to obtain new business.

Suppliers in the aerospace industry have consolidated and formed alliances to broaden their product and integrated system offerings and achieve critical mass. This supplier consolidation is in part attributable to aircraft manufacturers more frequently awarding long-term sole-source or preferred supplier contracts to the most capable suppliers, thus reducing the total number of suppliers. If this consolidation were to continue, it may become more difficult for us to be successful in obtaining new customers.

We may be materially adversely affected by high fuel prices.

Due to the competitive nature of the airline industry, airlines are often unable to pass on increased fuel prices to customers by increasing fares. Fluctuations in the global supply of crude oil and the possibility of changes in government policy on jet fuel production, transportation and marketing make it difficult to predict the future availability of jet fuel. In the event there is an outbreak or escalation of hostilities or other conflicts, or significant disruptions in oil production or delivery in oil-producing areas or elsewhere, there could be reductions in the production or importation of crude oil and significant increases in the cost of fuel. If there were major reductions in the availability of jet fuel or significant increases in its cost, the airline industry and, as a result, our business, could be materially adversely affected.

Interruptions in deliveries of components or raw materials, or increased prices for components or raw materials used in our products could delay production and/or materially adversely affect our financial performance, profitability, margins and revenues.

We are highly dependent on the availability of essential materials and purchased components from our suppliers, some of which are available only from a sole source or limited sources. Our dependency upon regular deliveries from particular suppliers of components and raw materials means that interruptions or stoppages in such deliveries could materially adversely affect our operations until arrangements with alternate suppliers, to the extent alternate suppliers exist, could be made. If any of our suppliers were unable or refused to deliver materials to us for an extended period of time, or if we were unable to negotiate acceptable terms for the supply of materials with these or alternative suppliers, our business could suffer.

Moreover, we are dependent upon the ability of our suppliers to provide materials and components that meet specifications, quality standards and delivery schedules. Our suppliers' failure to provide expected raw materials or component parts that meet our technical specifications could adversely affect production schedules and contract profitability. We may not be able to find acceptable alternatives, and any such alternatives could result in increased costs for us and possible forward losses on certain contracts. Even if acceptable alternatives are found, the process of

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locating and securing such alternatives might be disruptive to our business and might lead to termination of our supply agreements with our customers.

Our continued supply of materials is subject to a number of risks including:

the destruction of our suppliers' facilities or their distribution infrastructure;

a work stoppage or strike by our suppliers' employees;

the failure of our suppliers to provide materials of the requisite quality or in compliance with specifications;

the failure of essential equipment at our suppliers' plants;

the failure of our suppliers to satisfy U.S. and international import and export control laws for goods that we purchase from such suppliers;

the failure of suppliers to meet regulatory standards;

the failure, shortage or delays in the delivery of raw materials to our suppliers;

contractual amendments and disputes with our suppliers; and

inability of suppliers to perform as a result of the weakened global economy or otherwise.

We contract with a number of suppliers in Japan. As a result of the effects of the earthquake and tsunami that occurred recently in Japan, our Japanese suppliers may be unable to deliver sufficient quantities of components or may be unable to deliver components in a timely manner, which could materially adversely affect our results of operations.

In addition, our profitability is affected by the prices of the components and raw materials, such as titanium, aluminum and carbon fiber, used in the manufacturing of our products. These prices may fluctuate based on a number of factors beyond our control, including world oil prices, changes in supply and demand, general economic conditions, labor costs, competition, import duties, tariffs, currency exchange rates and, in some cases, government regulation. Although our supply agreements with Boeing and Airbus allow us to pass on certain unusual increases in component and raw material costs in limited situations, we may not be fully compensated by the customer for the entirety of any such increased costs.

Our business will suffer if certain key officers or employees discontinue employment with us or if we are unable to recruit and retain highly skilled staff.

The success of our business is highly dependent upon the skills, experience and efforts of our President and Chief Executive Officer, Jeffrey Turner, and certain of our other key officers and employees. As the top executive officer of Boeing Wichita for almost ten years prior to the Boeing Acquisition, Mr. Turner gained extensive experience in running our business and long-standing relationships with many high-level executives at Boeing, our largest customer. We believe Mr. Turner's reputation in the aerospace industry and relationship with Boeing are critical elements in maintaining and expanding our business. The loss of Mr. Turner or other key personnel could have a material adverse effect on our business, operating results or financial condition. Our business also depends on our ability to continue to recruit, train and retain skilled employees, particularly skilled engineers. The market for these resources is highly competitive. We may be unsuccessful in attracting and retaining the engineers we need and, in such event, our business could be materially adversely affected. The loss of the services of any skilled key personnel, or our inability

to hire new personnel with the requisite skills, could impair our ability to provide products to our customers or manage our business effectively.

We are subject to the requirements of the National Industrial Security Program Operating Manual (NISPOM) for our Facility Security Clearance (FCL), which is a prerequisite for our ability to perform on classified contracts for the U.S. Government.

A Department of Defense (DOD) FCL is required for a company to be awarded and perform on classified contracts for the DOD and certain other agencies of the U.S. Government. From time to time we have performed and may perform on classified contracts, although we did not generate any revenues from classified contracts for the

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twelve months ended December 31, 2010. We have obtained an FCL at the Secret level. Due to the fact that more than 50% of our voting power is effectively controlled by a non-U.S. entity (i.e., Onex), we are required to operate in accordance with the terms and requirements of our Special Security Agreement (SSA) with the DOD. If we were to violate the terms and requirements of our SSA, the NISPOM, or any other applicable U.S. Government industrial security regulations, we could lose our FCL. We cannot give any assurance that we will be able to maintain our FCL. If for some reason our FCL is invalidated or terminated, we may not be able to continue to perform our classified contracts in effect at that time, and we would not be able to enter into new classified contracts, which could adversely affect our revenues.

We derive a significant portion of our net revenues from direct and indirect sales outside the United States and are subject to the risks of doing business in foreign countries.

We derive a significant portion of our revenues from sales by Boeing and Airbus to customers outside the United States. In addition, for the twelve months ended December 31, 2010, direct sales to our non-U.S. customers accounted for approximately 12% of our net revenues. We expect that our and our customers' international sales will continue to account for a significant portion of our net revenues for the foreseeable future. As a result, we are subject to risks of doing business internationally, including:

changes in regulatory requirements;

domestic and foreign government policies, including requirements to expend a portion of program funds locally and governmental industrial cooperation requirements;

fluctuations in foreign currency exchange rates;

the complexity and necessity of using foreign representatives and consultants;

uncertainties and restrictions concerning the availability of funding credit or guarantees;

imposition of tariffs and embargos, export controls and other trade restrictions;

the difficulty of management and operation of an enterprise spread over various countries;

compliance with a variety of foreign laws, as well as U.S. laws affecting the activities of U.S. companies abroad, including the Foreign Corrupt Practices Act and other applicable anti-bribery laws; and

economic and geopolitical developments and conditions, including international hostilities, acts of terrorism and governmental reactions, inflation, trade relationships and military and political alliances.

While these factors or the effect of these factors are difficult to predict, adverse developments in one or more of these areas could materially adversely affect our business, financial condition and results of operations in the future.

Our fixed-price contracts may commit us to unfavorable terms.

We provide most of our products and services through long-term contracts in which the pricing terms are fixed based on certain production volumes. Accordingly, we bear the risk that we will not be able to sustain a cost structure that is consistent with assumptions used in bidding on contracts. Increased or unexpected costs may reduce our profit margins or cause us to sustain losses on these contracts. Other than certain increases in raw material costs which can be passed on to our customers, we must fully absorb cost overruns, notwithstanding the difficulty of estimating all of

the costs we will incur in performing these contracts and in projecting the ultimate level of sales that we may achieve. Our failure to anticipate technical problems, estimate delivery reductions, estimate costs accurately or control costs during performance of a fixed-price contract may reduce the profitability of a contract or cause a loss.

This risk particularly applies to products such as the Boeing B787, for which we had delivered thirty-one production articles as of December 31, 2010 since the inception of the program, and in respect of which our profitability at the contracted price depends on our being able to achieve production cost reductions as we gain production experience. Pricing for the initial configuration of the B787-8, the base model currently in production, is generally established through 2021, with prices decreasing as cumulative volume levels are achieved. Prices are

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subject to adjustment for abnormal inflation (above a specified level in any year) and for certain production, schedule and other specific changes. When we negotiated the B787-8 pricing, we assumed that favorable trends in volume, learning curve efficiencies and future pricing from suppliers would reduce our production costs over the life of the B787 program, thus maintaining or improving our margin on each B787 we produced. We cannot give any assurance that our development of new technologies or capabilities will be successful or that we will be able to reduce our B787 production costs over the life of the program. Our failure to reduce production costs as we have anticipated could result in decreasing margin on the B787 during the life of the program and the need to record a forward loss for the current contract accounting block.

Many of our other production cost estimates also contain pricing terms which anticipate cost reductions over time. In addition, although we have entered into these fixed price contracts with our customers, they may nonetheless seek to re-negotiate pricing with us in the future. Any such higher costs or re-negotiations could materially adversely affect our profitability, margins and revenues.

We face a class-action lawsuit which could potentially result in substantial costs, diversion of management's attention and resources, and negative publicity.

A lawsuit has been filed against Spirit, Onex, and Boeing alleging age discrimination in the hiring of employees by Spirit when Boeing sold Boeing Wichita to Onex. The complaint was filed in U.S. District Court in Wichita, Kansas and seeks class-action status, an unspecified amount of compensatory damages and more than \$1.5 billion in punitive damages. On June 30, 2010, the U.S. District Court granted defendants' dispositive motions, finding that the case should not be allowed to proceed as a class action. The plaintiffs could decide to appeal the district court's decision to the United States Court of Appeals for the Tenth Circuit, which could reverse the District Court's June 30 ruling. The Asset Purchase Agreement between Onex and Boeing relating to the Boeing Acquisition requires Spirit to indemnify Boeing for its damages resulting from the employment decisions that were made by us with respect to former employees of Boeing Wichita which relate or allegedly relate to the involvement of, or consultation, with employees of Boeing in such employment decisions. The lawsuit could result in substantial costs, divert management's attention and resources from our operations and negatively affect our public image and reputation. An unfavorable outcome or prolonged litigation related to these matters could materially harm our business.

We are implementing new company-wide software systems, which could increase our information technology expenditures and cause unexpected production delays.

We have recently implemented an Enterprise Resource Planning (ERP) software system in several of our facilities, and have begun implementation of other system upgrades and infrastructure changes. We plan to implement the ERP software in all of our primary facilities by the end of 2011. Our total expenditures for these systems and upgrades could exceed the planned budget. In addition, unexpected problems with the implementation could result in production or other delays.

We do not own most of the intellectual property and tooling used in our business.

Our business depends on using certain intellectual property and tooling that we have rights to use under license grants from Boeing. These licenses contain restrictions on our use of Boeing intellectual property and tooling and may be terminated if we default under certain of these restrictions. Our loss of license rights to use Boeing intellectual property or tooling would materially adversely affect our business. In addition, we must honor our contractual commitments to our other customers related to intellectual property and comply with infringement laws governing our use of intellectual property. In the event we obtain new business from new or existing customers, we will need to pay particular attention to these contractual commitments and any other restrictions on our use of intellectual property to make sure that we will not be using intellectual property improperly in the performance of such new business. In the

event we use any such intellectual property improperly, we could be subject to an infringement claim by the owner or licensee of such intellectual property. See Business Our Relationship with Boeing License of Intellectual Property in our Annual Report on Form 10-K for the year ended December 31, 2010, which we incorporate by reference into this prospectus supplement. In addition to the licenses with Boeing, Spirit licenses some of the intellectual property needed for performance under some of its supply contracts from its customers under those supply agreements.

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In the future, our entry into new markets may require obtaining additional license grants from Boeing and/or from other third parties. If we are unable to negotiate additional license rights on acceptable terms (or at all) from Boeing and/or other third parties as the need arises, our ability to enter new markets may be materially restricted. In addition, we may be subject to restrictions in future licenses granted to us that may materially restrict our use of third party intellectual property.

Our success depends in part on the success of our research and development initiatives.

We spent approximately \$51.5 million on research and development during the twelve months ended December 31, 2010. Our significant expenditures on our research and development efforts may not create any new sales opportunities or increases in productivity that are commensurate with the level of resources invested.

We are in the process of developing specific technologies and capabilities in pursuit of new business and in anticipation of customers going forward with new programs. If any such programs do not go forward or are not successful, we may be unable to recover the costs incurred in anticipation of such programs and our profitability and revenues may be materially adversely affected.

Any future business combinations, acquisitions, mergers, or joint ventures will expose us to risks, including the risk that we may not be able to successfully integrate these businesses or achieve expected operating synergies.

We actively consider strategic transactions from time to time. We evaluate acquisitions, joint ventures, alliances and co-production programs as opportunities arise, and we may be engaged in varying levels of negotiations with potential competitors at any time. We may not be able to effect transactions with strategic alliance, acquisition or co-production program candidates on commercially reasonable terms or at all. If we enter into these transactions, we also may not realize the benefits we anticipate. In addition, we may not be able to obtain additional financing for these transactions. The integration of companies that have previously been operated separately involves a number of risks, including, but not limited to:

demands on management related to the increase in size after the transaction;

the diversion of management's attention from the management of daily operations to the integration of operations;

difficulties in the assimilation and retention of employees;

difficulties in the assimilation of different cultures and practices, as well as in the assimilation of geographically dispersed operations and personnel, who may speak different languages;

difficulties combining operations that use different currencies or operate under different legal structures;

difficulties in the integration of departments, systems (including accounting systems), technologies, books and records and procedures, as well as in maintaining uniform standards, controls (including internal accounting controls), procedures and policies;

compliance with the Foreign Corrupt Practices Act and other applicable anti-bribery laws; and

constraints (contractual or otherwise) limiting our ability to consolidate, rationalize and/or leverage supplier arrangements to achieve integration.

Consummating any acquisitions, joint ventures, alliances or co-production programs could result in the incurrence of additional debt and related interest expense, as well as unforeseen contingent liabilities.

We could be required to make future contributions to our defined benefit pension and post-retirement benefit plans as a result of adverse changes in interest rates and the capital markets.

Our estimates of liabilities and expenses for pensions and other post-retirement benefits incorporate significant assumptions including the rate used to discount the future estimated liability, the long-term rate of return on plan assets and several assumptions relating to the employee workforce (salary increases, medical costs, retirement age

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and mortality). A dramatic decrease in the fair value of our plan assets resulting from movements in the financial markets may cause the status of our plans to go from an over-funded status to an under-funded status and result in cash funding requirements to meet any minimum required funding levels. Our results of operations, liquidity, or shareholders' equity in a particular period could be affected by a decline in the rate of return on plan assets, the rate used to discount the future estimated liability, or changes in employee workforce assumptions.

Risk Factors Related to Our Capital Structure

The interests of our controlling stockholder may conflict with your interests.

Upon completion of this offering, Onex Partners LP, Onex Corporation and their respective partners and affiliates that beneficially own our class B common stock, herein referred to collectively as the "Onex entities", will own 22,411,638 shares of our class B common stock, or 20,911,640 shares of our class B common stock, if the underwriter's option to purchase additional shares is exercised in full. Our class A common stock has one vote per share, while our class B common stock has ten votes per share on all matters to be voted on by our stockholders. Consequently, upon completion of this offering, the Onex entities will control approximately 64% of the combined voting power of our outstanding common stock (approximately 62% if the underwriter's option to purchase additional shares is exercised in full). Accordingly, and for so long as the Onex entities continue to hold class B common stock that represents at least 10% of the total number of shares of common stock outstanding, Onex will have the power to determine all matters submitted to a vote of our stockholders, including the election of directors and approval of significant corporate transactions such as amendments to our certificate of incorporation, mergers and the sale of all or substantially all of our assets. Onex could cause certain corporate actions to be taken even if the interests of Onex conflict with the interests of our other stockholders. This concentration of voting power could have the effect of deterring or preventing a change in control of Spirit Holdings that might otherwise be beneficial to our stockholders. Gerald W. Schwartz, the Chairman, President and Chief Executive Officer of Onex Corporation, owns shares representing a majority of the voting rights of the shares of Onex Corporation. See "Selling Stockholders" and "Description of Capital Stock" in this prospectus supplement and "Stock Ownership" in our Proxy Statement on Schedule 14A for the 2011 Annual Meeting of Stockholders, which is incorporated by reference in this prospectus supplement.

Our substantial debt could adversely affect our financial condition and our ability to operate our business. The terms of the indentures governing our long-term bonds and our senior secured credit facility impose significant operating and financial restrictions on our company and our subsidiaries, which could also adversely affect our operating flexibility and put us at a competitive disadvantage by preventing us from capitalizing on business opportunities.

As of December 31, 2010, we had total debt of approximately \$1,196.8 million, including approximately \$566.1 million of borrowings under our senior secured credit facility, \$594.2 million of long-term bonds, a \$18.2 million Malaysian loan, approximately \$17.2 million of capital lease obligations, and \$1.1 million in other debt obligations. In addition to our debt, as of December 31, 2010, we had \$42.0 million of letters of credit and letters of guarantee outstanding.

The terms of the indentures governing our long-term bonds and our senior secured credit facility impose significant operating and financial restrictions on us, which limit our ability, among other things, to:

incur additional debt or issue preferred stock;

pay dividends or make distributions to our stockholders;

repurchase or redeem our capital stock;

make investments;

incur liens without granting equal and ratable liens to the holders of the notes;

enter into transactions with our stockholders and affiliates;

sell certain assets;

acquire the assets of, or merge or consolidate with, other companies; and

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incur restrictions on the ability of our subsidiaries to make distributions or transfer assets to us.

These restrictions could have consequences, including the following:

making it more difficult for us to satisfy our obligations with respect to our debt;

limiting our ability to obtain additional financing to fund future working capital, capital expenditures, strategic acquisitions or other general corporate requirements;

requiring a substantial portion of our cash flows to be dedicated to debt service payments instead of other purposes;

increasing our vulnerability to general adverse economic and industry conditions;

limiting our financial flexibility in planning for and reacting to changes in the industry in which we compete;

placing us at a disadvantage compared to other, less leveraged competitors;

having a material adverse effect on us if we fail to comply with the covenants in the indentures governing our long-term bonds or in the instruments governing our other debt; and

increasing our cost of borrowing.

Our existing senior secured revolving credit facility, which matures on September 30, 2014, is a significant source of liquidity for our business. The failure to extend or renew this agreement could have a significant effect on our ability to invest sufficiently in our programs, fund day to day operations, or pursue strategic opportunities.

We cannot assure you that we will be able to maintain compliance with the covenants in the agreements governing our indebtedness in the future or, if we fail to do so, that we will be able to obtain waivers from the lenders and/or amend the covenants.

In addition, despite the restrictions and limitations described above, subject to the limits contained in the agreements governing our indebtedness, we may be able to incur additional debt from time to time to finance working capital, capital expenditures, investments or acquisitions, or for other purposes. The terms of any future indebtedness we may incur could include more restrictive covenants. If we incur additional debt, the risks related to our high level of debt could intensify.

In addition, if we are unable to generate sufficient cash flow to service our debt and meet our other commitments, we may need to refinance all or a portion of our debt, sell material assets or operations, or raise additional debt or equity capital. We cannot provide assurance that we could effect any of these actions on a timely basis, on commercially reasonable terms or at all, or that these actions would be sufficient to meet our capital requirements. In addition, the terms of our existing or future debt agreements may restrict us from effecting certain or any of these alternatives.

Global credit markets are still recovering from the 2008 financial crisis, and are subject to numerous risk factors, including but not limited to concerns over sovereign debt in Europe and elsewhere; the impact and effectiveness of new financial legislation and regulation in the United States and Europe; the impact of those reforms on borrowers, financial institutions and credit rating agencies; potential systemic risk resulting from the interrelationship of credit market products and participants; global governmental and central banking policies; and conflict and political

instability in the Middle East and Asia. There can be no assurance that access to credit markets will continue to be available to us.

Any reduction in our credit ratings could materially and adversely affect our business or financial condition.

On October 7, 2010, our corporate credit rating at Standard & Poor's Rating Services was affirmed at BB and our corporate credit rating at Moody's Investor Services was upgraded to Ba2 from Ba3. The ratings reflect the agencies' assessment of our ability to pay interest and principal on our debt securities and credit agreements. A rating is not a recommendation to purchase, sell or hold securities. Each rating is subject to revision or withdrawal at any time by the assigning rating organization. Each rating agency has its own methodology for assigning ratings and, accordingly, each rating should be considered independently of all other ratings. Lower ratings would typically result in higher interest costs of debt securities when they are sold, and could make it more difficult to issue future

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debt securities. In addition, a downgrade in our fixed or revolving long-term debt rating could result in an increase in borrowing costs under our senior secured credit facility. Any downgrade in our credit ratings could thus have a material adverse effect on our business or financial condition.

Spirit Holdings certificate of incorporation and by-laws and our supply agreements with Boeing contain provisions that could discourage another company from acquiring us and may prevent attempts by our stockholders to replace or remove our current management.

Provisions of Spirit Holdings certificate of incorporation and by-laws may discourage, delay or prevent a merger or acquisition that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace or remove our current board of directors. These provisions include:

multi-vote shares of common stock, which are owned by the Onex entities and management stockholders;

advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted on by stockholders at stockholder meetings; and

the authority of the board of directors to issue, without stockholder approval, up to 10 million shares of preferred stock with such terms as the board of directors may determine and, after giving effect to this offering, an additional 56,979,523 shares of class A common stock (not including shares issued but subject to vesting requirements under our benefit plans and shares reserved for issuance upon conversion of outstanding shares of class B common stock) and an additional 124,876,308 shares of class B common stock (126,422,414 shares of class B common stock if the underwriter's option to purchase additional shares is exercised in full) (not including shares issued but subject to vesting requirements under our benefit plans).

In addition, our supply agreements with Boeing include provisions giving Boeing the ability to terminate the agreements in the event any of certain disqualified persons acquire a majority of Spirit's direct or indirect voting power or all or substantially all of Spirit's assets. See *Business Our Relationship with Boeing* in our Annual Report on Form 10-K for the year ended December 31, 2010, which we incorporate by reference into this prospectus supplement.

Spirit Holdings is a controlled company within the meaning of the New York Stock Exchange rules and, as a result, qualifies for, and relies on, exemptions from certain corporate governance requirements.

Because the Onex entities own more than 50% of the combined voting power of the common stock of Spirit Holdings, Spirit Holdings is deemed a controlled company under the rules of the New York Stock Exchange, or NYSE. As a result, Spirit Holdings qualifies for, and relies upon, the controlled company exception to the board of directors and committee composition requirements under the rules of the NYSE. Pursuant to this exception, Spirit Holdings is exempt from rules that would otherwise require that Spirit Holdings board of directors be comprised of a majority of independent directors (as defined under the rules of the NYSE), and that Spirit Holdings compensation committee and corporate governance and nominating committee be comprised solely of independent directors, so long as the Onex entities continue to own more than 50% of the combined voting power of the common stock of Spirit Holdings. Spirit Holdings board of directors consists of ten directors, six of whom qualify as independent. Spirit Holdings compensation and corporate governance and nominating committees are not comprised solely of independent directors. Spirit Holdings does not currently rely on the exemption related to board composition, although it may do so in the future. See *Corporate Governance and the Board of Directors and Committees of the Board of Directors* in our in our Proxy Statement on Schedule 14A for the 2011 Annual Meeting of Stockholders, which is incorporated by

reference in this prospectus supplement.

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USE OF PROCEEDS

We will not receive any proceeds from the sale of shares of class A common stock in this offering by the selling stockholders. See Selling Stockholders and Underwriting.

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Table of Contents**CAPITALIZATION**

The following table sets forth the Company's capitalization at December 31, 2010. This table should be read in conjunction with the information included under the headings "Prospectus Summary", "Summary Financial Information" included herein and under the headings "Selected Consolidated Financial Information and Other Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and with the Company's audited consolidated financial statements and related notes thereto included in the Annual Report on Form 10-K for the fiscal year ended December 31, 2010 which is incorporated by reference into this prospectus supplement.

| | As of December 31, 2010 (Dollars in millions) |
|--|--|
| Debt: | |
| Revolving Credit Facility | \$ |
| Senior secured debt (short and long-term) | 566.1 |
| Long-term bond debt (due 2017 and 2020) | 594.2 |
| Malaysian Term Loan due May 2017 | 18.2 |
| Present value of capital lease obligations | 17.2 |
| Other | 1.1 |
| | |
| Total Debt | \$ 1,196.8 |
| Equity: | |
| Preferred stock, par value \$0.01 per share, 10,000,000 shares authorized, no shares issued | \$ |
| Common stock, Class A par value \$0.01 per share, 200,000,000 shares authorized, 107,201,314 shares issued, respectively | 1.1 |
| Common stock, Class B par value \$0.01 per share, 150,000,000 shares authorized, 34,897,388 shares issued, respectively | 0.3 |
| Additional paid-in capital | 983.6 |
| Accumulated other comprehensive loss | (75.3) |
| Retained earnings | 900.7 |
| Total shareholders' equity | 1,810.4 |
| Noncontrolling interest | 0.5 |
| | |
| Total equity | 1,810.9 |
| | |
| Total capitalization | \$ 3,007.7 |

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Our class A common stock has been listed for trading on the NYSE under the symbol **SPR** since November 21, 2006. Prior to that time, there was no public market for our stock. As of March 31, 2011, there were approximately 249 holders of record of class A common stock. However, we believe that many additional holders of our class A common stock are unidentified because a substantial number of shares are held of record by brokers or dealers for their customers in street names. The closing price on April 8, 2011 was \$24.03 per share as reported by the NYSE.

| Quarter Ended | High Price (\$) | Low Price (\$) |
|----------------------|----------------------------|---------------------------|
| March 31, 2009 | 14.53 | 8.03 |
| June 30, 2009 | 16.94 | 10.68 |
| September 30, 2009 | 18.69 | 12.08 |
| December 31, 2009 | 20.50 | 15.79 |
| March 31, 2010 | 23.69 | 16.50 |
| June 30, 2010 | 23.88 | 17.26 |
| September 30, 2010 | 21.53 | 18.57 |
| December 31, 2010 | 21.75 | 18.08 |

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We did not pay any cash dividends in 2009 or 2010 and we currently do not intend to pay cash dividends and, under certain circumstances, we are prohibited from doing so under credit agreements governing our credit facilities and the indentures governing our long term bonds. Our future dividend policy will depend on the requirements of financing agreements to which we may be a party. Any future determination to pay dividends will be at the discretion of our Board of Directors and will depend upon, among other factors, our results of operations, financial condition, capital requirements and contractual restrictions.

SELLING STOCKHOLDERS

The following table shows information with respect to the beneficial ownership of our common stock as of March 31, 2011, and as adjusted to reflect the sale of our class A common stock being offered in this offering, by each selling stockholder.

| Selling Stockholder | Before Offering | | | Shares Being Sold in Offering | | Shares Beneficially Owned After Offering Assuming the Underwriter's Option to Purchase Additional Shares Option is Not Exercised | | | Shares Beneficially Owned After Offering Assuming the Underwriter's Option to Purchase Additional Shares is Exercised | |
|---------------------|--|---------------------------------------|----------------------------|--|--|--|------------------------------------|----------------------------|---|----------------------------|
| | Number of Shares Beneficially Owned(1) (2)(3) | Percentage of Class A Common Stock(4) | Percentage of Voting Power | Assuming the Underwriter's Option to Purchase Additional Shares is Not Exercised | Assuming the Underwriter's Option to Purchase Additional Shares is Exercised | Number of Shares | Percentage of Class A Common Stock | | Number of Shares | Percentage of Voting Power |
| | | | | | | | Percentage of Class A Common Stock | Percentage of Voting Power | | |
| (5) | 18,197,952 class B | 13.0% | 41.3% | 5,614,634 | 6,456,826 | 12,583,318 | 9.0% | 35.8% | 11,741,126 | |
| (6) | 8,604,867 class B | 6.2% | 19.5% | 2,654,870 | 3,053,101 | 5,949,997 | 4.2% | 16.9% | 5,551,766 | |
| est LP(7) | 4,892,892 class B | 3.5% | 11.1% | 1,509,610 | 1,736,052 | 3,383,282 | 2.4% | 9.6% | 3,156,840 | |
| | 530,376 class B | * | 1.2% | 163,638 | 188,184 | 366,738 | /* | 1.0% | 342,192 | |
| s LP(9) | 185,551 class B | * | * | 57,248 | 65,835 | 128,303 | * | * | 119,716 | |
| | | * | * | 307,375 | 353,483 | | * | * | | |

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Collective shares of class A common stock and class B common stock represent less than 1% of all common stock.

* Represents less than 1%.

- (1) The amounts and percentages of our common stock beneficially owned are reported on the basis of regulations of the SEC governing the determination of beneficial ownership of securities. Under the rules of the SEC, a person is deemed to be a beneficial owner of a security if that person has or shares voting power, which includes the power to vote or direct the voting of such security, or investment power, which includes the power to dispose of or to direct the disposition of such security. A person is also deemed to be a beneficial owner of any securities of which that person has a right to acquire beneficial ownership within 60 days. Under these rules, more than one person may be deemed to be a beneficial owner of such securities as to which such person has an economic interest.
- (2) On each matter submitted to the stockholders for their vote, our class A common stock is entitled to one vote per share and our class B common stock is entitled to ten votes per share, reducing to one vote per share under certain

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limited circumstances. Except as required by law, our class A and class B common stock vote together on all matters submitted to stockholders for their vote.

- (3) Each share of class B common stock may be converted at any time at the option of the holder into one share of class A common stock. Accordingly, each beneficial owner of shares of class B common stock is deemed the beneficial owner of the same number of shares of class A common stock. See Description of Capital Stock Common Stock Conversion Rights.
- (4) Assumes conversion of class B common stock into shares of our class A common stock on a 1-for-1 basis.
- (5) All of the shares of class B common stock owned by Onex Partners LP may be deemed owned beneficially by each of Onex Partners GP LP, Onex Partners GP, Inc. and Onex Corporation. The address for Onex Partners LP is c/o Onex Investment Corporation, 712 Fifth Avenue, New York, New York 10019.
- (6) All of the shares of class B common stock owned by OAH Wind LLC may be deemed owned beneficially by each of Onex American Holdings Subco LLC, Onex American Holdings II LLC and Onex Corporation. The address for OAH Wind LLC is 421 Leader Street, Marion, Ohio 43302.
- (7) All of the shares of class B common stock owned by Onex Spirit Co-Invest LP may be deemed owned beneficially by each of Onex Partners GP LP, Onex Partners GP, Inc. and Onex Corporation. The address for Onex Spirit Co-Invest LP is c/o Onex Investment Corporation, 712 Fifth Avenue, New York, New York 10019.
- (8) All of the shares of class B common stock owned by Wind EI II LLC may be deemed owned beneficially by each of Onex American Holdings II LLC, Wind Executive Investco LLC and Onex Corporation. The address for Wind EI II LLC is c/o Onex Investment Corporation, 712 Fifth Avenue, New York, New York 10019.
- (9) All of the shares of class B common stock owned by Onex US Principals LP may be deemed owned beneficially by each of Onex American Holdings GP LLC and Onex Corporation. The address for Onex US Principals LP is 421 Leader Street, Marion, Ohio 43302.

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**CERTAIN U.S. FEDERAL INCOME TAX CONSEQUENCES
TO HOLDERS OF CLASS A COMMON STOCK**

The following summary describes certain material federal income tax consequences arising from the purchase, ownership and disposition of our class A common stock acquired in this offering. This discussion does not cover all aspects of U.S. federal income taxation that may be relevant to each holder due to the particular circumstances of such holder or, except as expressly stated, address estate and gift tax consequences, any aspect of the U.S. federal alternative minimum tax, state, local or other tax consequences or non-U.S. tax laws. This summary is based on the provisions of the Internal Revenue Code of 1986, as amended (the Code), final, temporary and proposed United States Treasury regulations promulgated thereunder, and the administrative and judicial interpretations thereof, all as in effect as of the date of this prospectus supplement and all of which are subject to change, possibly with retroactive effect. In particular, this summary does not address the considerations that may be applicable to (a) particular classes of taxpayers, including financial institutions, insurance companies, small business investment companies, mutual funds, partnerships or other pass-through entities or investors in such entities, expatriates, broker-dealers and tax-exempt organizations, (b) holders with a functional currency other than the U.S. dollar or (c) holders of 10% or more of the total combined voting power of the Company's shares. This summary deals only with the tax treatment of holders who own our class A common stock as capital assets as defined in Section 1221 of the Code.

THE SUMMARY OF U.S. FEDERAL INCOME TAX CONSIDERATIONS SET FORTH BELOW IS FOR GENERAL INFORMATION ONLY AND DOES NOT CONSTITUTE TAX ADVICE. ALL PROSPECTIVE PURCHASERS SHOULD CONSULT THEIR OWN TAX ADVISORS AS TO THE PARTICULAR TAX CONSEQUENCES TO THEM OF THE PURCHASE, OWNERSHIP, SALE OR OTHER DISPOSITION OF SECURITIES INCLUDING THE EFFECTS OF APPLICABLE STATE, LOCAL, NON-U.S. OR OTHER TAX LAWS, POSSIBLE CHANGES IN THE TAX LAWS AND THE POSSIBLE APPLICABILITY OF INCOME TAX TREATIES.

As used herein, the term U.S. Holder means a beneficial owner of our class A common stock that is for U.S. federal income tax purposes:

a U.S. citizen or individual resident in the United States,

a corporation, or other entity treated as a corporation created or organized under the laws of the United States, any state thereof or the District of Columbia,

an estate the income of which is subject to U.S. federal income taxation regardless of its source, or

a trust (i) if a U.S. court can exercise primary supervision over the administration of such trust and one or more U.S. fiduciaries have the authority to control all of the substantial decisions of such trust or (ii) that has a valid election in effect under applicable U.S. Treasury regulations to be treated as a United States person.

Except as provided below in the discussion of estate tax, the term Non-U.S. Holder means a beneficial owner of our class A common stock that is, for U.S. federal income tax purposes, a nonresident alien individual or a corporation, trust or estate that is not a U.S. Holder.

If a partnership, including any entity treated as a partnership for U.S. federal income tax purposes, is a holder of our class A common stock, the tax treatment of a partner in the partnership will generally depend upon the status of the partner and the activities of the partnership. If you are a partnership, or a partner in such a partnership, you should

consult your own tax advisor regarding the tax consequences of the purchase, ownership and disposition of our class A common stock.

Dividends

We do not anticipate paying cash dividends on our class A common stock in the foreseeable future. See Price Range of Class A Common Stock and Dividend Policy. If distributions are paid on shares of our class A common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, it will constitute a return of capital that

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is applied against and reduces, but not below zero, a holder's adjusted tax basis in our class A common stock. Any remainder will constitute gain from the deemed sale of the class A common stock. See *Certain U.S. Federal Income Tax Consequences to Holders of Class A Common Stock – Dispositions*.

U.S. Holders. Any distributions by us treated as dividends will be treated as U.S. source dividend income and will be eligible for the dividends-received deduction generally allowed to U.S. corporations under Section 243 of the Code (subject to certain limitations and holding period requirements).

For taxable years beginning before January 1, 2013, certain qualified dividend income will be taxable to a non-corporate U.S. Holder at the special reduced rate normally applicable to capital gains (subject to certain limitations). A U.S. Holder will be eligible for this reduced rate only if it has held our class A common stock for more than 60 days during the 121-day period beginning 60 days before the ex-dividend date. If no legislative action is taken, then for taxable years beginning on or after January 1, 2013, dividends will be subject to tax at higher ordinary income rates.

Non-U.S. Holders. Any distributions treated as dividends on our stock paid to a Non-U.S. Holder generally will be subject to withholding of U.S. federal income tax at a 30% rate on the gross amount of the dividend or such lower rate as may be provided by an applicable income tax treaty. Dividends that are effectively connected with a Non-U.S. Holder's conduct of a trade or business in the United States and, if a tax treaty applies, attributable to a permanent establishment or fixed base in the United States, known as U.S. trade or business income, are generally not subject to the 30% withholding tax if the Non-U.S. Holder files the appropriate U.S. Internal Revenue Service form with the payor. However, such U.S. trade or business income, net of specified deductions and credits, generally is taxed at the same graduated rates as applicable to U.S. persons. Any U.S. trade or business income received by a Non-U.S. Holder that is a corporation may also, under certain circumstances, be subject to an additional branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty.

A Non-U.S. Holder that claims the benefit of an applicable income tax treaty generally will be required to satisfy applicable certification and other requirements prior to the distribution date. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under a relevant income tax treaty.

A Non-U.S. Holder that is eligible for a reduced rate of U.S. federal withholding tax or other exclusion from withholding under an income tax treaty but that did not timely provide required certifications or other requirements, or that has received a distribution subject to withholding in excess of the amount properly treated as a dividend, may obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for refund with the U.S. Internal Revenue Service.

Dispositions

U.S. Holders. A U.S. Holder will recognize gain or loss for U.S. federal income tax purposes upon the sale or other taxable disposition of our class A common stock in an amount equal to the difference between the amount realized and the U.S. Holder's adjusted tax basis for such stock. Such gain or loss will be capital gain or loss and will be long-term capital gain or loss if the stock had been held for more than one year. If the U.S. Holder's holding period on the date of the sale or exchange is one year or less, such gain or loss will be short-term capital gain or loss. However, if a U.S. Holder has received a dividend to which the special reduced rate of tax, discussed above, applies, and which exceeds 10% of the U.S. Holder's basis for the stock (taking into account certain rules that aggregate dividends for this purpose), any loss on sale or other disposition generally will be a long-term capital loss to the extent of that excess, regardless of the U.S. Holder's actual holding period. Any gain or loss recognized on the sale or other disposition of our class A common stock will generally be U.S. source income. Any capital loss realized upon sale, exchange or other disposition of our class A common stock is generally deductible only against capital gains and not against

ordinary income, except that in the case of certain noncorporate taxpayers, a capital loss may be deductible to the extent of capital gains plus ordinary income of up to \$3,000.

A U.S. Holder's tax basis for his, her or its shares of our class A common stock will generally be the purchase price paid therefor by such U.S. Holder (reduced by amounts of any distributions treated as a return of capital received by such U.S. Holder).

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Non-U.S. Holders. A Non-U.S. Holder generally will not be subject to U.S. federal income tax (or withholding thereof) on gain recognized on a disposition of our class A common stock unless:

the gain is U.S. trade or business income, in which case such gain generally will be taxed in the same manner as gains of U.S. persons, and such gains may also be subject to the branch profits tax in the case of a corporate Non-U.S. Holder;

the Non-U.S. Holder is an individual who is present in the United States for more than 182 days in the taxable year of the disposition and who meets certain other requirements, in which case such holder generally will be subject to U.S. federal income tax at a rate of 30% (or a reduced rate under an applicable treaty) on the amount by which capital gains allocable to U.S. sources (including gains from the sale, exchange, retirement or other disposition of the class A common stock) exceed capital losses allocable to U.S. sources; or

we are or have been a U.S. real property holding corporation for U.S. federal income tax purposes at any time during the shorter of the five-year period ending on the date of disposition or the period that the Non-U.S. Holder held our class A common stock (the applicable period).

Generally, a corporation is a U.S. real property holding corporation if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market values of its worldwide real property interests plus its other assets used or held for use in a trade or business. The tax relating to stock in a U.S. real property holding corporation generally will not apply to a Non-U.S. Holder whose holdings, actual or constructive, at all times during the applicable period, constituted 5% or less of our class A common stock, provided that our class A common stock was regularly traded on an established securities market. We believe we have never been, are not currently and are not likely to become a U.S. real property holding corporation for U.S. federal income tax purposes in the future.

Information Reporting and Backup Withholding. We must report annually to the U.S. Internal Revenue Service and to each holder the amount of dividends paid to that holder and the tax withheld with respect to those dividends. Copies of the information returns reporting those dividends and the amount of tax withheld may also be made available to the tax authorities in the country in which a Non-U.S. Holder is a resident under the provisions of an applicable income tax treaty.

Backup withholding, currently imposed at a rate of 28%, may apply to payments of dividends paid by us. If you are a U.S. Holder, backup withholding will apply if you fail to provide an accurate taxpayer identification number or certification of exempt status or fail to report all interest and dividends required to be shown on your federal income tax returns. Certain U.S. Holders (including, among others, corporations) are not subject to backup withholding.

If you are a Non-U.S. Holder, backup withholding will apply to dividend payments if you fail to provide us with the required certification that you are not a U.S. person.

Payments of the proceeds from a disposition (including a redemption) effected outside the United States by or through a non-US. broker generally will not be subject to information reporting or backup withholding. However, information reporting, but generally not backup withholding, will apply to such a payment if the broker has certain connections with the United States unless the broker has documentary evidence in its records that the beneficial owner of the disposed stock is a Non-U.S. Holder and either specified conditions are met or an exemption is otherwise established. Backup withholding and information reporting will apply to dispositions made by or through a U.S. office of any broker (U.S. or foreign), unless an exemption is established.

Backup withholding is not an additional tax. Any amounts withheld from a payment to you that result in an overpayment of taxes generally will be refunded, or credited against your U.S. federal income tax liability, if any, provided that the required information is timely furnished to the U.S. Internal Revenue Service.

Holders should consult their own tax advisors regarding application of backup withholding and information reporting in their particular circumstance and the availability of, and procedure for obtaining, an exemption from backup withholding and information reporting under current U.S. Treasury regulations.

Federal Estate Tax. Class A common stock owned or treated as owned by an individual who is a Non-U.S. Holder (as specifically defined for U.S. federal estate tax purposes) at the time of death will be included in such individual's gross estate for U.S. federal estate tax purposes, unless an applicable treaty provides otherwise.

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DESCRIPTION OF CAPITAL STOCK

The following description summarizes the material terms of our capital stock and provisions of our amended and restated certificate of incorporation and by-laws. This description also summarizes the principal agreements relating to our common stock and stock appreciation rights. Because this is only a summary, it does not contain all of the information that may be important to you. For a complete description, you should refer to our amended and restated certificate of incorporation and by-laws and the stockholder agreements referred to below, copies of which are incorporated by reference as exhibits to the registration statement of which this prospectus supplement is a part, and to the applicable provisions of the Delaware General Corporation Law, or the DGCL. References to our certificate of incorporation and to our by-laws are references to these documents, as amended and restated.

Overview

Our authorized capital stock consists of:

200,000,000 shares of class A common stock, par value \$0.01 per share,

150,000,000 shares of class B common stock, par value \$0.01 per share, and

10,000,000 shares of preferred stock, par value \$0.01 per share.

Of the 200,000,000 authorized shares of class A common stock, the selling stockholders are offering 10,307,375 shares pursuant to this offering. In the event the underwriter's option to purchase additional shares is exercised in full, the selling stockholders will sell an additional 1,546,106 shares in the offering. On the closing of this offering, if the underwriter's option to purchase additional shares is not exercised, 116,626,952 shares of class A common stock will be outstanding, 23,509,546 shares of class B common stock will be outstanding and held by the Onex entities, our named executive officers, our directors and certain other employees and there will be no shares of preferred stock outstanding. If the underwriter's option to purchase additional shares is exercised in full, the number of shares of class A common stock outstanding will increase by 1,546,106 and the number of shares of class B common stock outstanding will decrease by 1,484,460.

We refer to our class A common stock and our class B common stock together as our common stock.

Our Controlling Stockholders

After this offering, the Onex entities will control approximately 64% of our combined voting power (approximately 62% if the underwriter's option to purchase additional shares is exercised in full). Accordingly, and for so long as the Onex entities continue to hold class B common stock that represents at least 10% of the total number of shares of common stock outstanding, the Onex entities will have the power to determine all matters submitted to a vote of our stockholders, including the election of directors and approval of significant corporate transactions such as amendments to our certificate of incorporation, mergers and the sale of all or substantially all of our assets. The Onex entities could cause certain corporate actions to be taken even if the interests of the Onex entities conflict with the interests of our other stockholders. This concentration of voting power could have the effect of deterring or preventing a change in control of Spirit Holdings that might otherwise be beneficial to our stockholders. Gerald W. Schwartz, the Chairman, President and Chief Executive Officer of Onex Corporation, owns shares representing a majority of the voting rights of the shares of Onex Corporation. The Onex entities will hold their equity interest in us through their ownership of shares of our class B common stock.

Common Stock

The class A common stock and the class B common stock are identical in all respects, except with respect to voting and except that each share of class B common stock is convertible into one share of class A common stock at the option of the holder.

Voting Rights. Generally, on all matters on which the holders of common stock are entitled to vote, the holders of the class A common stock and the class B common stock vote together as a single class. On all matters with respect to which the holders of our common stock are entitled to vote, each outstanding share of class A common stock is entitled to one vote and each outstanding share of class B common stock is entitled to ten votes. If

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the Minimum Condition (as defined below) is no longer satisfied, the number of votes per share of class B common stock will be reduced automatically to one vote per share. The Minimum Condition is satisfied so long as the total number of outstanding shares of class B common stock is at least 10% of the total number of shares of common stock outstanding.

Class A Common Stock. In addition to the other voting rights or power to which the holders of class A common stock are entitled, holders of class A common stock are entitled to vote as a separate class on (i) any proposal to alter, repeal or amend our certificate of incorporation which would adversely affect the powers, preferences or rights of the holders of class A common stock; and (ii) any proposed merger or consolidation of our company with any other entity if, as a result, shares of class B common stock would be converted into or exchanged for, or receive, any consideration that differs from that applicable to the shares of class A common stock as a result of such merger or consolidation, other than a difference limited to preserving the relative voting power of the holders of the class A common stock and the class B common stock. In respect of any matter as to which the holders of the class A common stock are entitled to a class vote, such holders are entitled to one vote per share, and the affirmative vote of the holders of a majority of the shares of class A common stock outstanding is required for approval.

Class B Common Stock. In addition to the other voting rights or power to which the holders of class B common stock are entitled, holders of class B common stock are entitled to vote together as a separate class on (i) any proposal to alter, repeal or amend our certificate of incorporation which would adversely affect the powers, preferences or rights of the holders of class B common stock; and (ii) any proposed merger or consolidation of our company with any other entity if, as a result, shares of class B common stock would be converted into or exchanged for, or receive, any consideration that differs from that applicable to the shares of class A common stock as a result of such merger or consolidation, other than a difference limited to preserving the relative voting power of the holders of the class A common stock and the class B common stock. In respect of any matter as to which the holders of the class B common stock are entitled to a class vote, such holders of class B common stock are entitled to one vote per share and the affirmative vote of the holders of a majority of the shares of class B common stock is required for approval.

Dividend Rights. Subject to preferences that may apply to shares of preferred stock outstanding at the time, holders of our outstanding common stock are entitled to any dividend declared by the board of directors out of funds legally available for this purpose. No dividend may be declared on the class A or class B common stock unless at the same time an equal dividend is paid on every share of class A and class B common stock. Dividends paid in shares of our common stock must be paid, with respect to a particular class of common stock, in shares of that class.

Conversion Rights. The class A common stock is not convertible. Each share of class B common stock may be converted at any time at the option of the holder into one share of class A common stock. The class B common stock will be converted automatically into class A common stock upon a transfer thereof to any person other than (i) an Onex entity, (ii) an affiliate of an Onex entity, (iii) any individual employed by us at the time of the transfer and any affiliate of any such individual or (iv) any other person or entity who obtained class B common stock through a direct issuance by Spirit Holdings. In addition, the holders of a majority of the outstanding shares of class B common stock may force the conversion of all, but not less than all, of the class B common stock into class A common stock.

Preemptive or Similar Rights. Holders of our common stock are not entitled to preemptive or other similar rights to purchase any of our securities.

Right to Receive Liquidation Distributions. Upon our voluntary or involuntary liquidation, dissolution or winding up, the holders of our common stock are entitled to receive pro rata our assets which are legally available for distribution, after payment of all debts and other liabilities and subject to the rights of any holders of preferred stock then outstanding, to the holders of class A and class B common stock.

NYSE Listing. Our class A common stock is listed on the NYSE under the symbol `SPR`. The class B common stock is not listed on any securities exchange.

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Preferred Stock

Our board of directors may, without further action by our stockholders, from time to time, direct the issuance of up to 10,000,000 shares of preferred stock in series and may, at the time of issuance, determine the rights, preferences and limitations of each series. Satisfaction of any dividend preferences of outstanding shares of preferred stock would reduce the amount of funds available for the payment of dividends on shares of our common stock. Holders of shares of preferred stock may be entitled to receive a preference payment in the event of our liquidation, dissolution or winding-up before any payment is made to the holders of shares of our common stock. Under specified circumstances, the issuance of shares of preferred stock may render more difficult or tend to discourage a merger, tender offer or proxy contest, the assumption of control by a holder of a large block of our securities or the removal of incumbent management. Upon the affirmative vote of a majority of the total number of directors then in office, the board of directors, without stockholder approval, may issue shares of preferred stock with voting and conversion rights which could adversely affect the holders of shares of our common stock. Upon consummation of this offering, there will be no shares of preferred stock outstanding, and we have no present intention to issue any shares of preferred stock.

Anti-Takeover Effects of our Certificate of Incorporation and By-Laws

Our certificate of incorporation and by-laws contain provisions that are intended to enhance the likelihood of continuity and stability in the composition of our board of directors.

These provisions also may have the effect of delaying, deferring or preventing a future takeover or change in control unless the takeover or change in control is approved by our board of directors.

Class B Common Stock

Our class B common stock is entitled to ten votes per share (reducing to one vote per share under certain limited circumstances). Upon completion of this offering, the 23,509,546 outstanding shares of class B common stock will control approximately 67% of the combined voting power of our outstanding common stock (22,025,086 outstanding shares of class B common stock and approximately 65% of the combined voting power of our outstanding common stock if the underwriter's option to purchase additional shares is exercised in full). Upon completion of this offering, the Onex entities will own approximately 95% of our class B common stock and will control approximately 64% of the combined voting power of our outstanding common stock (approximately 95% and approximately 62%, respectively, if the underwriter's option to purchase additional shares is exercised in full). Almost all of the remaining shares of class B common stock will be held by our management and directors. The existence and voting rights of the class B common stock may have the effect of deferring or preventing hostile takeovers or delaying or preventing changes in control or management of Spirit Holdings.

Undesignated Preferred Stock

The ability to authorize undesignated preferred stock makes it possible for our board of directors to issue one or more series of preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of us. This ability may have the effect of deferring hostile takeovers or delaying changes in control or management of our company.

Advance Notice Requirements for Stockholder Proposals and Directors Nominations

Our by-laws provide that stockholders seeking to bring business before our annual meeting of stockholders, or to nominate candidates for election as directors at our annual meeting, must provide timely notice of their intent in writing. To be timely under our bylaws and rules promulgated under the Securities Exchange Act of 1934, as amended

(the Exchange Act), a stockholder's notice must be delivered to, or mailed and received at, our principal executive offices not less than 120 days prior to the first anniversary of the date of our notice of annual meeting provided with respect to the previous year's annual meeting of stockholders; *provided*, that if no annual meeting of stockholders was held in the previous year or the date of the annual meeting of stockholders has been changed to be more than 30 calendar days earlier or later than the anniversary of the previous year's meeting, notice by the stockholder, to be timely, must be received within 15 days after the public announcement of such meeting

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solicitation is made. The by-law provisions relating to director nominations are not applicable to a holder of class B common stock. The by-law provisions relating to other business are not applicable to business brought by holders of a majority of the voting power of our shares voting together as a single class. Our by-laws also specify certain requirements as to the form and content of a stockholder's notice. These provisions may have the effect of precluding our stockholders from bringing matters before a meeting or from making nominations for directors if the proper procedures are not followed or may discourage or defer a potential acquiror from conducting a solicitation of proxies to elect a slate of directors or otherwise attempting to obtain control of the company.

Call of Special Meetings

Our by-laws provide that, except as otherwise required by law, special meetings of the stockholders may be called only by the board of directors, our chief executive officer, our secretary or the holders of our common stock having a majority of the voting power of all our outstanding class A common stock and class B common stock, voting together as a single class. Stockholders are not otherwise permitted to call a special meeting or to require the board of directors to call a special meeting.

Filling of Board Vacancies; Removal

Our by-laws authorize only our board of directors to fill vacancies, including those resulting from newly created directorships or resignation or removal of directors. This may deter a stockholder from increasing the size of our board and gaining control of our board of directors by filling the resulting vacancies with its own nominees.

Additional Certificate of Incorporation and By-Law Provisions

Stockholder Action by Written Consent

Any action required or permitted to be taken at an annual or special stockholders' meeting may be taken without a meeting, without prior notice and without a vote, if a consent or consents in writing, setting forth the action so taken, are signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted. The action must be evidenced by one or more written consents describing the action taken, signed by the stockholders entitled to take action without a meeting, and delivered to us in the manner prescribed by the DGCL.

Delaware Business Combination Statute

We have elected not to be subject to Section 203 of the DGCL, which generally prohibits a publicly held Delaware corporation from engaging in various business combination transactions with any interested stockholder for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the transaction is approved by the board of directors before that person becomes an interested stockholder or another exception is available. A business combination includes mergers, asset sales and other transactions resulting in a financial benefit to a stockholder. An interested stockholder is a person who, together with affiliates and associates, owns (or within three years, did own) 15% or more of a corporation's voting stock. The statute is intended to prohibit or delay the accomplishment of mergers or other takeover or change in control attempts that do not receive the prior approval of the board of directors. By virtue of our decision to elect out of the statute's provisions, the statute does not apply to us, but we could elect to be subject to Section 203 in the future by amending our certificate of incorporation.

Amendments to our Certificate of Incorporation and By-laws

Except where our board of directors is permitted by law or by our certificate of incorporation to act without any action by our stockholders, provisions of our certificate of incorporation may not be adopted, repealed, altered or amended, in whole or in part, without the approval of a majority of the outstanding stock entitled to vote thereon and a majority of the outstanding stock of each class entitled to vote thereon as a class. The holders of the outstanding shares of a particular class of our common stock are entitled to vote as a class upon any proposed amendment of our certificate of incorporation that would adversely affect the powers, preferences or rights of the holders of such class

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of common stock. Our by-laws may be amended or repealed and new by-laws may be adopted by a vote of the holders of a majority of the voting power of our common stock or, except to the extent relating to stockholders meetings and stockholder action by written consent, by the board of directors. Any by-laws adopted or amended by the board of directors may be amended or repealed by the stockholders entitled to vote thereon.

Indemnification of Directors and Officers and Limitations on Liability

Our certificate of incorporation and by-laws provide a right to indemnification to the fullest extent permitted by law to any person who was or is a party or is threatened to be made a party to or is involved in any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he or she, or a person of whom he or she is the legal representative, is or was a director or officer of the Company or, as a director or officer of the Company, is or was serving at the written request of the Company's board of directors or its designee as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, whether the basis of such proceeding is alleged action in an official capacity for the Company or in any other capacity. Such person will be indemnified and held harmless by the Company, against all expenses, liability and loss (including attorney's fees, judgments, fines, ERISA excise taxes or penalties and amounts paid or to be paid in settlement) reasonably incurred or suffered in connection with such proceeding. In connection with a proceeding (or part thereof) initiated by an officer or director, the Company will indemnify only if the proceeding was authorized by the board of directors of the Company. The indemnification right includes the right to be paid by the Company expenses, including attorney's fees, incurred by the officer or director in defending any proceeding in advance of its final disposition; provided, however, that the payment of such expenses in advance of the final disposition of such proceeding will be made only upon delivery to the Company of an undertaking by such director or officer to repay all amounts so advanced if it is ultimately determined by a court or other tribunal that such person is not entitled to be indemnified. Our by-laws authorize us to take steps to ensure that all persons entitled to indemnification are properly indemnified, including, if the board of directors so determines, purchasing and maintaining insurance.

Our certificate of incorporation provides that none of our directors shall be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except liability for:

- any breach of the director's duty of loyalty to us or our stockholders,
- acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law,
- the payment of unlawful dividends and unlawful repurchase or redemption of our capital stock prohibited by the DGCL, and
- any transaction from which the director derived any improper personal benefits.

The effect of this provision of our certificate of incorporation is to eliminate our rights and the rights of our stockholders to recover monetary damages against a director for breach of the fiduciary duty of care as a director, including breaches resulting from negligent or grossly negligent behavior, except in the situations described above. This provision does not limit or eliminate our rights or the rights of any stockholder to seek non-monetary relief, such as an injunction or rescission in the event of a breach of a director's duty of care.

Indemnification Agreements

We have entered into indemnification agreements with certain of our directors and officers which may, in certain cases, be broader than the specific indemnification provisions contained in our certificate of incorporation and

by-laws. The indemnification agreements may require us, among other things, to indemnify such officers and directors against certain liabilities that may arise by reason of their status or service as directors, officers or employees of the company and to advance the expenses incurred by such parties as a result of any threatened claims or proceedings brought against them as to which they could be indemnified.

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Registration Agreement

We are a party to a registration agreement with Onex Partners, certain Onex affiliates and certain other stockholders, whom we refer to together as the Other Investors, including certain management investors. These stockholders have the right, subject to various conditions and limitations, to include their shares of our class B common stock in registration statements relating to our securities. In addition, the Onex entities have the right, at any time after the date of this prospectus supplement, on unlimited occasions, to demand that we register their shares of our class B common stock under the Securities Act, subject to certain limitations. Holders of a majority of the shares held by the Onex entities and the Other Investors may also require us to register their shares of our class B common stock on long-form (Form S-1) registration statements under the Securities Act on up to three occasions, and on short-form (Form S-3) registration statements an unlimited number of times if we are eligible to use them. If we propose to register any shares of our common stock under the Securities Act either for our account or for the account of any stockholders, the holders having piggyback registration rights are entitled to receive notice of such registration and include their shares of our class B common stock in any such registration, subject to the right of the Onex entities to prohibit the stockholders from selling shares in a primary registration by us. These registration rights are subject to certain conditions and limitations, including the right of the underwriter of an offering to limit the number of shares of common stock to be included in a registration and the right of the Onex entities to prohibit the stockholders from selling shares in a primary registration by us. We generally are required to bear all expenses of such registrations.

Registration of any of the shares of our common stock held by stockholders with registration rights would result in such shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of such registration.

Stockholders party to the registration agreement have agreed not to effect any public sale or distribution of shares during the seven days prior to and the 90-day period beginning on the effective date of any underwritten registration in which any of such stockholders participate, unless the managing underwriter otherwise agrees.

Transfer Agent and Registrar

The Bank of New York Mellon Corporation serves as our transfer agent and registrar for our class A common stock.

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We, the selling stockholders and the underwriter named below have entered into an underwriting agreement with respect to the shares being offered. Subject to certain conditions, the underwriter has agreed to purchase the number of shares indicated in the following table.

| Underwriter | Number of Firm Shares to be Purchased | Number of Optional Shares to be Purchased if Option to Purchase Additional Shares is Exercised in Full |
|-----------------------------------|--|---|
| Morgan Stanley & Co. Incorporated | 10,307,375 | 1,546,106 |

The underwriter is committed to take and pay for all of the shares being offered, if any are taken, other than the shares covered by the option described below unless and until this option is exercised.

We and the selling stockholders have agreed to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act.

The underwriter will purchase the shares of our common stock from the selling stockholders at a price of \$24.49 per share, resulting in aggregate proceeds to the selling stockholders of \$252 million (\$290 million if the underwriter's option to purchase additional shares is exercised in full), before expenses.

The underwriter may offer shares of our class A common stock from time to time to purchasers directly or through agents, or through brokers in brokerage transactions on the New York Stock Exchange, or to dealers in negotiated transactions or in a combination of such methods of sale, at a fixed price or prices, which may be changed, or at market prices prevailing at the time of sale, at prices related to such prevailing market prices or at negotiated prices, subject to receipt and acceptance by it and subject to its right to reject any order in whole or in part.

In connection with the sale of the shares of class A common stock offered hereby, the underwriter may be deemed to have received compensation in the form of underwriting discounts.

Option to Purchase Additional Shares

If the underwriter sells more shares of class A common stock than the total number of firm shares to be purchased set forth in the table above, the underwriter has an option to buy up to an additional 1,546,106 shares of class A common stock from the selling stockholders. It may exercise that option for 30 days from the date of this prospectus supplement.

No Sales of Similar Securities

We, certain of our executive officers and directors and certain entities affiliated with Onex Corporation, have agreed that, with limited exceptions, we and they will not, without the prior written consent of the underwriter, directly or indirectly, offer, sell, contract to sell, pledge or otherwise dispose of or enter into a transaction which would have the same effect, or file with the Commission a registration statement under the Act relating to, any shares of our class A common stock, or securities convertible into or exchangeable or exercisable for any shares of class A common stock, or enter into any swap, hedge or other arrangement that transfers, in whole or in part, any of the economic consequences of ownership of the class A common stock, whether any such aforementioned transaction is to be settled by delivery of class A common stock or such other security in cash or otherwise or publicly disclose the intention to make any such offer, sale, pledge, disposition or filing, for a period of 45 days after April 7, 2011. In the event that either (x) during the last 17 days of the lock-up period referred to above, we release earnings results or material news or a material event relating to us occurs or (y) prior to the expiration of the lock-up period, we announce that we will release earnings results during the 16-day period beginning on the last day of the lock-up period, then in each case, the lock-up period will be extended until the expiration of the 18-day period beginning on the date of release of the earnings results or the occurrence of the material news or material event, as applicable, unless the underwriter waives, in writing, such extension.

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Price Stabilization and Short Positions

In connection with the offering, the underwriter may purchase and sell shares of common stock in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriter of a greater number of shares than it is required to purchase in the offering. Covered short sales are sales made in an amount not greater than the over-allotment option. The underwriter may close out any covered short position by either using its option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriter will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which it may purchase additional shares pursuant to the option granted to it. Naked short sales are any sales in excess of such option. The underwriter must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriter is concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of common stock made by the underwriter in the open market prior to the completion of the offering.

Purchases to cover a short position and stabilizing transactions, as well as other purchases by the underwriter for its own account, may have the effect of preventing or retarding a decline in the market price of the company's stock, and together with the imposition of the penalty bid, may stabilize, maintain or otherwise affect the market price of the common stock. As a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If these activities are commenced, they may be discontinued at any time. These transactions may be effected on the New York Stock Exchange, in the over-the-counter market or otherwise.

New York Stock Exchange

The shares being offered are listed for trading on the New York Stock Exchange under the symbol SPR.

Other Relationships

The underwriter and its affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriter and its affiliates have, from time to time, performed, and may in the future perform, various financial advisory, commercial and investment banking services for the company, for which they received or will receive customary fees and expenses.

Electronic Distribution

In connection with the offering, the underwriter or securities dealers may distribute prospectuses by electronic means, such as e-mail. The underwriter will be facilitating Internet distribution for this offering to certain of its Internet subscription customers. The underwriter may allocate a limited number of shares for sale to its online brokerage customers.

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LEGAL MATTERS

The validity of our class A common stock offered under this prospectus supplement will be passed upon for us by Kaye Scholer LLP, New York, New York. Certain legal matters will be passed upon for the underwriter by Cahill Gordon & Reindel llp, New York, New York.

EXPERTS

The consolidated financial statements, the financial statement schedule and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Annual Report on Internal Control over Financial Reporting) incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K of Spirit AeroSystems Holdings, Inc. for the year ended December 31, 2010 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

This prospectus supplement incorporates important business and financial information about the Company that is not included in or delivered with this prospectus supplement. We incorporate by reference the documents listed below and any additional documents filed by us with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, to the extent such documents are deemed filed for purposes of the Exchange Act after the date of this prospectus supplement until all of the shares of our class A common stock offered under this prospectus supplement and the accompanying prospectus are sold:

our Annual Report on Form 10-K for the year ended December 31, 2010;

our Proxy Statement for our 2011 Annual Meeting of Stockholders, filed with the SEC on March 22, 2011;

our Current Reports on Form 8-K filed on April 7, 2011 and April 8, 2011; and

the description of our class A common stock included in our Registration Statement on Form 8-A filed with the SEC on November 16, 2006, and any amendment or report filed thereafter for the purpose of updating that description.

Any statement contained in this prospectus supplement or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement. You can obtain any of the documents incorporated by reference through us, the SEC or the SEC's website, <http://www.sec.gov>. Documents we have incorporated by reference are available from us without charge, excluding exhibits to those documents unless we have specifically incorporated by reference such exhibits in this prospectus supplement. Any person, including any beneficial owner, to whom this prospectus supplement is delivered, may obtain the documents we have incorporated by reference in, but not delivered with, this prospectus supplement by requesting them by telephone or in writing at the following address:

Spirit AeroSystems Holdings, Inc.
3801 South Oliver
Wichita, Kansas 67210
Attention: Corporate Secretary
(316) 526-9000

This prospectus supplement summarizes documents and other information in a manner we believe to be accurate, but we refer you to the actual documents for a more complete understanding of the information we discuss in this prospectus supplement. In making an investment decision, you must rely on your own examination of such documents, our business and the terms of the offering, including the merits and risks involved. When we refer to this prospectus supplement, we mean not only this prospectus supplement but also any documents which are incorporated or deemed to be incorporated in this prospectus supplement by reference. You should rely only on the information incorporated by reference or provided in this prospectus supplement. We have not authorized anyone else to provide you with different information. This prospectus supplement is used to offer and sell the class A common stock referred to in this prospectus supplement, and only under circumstances and in jurisdictions where it

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is lawful to do so. The information contained in this prospectus supplement is current only as of the date of this prospectus supplement.

WHERE YOU CAN FIND MORE INFORMATION

Spirit Holdings is subject to the informational requirements of the Exchange Act and files reports and other information with the SEC.

You may read and copy this information at the Public Reference Room of the SEC, 100 F Street N.E., Washington, D.C. 20549. For more information about the operation of the Public Reference Room, call the SEC at 1-800-SEC-0330. The SEC also maintains a website that contains reports and other information about issuers who file electronically with the SEC. The Internet address of the site is <http://www.sec.gov>. Some, but not all, of Spirit Holdings' publicly filed information is available through the SEC's web site. You may also obtain certain of these documents at Spirit Holdings' website at www.spiritaero.com. We are not incorporating the contents of the websites of the SEC, Spirit Holdings or any other person into this document. We are only providing information about how you may obtain certain documents that are incorporated into this document by reference at these websites.

This prospectus supplement forms part of the registration statement filed by Spirit AeroSystems Holdings, Inc. with the SEC under the Securities Act. This prospectus supplement, which constitutes a part of the registration statement on Form S-3, does not contain all the information set forth in the registration statement, certain parts of which are omitted in accordance with the rules and regulations of the SEC. We are referring you to the registration statement and to the exhibits for further information with respect to us and our class A common stock. The statements contained in this prospectus supplement concerning the provisions of any document are not necessarily complete, and, in each instance, we refer you to the copy of such document filed as an exhibit to the registration statement or otherwise filed with the SEC. Each such statement is qualified in its entirety by such reference.

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Prospectus

SPIRIT AEROSYSTEMS HOLDINGS, INC.

Class A Common Stock

Certain selling stockholders may offer and sell shares of our class A common stock from time to time in amounts, at prices and on terms that will be determined at the time of any such offering. Each time any common stock is offered pursuant to this prospectus, we will provide a prospectus supplement and attach it to this prospectus. The prospectus supplement will contain more specific information about the offering, including the name of each selling stockholder and the number of shares of our common stock to be sold by such selling stockholder.

We will not receive any proceeds from the sale of the shares of common stock by the selling stockholders.

The specific terms of any offering will be described in a supplement to this prospectus. The prospectus supplement may also supplement, update or amend information contained in this prospectus. You should carefully read this prospectus and the applicable prospectus supplement, as well as the documents incorporated by reference, before you invest. **This prospectus may not be used to offer and sell securities unless accompanied by a prospectus supplement.**

The class A common stock is listed for trading on the New York Stock Exchange under the symbol SPR. The last reported sale price of the class A common stock on April 6, 2011 was \$25.21 per share.

Investing in our securities involves risks. You should carefully consider the information referred to under the heading Risk Factors beginning on page 1.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is April 7, 2011

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As permitted under the rules of the Securities and Exchange Commission, this prospectus incorporates important information about Spirit AeroSystems Holdings, Inc. that is contained in documents we file with the Securities and Exchange Commission but that are not included in or delivered with this prospectus. You may obtain copies of these documents, without charge, from the website maintained by the Securities and Exchange Commission at <http://www.sec.gov>, as well as other sources. See **Where You Can Find More Information**.

You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide you with different information. These securities are not being offered in any state where the offer is not permitted. You should not assume that the information in this prospectus or in the documents incorporated by reference is accurate as of any date other than the date on the front of such documents.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, using a shelf registration process. By using a shelf registration statement, certain selling stockholders may, at any time and from time to time, in one or more offerings, sell their shares of our class A common stock described in this prospectus (including by selling their shares of our class B common stock which convert to shares of our class A common stock upon sale).

Each time the selling stockholders sell class A common stock under this shelf registration, we will provide you with a prospectus supplement that will describe the terms of the offering. The prospectus supplement may also supplement, update or change information contained in this prospectus. If there is any inconsistency between the information in this prospectus and the prospectus supplement, you should rely on the information in the prospectus supplement. The registration statement we filed with the SEC includes exhibits that provide more details of the matters discussed in this prospectus. You should read this prospectus and the related exhibits filed with the SEC and the accompanying prospectus supplement together with additional information described under the headings *Incorporation of Certain Information by Reference* and *Where You Can Find More Information* before investing. The shelf registration statement, including the exhibits thereto, can be read at the SEC's website or at the SEC's Public Reference Room as described under *Where You Can Find More Information*.

The selling stockholders may sell class A common stock to or through underwriters or broker-dealers, and also may sell class A common stock directly to other purchasers or through agents. The names of any underwriters, broker-dealers or agents employed in the sale of the class A common stock covered by this prospectus, the number of shares to be purchased by such underwriters, broker-dealers or agents, and the compensation, if any, of such underwriters, broker-dealers or agents will be set forth in an accompanying prospectus supplement.

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CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus includes certain forward-looking statements that involve many risks and uncertainties. When used, words such as anticipate, believe, continue, estimate, expect, forecast, intend, may, plan, project, other similar words or phrases, or the negative thereof, unless the context requires otherwise, are intended to identify forward-looking statements. These statements reflect management's current views with respect to future events and are subject to risks and uncertainties, both known and unknown. Our actual results may vary materially from those anticipated in forward-looking statements.

Important factors that could cause actual results to differ materially from those reflected in such forward looking statements and that should be considered in evaluating our outlook include, but are not limited to, the following:

our ability to continue to grow our business and execute our growth strategy, including the timing and execution of new programs;

our ability to perform our obligations and manage costs related to our new commercial and business aircraft development programs and the related recurring production;

potential reduction in the build rates of certain Boeing aircraft including, but not limited to, the B737 program, the B747 program, the B767 program and the B777 program, and build rates of the Airbus A320 and A380 programs, which could be negatively impacted by continuing weakness in the global economy and economic challenges facing commercial airlines, and by lack of business and consumer confidence and the impact of continuing instability in the global financial and credit markets, including, but not limited to, sovereign debt concerns in Europe;

the inability to resolve significant claims with Boeing related to non-recurring and recurring costs on the B787 program;

declining business jet manufacturing rates and customer cancellations or deferrals as a result of the weakened global economy;

the success and timely execution of key milestones such as certification and delivery of Boeing's new B787 and Airbus' new A350 XWB (Xtra Wide-Body) aircraft programs, including first flight for the Airbus A350 XWB, receipt of necessary regulatory approvals and customer adherence to their announced schedules;

our ability to enter into supply arrangements with additional customers and the ability of all parties to satisfy their performance requirements under existing supply contracts with Boeing and Airbus, our two major customers, and other customers and the risk of nonpayment by such customers;

any adverse impact on Boeing's and Airbus' production of aircraft resulting from cancellations, deferrals or reduced orders by their customers or from labor disputes or acts of terrorism;

any adverse impact on the demand for air travel or our operations from the outbreak of diseases or epidemic or pandemic outbreaks;

returns on pension plan assets and the impact of future discount rate changes on pension obligations;

our ability to borrow additional funds or refinance debt;

competition from original equipment manufacturers and other aerostructures suppliers;

the effect of governmental laws, such as U.S. export control laws and anti-bribery laws such as the Foreign Corrupt Practices Act, environmental laws and agency regulations, both in the U.S. and abroad;

the cost and availability of raw materials and purchased components;

our ability to successfully extend or renegotiate our primary collective bargaining contracts with our labor unions;

our ability to recruit and retain highly skilled employees and our relationships with the unions representing many of our employees;

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spending by the U.S. and other governments on defense;

the possibility that our cash flows and borrowing facilities may not be adequate for our additional capital needs or for payment of interest on and principal of our indebtedness and the possibility that we may be unable to borrow additional funds or refinance debt;

our exposure under our existing senior secured revolving credit facility to higher interest payments should interest rates increase substantially;

the outcome or impact of ongoing or future litigation and regulatory actions; and

our exposure to potential product liability and warranty claims.

These factors are not exhaustive, and new factors may emerge or changes to the foregoing factors may occur that could impact our business. These forward-looking statements involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. Forward-looking statements should, therefore, be considered in light of various factors, including those set forth in this prospectus under **Risk Factors** and elsewhere in this prospectus or in the documents incorporated by reference herein. In light of such risks and uncertainties, we caution you not to rely on these forward-looking statements in deciding whether to invest in our class A common stock. As with any projection or forecast, these statements are inherently susceptible to uncertainty and changes in circumstances. Except to the extent required by law, we are under no obligation to, and expressly disclaim any obligation to, update or alter our forward-looking statements after the date of this prospectus whether as a result of such changes, new information, future events or otherwise.

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PROSPECTUS SUMMARY

Our Company

This summary highlights some of the information incorporated by reference into this prospectus. Because this is only a summary, it does not contain all of the information that may be important to you. You should carefully read this prospectus and the applicable prospectus supplement, if any, including the documents incorporated by reference, which are described under **Incorporation by Reference of Certain Documents** and **Where You Can Find More Information**. You should also carefully consider, among other things, the matters discussed in the section entitled **Risk Factors**.

In this prospectus, unless the context indicates otherwise, the terms the **Company**, **Spirit Holdings**, **we**, **us** and **our** refer to Spirit AeroSystems Holdings, Inc. and all entities owned or controlled by Spirit AeroSystems Holdings, Inc., including Spirit AeroSystems, Inc.

Our Business

We are one of the largest independent non-OEM (original equipment manufacturer) aircraft parts designers and manufacturers of commercial aerostructures in the world, based on annual revenues, as well as the largest independent supplier of aerostructures to Boeing. In addition, we are one of the largest independent suppliers of aerostructures to Airbus. Boeing and Airbus are the two largest aircraft OEMs in the world. Aerostructures are structural components such as fuselages, propulsion systems and wing systems for commercial and military aircraft.

Our Principal Offices and Websites

Spirit Holdings was incorporated in the state of Delaware on February 7, 2005. Our principal offices are located at 3801 South Oliver, Wichita, Kansas 67210 and our telephone number at that address is (316) 526-9000. Our website address is www.spiritaero.com. **Information contained on this website is not part of this prospectus and is not incorporated in this prospectus by reference.**

RISK FACTORS

Before making an investment decision, you should consider carefully the risks described under **Risk Factors** in the applicable prospectus supplement, if any, and in our most recent Annual Report on Form 10-K, and in our updates to those Risk Factors in our Quarterly Reports on Form 10-Q, together with all of the other information appearing in this prospectus or incorporated by reference into this prospectus and any applicable prospectus supplement. In addition to those risk factors, there may be additional risks and uncertainties of which management is not aware or focused on or that management deems immaterial. Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The trading price of our class A common stock could decline due to any of these risks, and you may lose all or part of your investment.

USE OF PROCEEDS

We will not receive any of the proceeds from sales by selling stockholders of shares of class A common stock covered by this prospectus.

SELLING STOCKHOLDERS

The selling stockholders may include Onex Partners LP and other entities affiliated with Onex Corporation, the directors and officers of Spirit Holdings and other persons. Information regarding the beneficial ownership of our common stock by a selling stockholder, the number of shares of class A common stock being offered by a selling stockholder and the number of shares beneficially owned by a selling stockholder after the applicable offering, where applicable, will be set forth in a prospectus supplement, in a post-effective amendment, or in filings we make with the SEC under the Securities Exchange Act of 1934, as amended (the Exchange Act), which are incorporated by reference.

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PLAN OF DISTRIBUTION

The selling stockholders (or any of their pledgees, donees, transferees or successors in interest) may sell our class A common stock through underwriters, agents, broker-dealers or directly without the use of any underwriter, agent or broker-dealer to one or more purchasers. The selling stockholders may use any one or more of the following methods when selling shares:

one or more underwritten offerings;

ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;

block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;

purchases by a broker-dealer as principal and resale by the broker-dealer for its account;

an exchange distribution in accordance with the rules of the applicable exchange;

privately negotiated transactions;

short sales against the box, puts and calls and other transactions in our securities or derivatives of our securities and may sell or deliver shares of class A common stock in connection with these trades;

broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;

stock purchase contracts whereby the applicable prospectus supplement will describe the specific terms of any stock purchase contracts through which the selling stockholders' class A common stock will be distributed;

a combination of any such methods of sale; and

any other method permitted pursuant to applicable law.

The selling stockholders may also sell shares under Rule 144 under the Securities Act of 1933, as amended (the Securities Act), if available, rather than under this prospectus.

The class A common stock may be sold at a fixed price or prices, at market prices prevailing at the times of sale, at prices related to these prevailing market prices or at negotiated prices. Any such price may be changed from time to time. The selling stockholders will act independently of us in making decisions with respect to the timing, manner of sale, amount of securities to be sold in and the pricing of any transaction. The registration of the selling stockholders' class A common stock does not necessarily mean that the selling stockholders will offer or sell any of their shares.

The terms of the offering of the class A common stock covered by this prospectus through any underwriter, or any broker-dealer or agent who may be deemed to be an underwriter will be set forth in the applicable prospectus supplement and will include:

the identity of any underwriters, broker-dealers or agents who purchase class A common stock, as required;

the amount of class A common stock sold, the public offering price and consideration paid, and the proceeds the selling stockholders will receive from that sale;

the amount of any indemnification provisions, including indemnification from liabilities under the federal securities laws; and

any other material terms of the distribution of securities.

The selling stockholders may offer the class A common stock to the public through one or more underwriting syndicates represented by one or more managing underwriters, or through one or more underwriters without a syndicate. If underwriters are used in the sale, we will execute an underwriting agreement with those underwriters relating to the class A common stock that the selling stockholders will offer and will name the underwriters and describe the terms of the transaction in the prospectus supplement. The class A common stock subject to the

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underwriting agreement will be acquired by the underwriters for their own account and may be resold by them, or their donees, pledgees or transferees, from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. Subject to the conditions specified in the underwriting agreement, underwriters may be obligated to purchase all of the class A common stock offered if any of the class A common stock is purchased. The selling stockholders may also sell the class A common stock covered by this prospectus through other agents designated by the underwriters from time to time. We will identify any agent involved in the offer and sale of class A common stock who may be deemed to be an underwriter under the federal securities laws, and describe any commissions or discounts payable by the selling stockholders to these agents, in the prospectus supplement. Any such agents will be obligated to purchase all of the class A common stock offered if any of the class A common stock is purchased or will act on a best efforts basis to solicit purchases for the period of their appointment, unless stated otherwise in the prospectus supplement.

The selling stockholders may authorize underwriters to solicit offers by institutions to purchase the class A common stock subject to the underwriting agreement from the selling stockholders at the public offering price stated in the prospectus supplement under delayed delivery contracts providing for payment and delivery on a specified date in the future. If the selling stockholders sell class A common stock under delayed delivery contracts, the prospectus supplement will state that as well as the conditions to which these delayed delivery contracts will be subject and the commissions payable for that solicitation.

Underwriters may sell the class A common stock to or through broker-dealers. Alternatively, the selling stockholders may sell the class A common stock to one or more broker-dealers, who would act as a principal or principals. Broker-dealers may resell such class A common stock to the public at varying prices to be determined by the broker-dealers at the time of the resale.

Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. The selling stockholders do not expect these commissions and discounts to exceed what is customary in the types of transactions involved. Any profits on the resale of shares of class A common stock by a broker-dealer acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. Discounts, concessions, commissions and similar selling expenses, if any, attributable to the sale of shares will be borne by the selling stockholders. The selling stockholders may agree to indemnify any agent or broker-dealer that participates in transactions involving sales of the shares if liabilities are imposed on that person under the Securities Act.

The selling stockholders may from time to time pledge or grant a security interest in some or all of the shares of class A common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of class A common stock from time to time under this prospectus after we have filed an amendment or supplement to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, donee, transferee or other successors in interest as selling stockholders under this prospectus.

The selling stockholders also may transfer the shares of class A common stock in other circumstances, in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus and may sell the shares of class A common stock from time to time under this prospectus after we have filed an amendment or supplement to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, donees, transferee or other successors in interest as selling stockholders under this prospectus.

We are required to pay all fees and expenses incident to the registration of the shares of class A common stock, including the fees and disbursements of counsel to the selling stockholders. We have agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act. We may provide underwriters, agents, broker-dealers or purchasers with indemnification against civil liabilities,

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including liabilities under the Securities Act, or contribution with respect to payments that the underwriters, agents, broker-dealers or purchasers may make with respect to such liabilities.

In connection with the sale of class A common stock covered by this prospectus, underwriters, broker-dealers or agents may receive compensation from us, the selling stockholders or from purchasers of the class A common stock for whom they may act as agents, in the form of discounts, concessions or commissions or fees. These discounts, concessions, commissions or fees may be changed from time to time. The discounts, concessions, commissions or fees as to a particular broker-dealer, agent or underwriter might be in excess of those customary in the type of method of distribution involved. We cannot presently estimate the amount of such compensation, if any. Underwriters, broker-dealers and/or agents may engage in transactions with us, or perform services for us, in the ordinary course of business, and may receive compensation in connection with those arrangements.

Selling stockholders, underwriters, broker-dealers, agents or purchasers that participate in the distribution of the class A common stock covered by this prospectus may be deemed to be underwriters under the Securities Act. Broker-dealers or other persons acting on behalf of parties that participate in the distribution of securities may also be deemed underwriters. Any discounts or commissions received by them and any profit on the resale of the securities received by them may be deemed to be underwriting discounts and commissions under the Securities Act.

Underwriters and purchasers that are deemed underwriters under the Securities Act may engage in transactions that stabilize, maintain or otherwise affect the price of the class A common stock, including the entry of stabilizing bids or syndicate covering transactions or the imposition of penalty bids. Such purchasers will be subject to the applicable provisions of the Securities Act and Exchange Act and the rules and regulations thereunder, including Rule 10b-5 and Regulation M. Regulation M may restrict the ability of any person engaged in the distribution of the class A common stock to engage in market-making activities with respect to those securities. All of the foregoing may affect the marketability of the class A common stock and the ability of any person to engage in market-making activities with respect to the class A common stock. In addition, the anti-manipulation rules under the Exchange Act may apply to sales of the class A common stock in the market.

The selling stockholders have advised us that they have not entered into any agreements, understandings or arrangements with any underwriters or broker-dealers regarding the sale of their shares of class A common stock, nor is there an underwriter or coordinating broker acting in connection with a proposed sale of shares of class A common stock by the selling stockholders. If we are notified by the selling stockholders that any material arrangement has been entered into with a broker-dealer for the sale of shares of class A common stock, if required, we will file a supplement to this prospectus. If the selling stockholders use this prospectus for any sale of the shares of class A common stock, they will be subject to the prospectus delivery requirements of the Securities Act.

LEGAL MATTERS

The validity of the issuance of the securities offered hereby will be passed upon for us by Kaye Scholer LLP, New York, New York. If legal matters in connection with offerings made by this prospectus and any prospectus supplement are passed on by counsel for any underwriters or agents or selling stockholder, that counsel will be named in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements, the financial statement schedule and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Annual Report on Internal Control over Financial Reporting) incorporated in this prospectus by reference to the Annual Report on Form 10-K of Spirit AeroSystems Holdings, Inc. for the year ended December 31, 2010 have been so incorporated in

reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

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INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

This prospectus incorporates important business and financial information about the Company that is not included in or delivered with this prospectus. We incorporate by reference the documents listed below and any additional documents filed by us with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, to the extent such documents are deemed filed for purposes of the Exchange Act after the date of this prospectus until all of the shares of our class A common stock offered under this prospectus are sold:

our Annual Report on Form 10-K for the year ended December 31, 2010;

our Proxy Statement for our 2011 Annual Meeting of Stockholders, filed with the SEC on March 22, 2011;

the description of our class A common stock included in our Registration Statement on Form 8-A filed with the SEC on November 16, 2006, and any amendment or report filed thereafter for the purpose of updating that description.

Any statement contained in this prospectus or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus. You can obtain any of the documents incorporated by reference through us, the SEC or the SEC's website, <http://www.sec.gov>. Documents we have incorporated by reference are available from us without charge, excluding exhibits to those documents unless we have specifically incorporated by reference such exhibits in this prospectus. Any person, including any beneficial owner, to whom this prospectus is delivered, may obtain the documents we have incorporated by reference in, but not delivered with, this prospectus by requesting them by telephone or in writing at the following address:

Spirit AeroSystems Holdings, Inc.
3801 South Oliver
Wichita, Kansas 67210
Attention: Corporate Secretary
(316) 526-9000

This prospectus summarizes documents and other information in a manner we believe to be accurate, but we refer you to the actual documents for a more complete understanding of the information we discuss in this prospectus. In making an investment decision, you must rely on your own examination of such documents, our business and the terms of the offering, including the merits and risks involved. When we refer to this prospectus, we mean not only this prospectus but also any documents which are incorporated or deemed to be incorporated in this prospectus by reference. You should rely only on the information incorporated by reference or provided in this prospectus or any supplement to this prospectus. We have not authorized anyone else to provide you with different information. This prospectus is used to offer and sell the class A common stock referred to in this prospectus, and only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is current only as of the date of this prospectus.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the securities offered by this prospectus. This prospectus, which is a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits and schedules filed therewith. For further information with respect to us and our securities offered by this prospectus, please see the registration statement and the exhibits filed with the registration statement. Statements contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement. A copy of the registration statement and the exhibits filed

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with the registration statement may be inspected without charge at the Public Reference Room maintained by the SEC, located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the Public Reference Room. The SEC also maintains an Internet website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC. The address of the website is <http://www.sec.gov>.

We are a reporting company and file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any document we file with the SEC at its public reference facility at 450 Fifth Street, N.W., Washington, D.C. 20549. You can request copies of these documents by writing to the SEC and paying a fee for the copying costs. Please call the SEC at 1-800-SEC-0330 for further information regarding its public facilities. Our SEC filings, including the complete registration statement of which this prospectus is a part and all of the exhibits to it are also available to the public from the SEC's website at <http://www.sec.gov>.

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10,307,375 Shares

Spirit AeroSystems Holdings, Inc.

Class A Common Stock

PROSPECTUS SUPPLEMENT

Morgan Stanley

April 11, 2011