

TRIUMPH GROUP INC
 Form 424B3
 June 11, 2012

Table of Contents

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be Registered(1)	Proposed maximum offering price per unit(2)	Proposed maximum aggregate offering price(2)	Amount of registration fee(3)
Common Stock, \$0.001 par value per share	4,666,116	\$56.96	\$265,781,967.36	\$30,458.61

- (1) The securities registered herein are offered pursuant to an automatic shelf registration statement.
- (2) Estimated pursuant to Rule 457(c), the offering price and registration fee are based on the average of the high and low prices for our common stock on June 4, 2012, as reported on the New York Stock Exchange.
- (3) The registration fee has been transmitted to the SEC in connection with the offering of common stock pursuant to the registration statement No. 333-174289 by means of this prospectus supplement in accordance with Rule 457(r).
-

Table of Contents

Filed Pursuant to Rule 424(b)(3)
Registration No. 333-174289

PROSPECTUS SUPPLEMENT
To Prospectus dated May 17, 2011

4,666,116 Shares

Common Stock

This prospectus supplement relates to the shares of common stock of Triumph Group, Inc., which we refer to in this prospectus supplement as "Triumph," being sold by the selling stockholders identified in this prospectus supplement. Triumph will not receive any of the proceeds from the sale of the shares being sold by the selling stockholders.

The common stock of Triumph is listed on the New York Stock Exchange under the symbol TGI. The last reported sale price of the common stock on the New York Stock Exchange on June 6, 2012 was \$60.32 per share.

Investing in our common stock involves risks. See "Risk Factors" on page S-4 of this prospectus supplement to read about factors you should consider before buying shares of the common stock.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus supplement. Any representation to the contrary is a criminal offense.

Credit Suisse Securities (USA) LLC has agreed to purchase 4,666,116 shares of common stock from the selling stockholders at a price of \$58.82 per share, resulting in \$274,460,943 aggregate proceeds to the selling stockholders.

Credit Suisse Securities (USA) LLC may offer the shares of common stock from time to time for sale to purchasers in one or more transactions 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."

Credit Suisse Securities (USA) LLC expects to deliver the shares against payment in New York, New York on or about June 12, 2012.

Credit Suisse

Prospectus Supplement dated June 6, 2012.

TABLE OF CONTENTS

Prospectus Supplement

	Page
<u>ABOUT THIS PROSPECTUS SUPPLEMENT</u>	<u>S-i</u>
<u>PROSPECTUS SUPPLEMENT SUMMARY</u>	<u>S-1</u>
<u>RISK FACTORS</u>	<u>S-4</u>
<u>CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS</u>	<u>S-5</u>
<u>USE OF PROCEEDS</u>	<u>S-7</u>
<u>PRICE RANGE OF COMMON STOCK</u>	<u>S-7</u>
<u>DIVIDEND POLICY</u>	<u>S-7</u>
<u>SELLING STOCKHOLDERS</u>	<u>S-8</u>
<u>UNDERWRITING</u>	<u>S-10</u>
<u>NOTICE TO CANADIAN RESIDENTS</u>	<u>S-14</u>
<u>VALIDITY OF THE SHARES</u>	<u>S-16</u>
<u>INCORPORATION BY REFERENCE</u>	<u>S-16</u>

ABOUT THIS PROSPECTUS SUPPLEMENT

This document has two parts, a prospectus supplement and an accompanying prospectus dated May 17, 2011. This prospectus supplement and the accompanying prospectus are part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the "Commission," utilizing a "shelf" registration process. Under this shelf registration process, the selling stockholders named in a prospectus supplement over time may offer and sell our common stock in one or more offerings or resales. The accompanying prospectus provides you with a general description of our common stock, which the selling stockholders may offer pursuant to this prospectus supplement. This prospectus supplement, which describes certain matters relating to us and the specific terms of this offering of shares of our common stock, adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference herein. Any statement that we make in the accompanying prospectus will be modified or superseded by any inconsistent statement made by us in this prospectus supplement.

The rules of the Commission allow us to incorporate by reference information into this prospectus supplement. This information incorporated by reference is considered to be a part of this prospectus supplement, and information that we file later with the Commission, to the extent incorporated by reference, will automatically update and supersede this information. See "Incorporation by Reference." You should read both this prospectus supplement and the accompanying prospectus together with additional information described under the heading "Where You Can Find More Information" before investing in our common stock.

We have not authorized anyone to give you any information or to make any representations about our common stock or any offers by our selling stockholders other than those contained in this prospectus supplement, the accompanying prospectus, or any free writing prospectus prepared by us or any other information to which we have expressly referred you. If you are given any information or representation about these matters that is not discussed in this prospectus supplement or the accompanying prospectus, you must not rely on that information. This prospectus supplement and the accompanying prospectus do not constitute an offer to sell anywhere or to anyone where or to whom we are not permitted to offer to sell securities under applicable law.

You should not assume that the information incorporated by reference or provided in this prospectus supplement or the accompanying prospectus or any free writing prospectus prepared by us is accurate as of any date other than the date on the front cover of those documents. Our business, financial condition, results of operations and prospects may have changed since that date.

Table of Contents

PROSPECTUS SUPPLEMENT SUMMARY

The following summary does not contain all the information that may be important to purchasers of our common stock. You should carefully read the entire prospectus supplement, including the "Risk Factors" section, the accompanying prospectus and other information incorporated by reference in this prospectus supplement before making any investment decision.

Our Company

Triumph Group, Inc. ("Triumph" or the "Company") was incorporated in 1993 in Delaware. Our companies design, engineer, manufacture, repair, overhaul and distribute a broad portfolio of aerostructures, aircraft components, accessories, subassemblies and systems. We serve a broad, worldwide spectrum of the aviation industry, including original equipment manufacturers, or OEMs, of commercial, regional, business and military aircraft and aircraft components, as well as commercial and regional airlines and air cargo carriers.

On June 16, 2010, we acquired Vought Aircraft Industries, Inc. ("Vought") from certain investment funds sponsored by The Carlyle Group. The acquisition of Vought established the Company as a leading global manufacturer of aerostructures for commercial, military and business jet aircraft. Products include fuselages, wings, empennages, nacelles and helicopter cabins. Strategically, the acquisition of Vought substantially increased our design capabilities and provides further diversification across customers and programs, as well as exposure to new growth platforms. The acquired business is operating as Triumph Aerostructures-Vought Commercial Division, Triumph Aerostructures-Vought Integrated Programs Division and Triumph Structures-Everett. The results of Vought are included in the Company's Aerostructures Segment from the date of acquisition.

We offer a variety of products and services to the aerospace industry through three groups of operating businesses: (i) Triumph Aerostructures Group, whose companies revenues are derived from the design, manufacture, assembly and integration of metallic and composite aerostructures and structural components for the global aerospace original equipment manufacturers, or OEM, market; (ii) Triumph Aerospace Systems Group, whose companies design, engineer and manufacture a wide range of proprietary and build-to-print components, assemblies and systems also for the OEM market; and (iii) Triumph Aftermarket Services Group, whose companies serve aircraft fleets, notably commercial airlines, the U.S. military and cargo carriers, through the maintenance, repair and overhaul of aircraft components and accessories manufactured by third parties.

Our Aerostructures Group utilizes its capabilities to design, manufacture and build complete metallic and composite aerostructures and structural components. This group also includes companies performing complex manufacturing, machining and forming processes for a full range of structural components, as well as complete assemblies and subassemblies. This group services the full spectrum of aerospace customers, which include aerospace OEMs and the top-tier manufacturers who supply them and airlines, air cargo carriers, and domestic and foreign militaries.

Our Aerospace Systems Group utilizes its capabilities to design and engineer mechanical, electromechanical, hydraulic and hydromechanical control systems, while continuing to broaden the scope of detailed parts and assemblies that we supply to the aerospace market. Customers typically return such systems to us for repairs and overhauls and spare parts. This group services the full spectrum of aerospace customers, which include aerospace OEMs and the top-tier manufacturers who supply them and airlines, air cargo carriers, and domestic and foreign militaries.

Our Aftermarket Services Group performs maintenance, repair and overhaul services ("MRO") on equipment and parts manufactured by third parties, and supplies spare parts of various types of cockpit instruments, and gauges for the commercial and military aviation industry and primarily services the world's airline and air cargo carrier customers. This group also designs, engineers, manufactures,

Edgar Filing: TRIUMPH GROUP INC - Form 424B3

Table of Contents

repairs and overhauls aftermarket aerospace gas turbines engine components, offers comprehensive MRO solutions, leasing packages, exchange programs and parts and services to airline, air cargo and third party overhaul facilities. We also continue to develop Federal Aviation Administration approved Designated Engineering Representative proprietary repair procedures for the components we repair and overhaul, which range from detailed components to complex subsystems. Some specialties include navigation, flight, and engine monitoring instruments as well as autopilots, voice and data recorders, smoke detection systems and aircraft lighting.

Our headquarters are at 899 Cassatt Road, Suite 210, Berwyn, Pennsylvania 19312. Our telephone number is (610) 251-1000 and our Internet website address is www.triumphgroup.com.

Table of Contents

THE OFFERING

Common stock offered by the selling stockholders	4,666,116 shares
Common stock to be outstanding after this offering	50,002,739 shares(1)
Common stock to be owned by the selling stockholders after the offering	No shares
Selling stockholders	Investment funds and other entities associated with Carlyle. For more information, see the section of this prospectus supplement entitled "Selling Stockholders."
Use of proceeds	We will not receive any proceeds from the sale of any shares of our common stock offered by the selling stockholders.
Voting rights	Each holder of our common stock is entitled to one vote per share on all matters to be voted on by stockholders.
Dividend policy	During fiscal 2012 and 2011, we paid a cash dividend of \$0.14 per share and \$0.08 per share, respectively, after giving effect to the two-for-one split of our common stock that was effective on July 15, 2011. The agreements governing our indebtedness restrict our ability to pay dividends.
New York Stock Exchange trading symbol	"TGI"
Risk factors	You should carefully read and consider the information set forth under the section entitled "Risk Factors" beginning on page S-4 of this prospectus before investing in our common stock.

(1) Based on 50,002,739 shares outstanding as of May 31, 2012.

Table of Contents

RISK FACTORS

Our business is subject to a number of important risks and uncertainties, some of which are described below. The risks described below, however, are not the only risks that we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also impair our business operations. Any of these risks may have a material adverse effect on our business, financial condition, results of operations and cash flows. In such a case, you may lose all or part of your investment in our common stock. You should carefully consider the risks below, together with the other information in or incorporated by reference in this prospectus supplement and any accompanying prospectus prior to investing in our common stock.

Risks Relating to Our Common Stock and This Offering

Our charter documents may inhibit a takeover that stockholders may consider favorable.

Our certificate of incorporation and bylaws contain provisions, including cumulative voting, that could prevent or delay a change in control or change in management that would provide stockholders with a premium to the market price of their common stock. In addition, our board of directors has the authority to issue up to 250,000 shares of preferred stock in one or more series in connection with our purchase of the assets or stock of another corporation or the merger of us with or into another corporation, and to fix the preferences, rights and limitations of that series without seeking stockholder approval. Cumulative voting and the ability to issue preferred stock could have the effect of discouraging unsolicited acquisition proposals or make it more difficult for a third party to gain control of us, or otherwise could adversely affect the market price of our common stock.

Our stock price may be volatile and could experience substantial declines.

The market price of our common stock has historically experienced and may continue to experience volatility. This volatility may cause wide fluctuations in the price of our common stock on the New York Stock Exchange. The market price is likely to be affected by:

changes in general conditions in the economy or the financial markets;

variations in our quarterly operating results;

changes in financial estimates by securities analysts;

other developments affecting us, our industry, customers or competitors;

the operating and stock price performance of companies that investors deem comparable to us;

future sales by us or our major stockholders of our equity or equity-related securities; and

the number of shares available for resale in the public market under applicable securities laws.

In addition, in recent years, the stock market in general has experienced extreme price and volume fluctuations. This volatility has had a significant effect on the market price of securities issued by many companies for reasons often unrelated to their operating performance. These broad market fluctuations may adversely affect the market price of our common stock, regardless of our operating results.

Any declaration and payment of dividends in the future will depend upon a number of factors and certain of our debt arrangements restrict our ability to pay dividends.

Edgar Filing: TRIUMPH GROUP INC - Form 424B3

Our declaration and payment of cash dividends in the future and the amount thereof will depend upon our results of operations, financial condition, cash requirements, future prospects, limitations imposed by credit agreements or indentures governing debt securities and other factors deemed relevant by our Board of Directors. Certain of our debt arrangements, including our credit facility, restrict our paying dividends and making distributions on our capital stock, except for the payment of stock dividends and redemptions of an employee's shares of capital stock upon termination of employment. No assurance can be given that cash dividends will continue to be declared and paid at historical levels or at all.

S-4

Table of Contents

CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

Certain statements contained in this prospectus supplement and the documents incorporated herein by reference, including, without limitation, those concerning our liquidity and capital resources, include "forward looking statements" within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and as defined in the U.S. Private Securities Litigation Reform Act of 1995. You should not place undue reliance on these statements. Forward looking statements include information concerning our liquidity and our possible or assumed future results of operations, including descriptions of our business strategies. These statements often include words such as "believe," "expect," "anticipate," "intend," "plan," "estimate," "seek," "will," "may" or similar expressions. These statements are based on certain assumptions that we have made in light of our experience in the industry as well as our perceptions of historical trends, current conditions, expected future developments and other factors we believe are appropriate in these circumstances. As you read and consider this prospectus supplement, you should understand that these statements are not guarantees of performance or results. Actual results could differ materially from management's current expectations. Important factors that could cause actual results to differ materially from the forward-looking statements include, without limitation:

our ability to realize the anticipated benefits from the acquisition of Vought and other business acquisitions;

availability of required capital;

product liabilities in excess of insurance;

technological developments;

dependence of certain of our businesses on certain key customers;

limited availability of raw materials;

limited availability of skilled personnel;

costs and expenses and any liabilities associated with pending or threatened litigation;

the effects of customers canceling or modifying orders;

actions taken or conditions imposed by the United States and foreign governments;

the effect on our net sales of defense budget reductions by government customers;

the impact of volatile fuel prices on the airline industry;

our ability to attract and retain qualified professionals;

Edgar Filing: TRIUMPH GROUP INC - Form 424B3

long-term trends in passenger and cargo traffic in the airline industry;

changes in governmental regulation;

the impact of work stoppages or labor disruptions at our locations or at our customers or suppliers;

international hostilities and terrorism;

general economic conditions or cyclical and competitive factors affecting the aerospace industry or our business;

returns on pension assets and impacts of future discount rate changes on pension obligations; and

environmental liabilities arising out of past or present operations.

S-5

Table of Contents

We base our forward-looking statements on information currently available to us, and, except as required by law, we undertake no obligation to update these statements, whether as a result of changes in underlying factors, new information, future events or other developments except as required by law. We do not, nor does any other person, assume responsibility for the accuracy and completeness of those statements. All forward-looking statements included in this prospectus supplement and the documents incorporated by reference are qualified in their entirety by reference to the factors discussed above as well as those discussed under "Risk Factors" and the risks and uncertainties discussed in "Item 1A Risk Factors" of our Annual Report on Form 10-K for the year ended March 31, 2012.

The factors identified above are believed to be important factors (but not necessarily all of the important factors) that could cause actual results to differ materially from those expressed in any forward-looking statement made by us. Other factors not discussed herein could also have material adverse effects on us. All forward-looking statements included in this prospectus supplement and the documents incorporated by reference are expressly qualified in their entirety by the foregoing cautionary statements. We undertake no obligation to update publicly any forward-looking statement (or its associated cautionary language) whether as a result of new information or future events.

Table of Contents**USE OF PROCEEDS**

All of the shares of our common stock offered by this prospectus supplement will be sold by the selling stockholders. We will not receive any of the proceeds from the sale of these shares.

PRICE RANGE OF COMMON STOCK

Our common stock is listed on the New York Stock Exchange under the symbol "TGL."

On June 6, 2012, the last quoted price per share of our common stock on the New York Stock Exchange was \$60.32. As of May 31, 2012, there were 50,002,739 shares outstanding of our common stock. A two-for-one split of our common stock was effective on July 15, 2011.

The following table sets forth the high and low sales prices per share of our common stock as reported on the New York Stock Exchange:

	High	Low
2011		
First Quarter	\$ 81.87	\$ 60.37
Second Quarter	\$ 81.45	\$ 63.69
Third Quarter	\$ 92.56	\$ 74.00
Fourth Quarter	\$ 97.29	\$ 82.03
2012		
First Quarter	\$ 100.93	\$ 79.68
Second Quarter*	\$ 54.82	\$ 42.78
Third Quarter*	\$ 60.90	\$ 43.92
Fourth Quarter*	\$ 66.77	\$ 58.16
2013		
First Quarter (through June 6, 2012)*	\$ 66.89	\$ 56.24

*

After giving effect to the two-for-one split of our common stock that was effective on July 15, 2011. All other share price amounts included in this table have not been adjusted to give effect to the two-for-one split, nor have the share or per share amounts included in our Annual Report on Form 10-K for the year ended March 31, 2012.

DIVIDEND POLICY

During fiscal 2012 and 2011, we paid a cash dividend of \$0.14 per share and \$0.08 per share, respectively, after giving effect to the two-for-one split of our common stock that was effective on July 15, 2011. The agreements governing our indebtedness restrict our ability to pay dividends.

Table of Contents**SELLING STOCKHOLDERS**

The following table sets forth information as of June 6, 2012 with respect to the beneficial ownership of the common stock of Triumph by the selling stockholders. The selling stockholders may be deemed to be underwriters within the meaning of the Securities Act of 1933, as amended. The selling stockholders are selling all of the shares in this offering.

The amounts and percentages of shares beneficially owned are reported on the basis of regulations of the Securities and Exchange Commission, or the SEC, governing the determination of beneficial ownership of securities. Under SEC rules, a person is deemed to be a "beneficial owner" of a security if that person has or shares voting power 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. Securities that can be so acquired are deemed to be outstanding for purposes of computing such person's ownership percentage, but not for purposes of computing any other person's percentage. Under these rules, more than one person may be deemed to be a beneficial owner of the same securities and a person may be deemed to be a beneficial owner of securities as to which such person has no economic interest.

Except as otherwise indicated in the footnotes to this table, each of the beneficial owners listed has, to our knowledge, sole voting and investment power with respect to the indicated shares of common stock. Unless otherwise indicated, the address for each selling stockholder listed below is c/o The Carlyle Group, 1001 Pennsylvania Avenue, NW, Suite 220 South, Washington, DC 20004-2505.

Name and address of Beneficial Owner(1)	Shares Beneficially Owned Before the Offering and After the Offering				
	Number	Percent Before the Offering*	Shares Offered Hereby	Shares Beneficially Owned After the Offering	Percent After the Offering*
Carlyle Partners II, L.P.	407,555	**	407,555		
Carlyle International Partners II, L.P.(2)	343,260	**	343,260		
Carlyle International Partners III, L.P.(2)	18,461	**	18,461		
C/S International Partners(2)	77,397	**	77,397		
Carlyle SBC Partners II, L.P.	18,575	**	18,575		
State Board of Administration of Florida	158,344	**	158,344		
Carlyle Investment Group, L.P.	395	**	395		
Carlyle-Aerostructures Partners, L.P.	127,259	**	127,259		
Carlyle-Aerostructures International Partners, L.P.(2)	50,521	**	50,521		
Carlyle Aerostructures Management, L.P.	12,637	**	12,637		
Carlyle-Aerostructures Partners II, L.P.	97,478	**	97,478		
Carlyle-Contour Partners, L.P.	22,120	**	22,120		
Carlyle-Contour International Partners, L.P.(2)	5,091	**	5,091		
Carlyle Partners III, L.P.	3,115,925	6.2%	3,115,925		
CP III Coinvestment, L.P.	95,399	**	95,399		
CHYP Holdings, L.L.C.	115,699	**	115,699		

*
Based on 50,002,739 shares of common stock outstanding on May 31, 2012.

**
Less than 1%

(1)
Carlyle Partners III, L.P. and CP III Coinvestment, L.P. are the record owners of 3,115,925 shares and 95,399 shares, respectively. Investment discretion and control over the shares held by each of

Table of Contents

these funds is exercised by Carlyle Holdings II GP L.L.C. through its indirect subsidiary, TC Group III, L.P., which is the general partner of each of these funds. Carlyle Holdings II GP L.L.C. is the general partner of Carlyle Holdings II L.P., which is the general partner of TC Group Investment Holdings, L.P., which is the general partner of TC Group Investment Holdings Sub L.P., which is the managing member of TC Group III, L.L.C., which is the general partner of TC Group III, L.P.

Carlyle Partners II, L.P., Carlyle International Partners II, L.P., C/S International Partners, Carlyle SBC Partners II, L.P. and Carlyle International Partners III, L.P. are the record owners of 407,555 shares, 343,260 shares, 77,397 shares, 18,575 shares, and 18,461 shares, respectively. Investment discretion and control over the shares held by each of these funds is exercised by Carlyle Holdings I GP Inc. through its indirect subsidiary, TC Group II, L.L.C., which is the general partner of each of these funds. Carlyle Holdings I GP Inc. is the managing member of Carlyle Holdings I GP Sub L.L.C., which is the general partner of Carlyle Holdings I L.P., which is the managing member of TC Group, L.L.C., which is the general partner of TC Group Sub L.P., which is the managing member of TC Group II, L.L.C.

CHYP Holdings, L.L.C. is the record holder of 115,699 shares. Investment discretion and control over the shares held by the fund is exercised by Carlyle Holdings I GP Inc. through its indirect subsidiary, Carlyle High Yield Partners, L.P., which is the managing member of CHYP Holdings, L.L.C. Carlyle Holdings I GP Inc. is the managing member of Carlyle Holdings I GP Sub L.L.C., which is the general partner of Carlyle Holdings I L.P., which is the managing member of TC Group, L.L.C., which is the general partner of TC Group Sub L.P., which is the general partner of TCG High Yield Holdings, L.L.C., which is the managing member of TCG High Yield, L.L.C., which is the general partner of Carlyle High Yield Partners, L.P.

Carlyle-Aerostructures Partners, L.P., Carlyle-Aerostructures Partners II, L.P., Carlyle-Aerostructures International Partners, L.P., Carlyle-Contour Partners, L.P., Carlyle Aerostructures Management, L.P., Carlyle-Contour International Partners, L.P., and Carlyle Investment Group, L.P. are the record owners of 127,259 shares, 97,478 shares, 50,521 shares, 22,120 shares, 12,637 shares, 5,091 shares and 395 shares, respectively. Investment discretion and control over the shares held by each of these funds is exercised by Carlyle Holdings I GP Inc. through its indirect subsidiary, TC Group Sub L.P., which is the general partner of each of these funds. Carlyle Holdings I GP Inc. is the managing member of Carlyle Holdings I GP Sub L.L.C., which is the general partner of Carlyle Holdings I L.P., which is the managing member of TC Group, L.L.C., which is the general partner of TC Group Sub L.P.

The State Board of Administration of Florida is the record holder of 158,344 shares. Carlyle Investment Management L.L.C. is the investment manager for the State Board of Administration of Florida.

The Carlyle Group L.P. is the sole shareholder of Carlyle Holdings I GP Inc. and the managing member of Carlyle Holdings II GP L.L.C. Carlyle Group Management L.L.C. is the General Partner of The Carlyle Group L.P. Carlyle Group Management L.L.C. is managed by its board of directors, consisting of William E. Conway, Jr., Daniel A. D'Aniello, David M. Rubenstein, Jay S. Fishman, Lawton W. Fitt, James H. Hance, Jr., Janet Hill, Edward J. Matthias, Dr. Thomas S. Robertson and William J. Shaw. The members of the board of directors of Carlyle Group Management L.L.C. may be deemed to share beneficial ownership of the shares beneficially owned by Carlyle Holdings I GP Inc. and Carlyle Holdings II GP L.L.C. These individuals disclaim any such beneficial ownership.

(2)

The business address for each of Carlyle International Partners II, L.P., C/S International Partners, Carlyle-Aerostructures International Partners, L.P., Carlyle International Partners III, L.P., and Carlyle-Contour International Partners, L.P. is c/o Walkers Corporate Services Limited, Walker House, 87 Mary Street, George Town, Grand Cayman KY1-9001, Cayman Islands.

Table of Contents

UNDERWRITING

Triumph, the selling stockholders and Credit Suisse Securities (USA) LLC (the "underwriter") have entered into an underwriting agreement with respect to the shares being offered. Subject to certain conditions, the underwriter has agreed to purchase an aggregate of 4,666,116 shares.

The underwriter is committed to take and pay for all of the shares being offered, if any are taken.

The underwriter may receive from purchasers of the shares normal brokerage commissions in amounts agreed with such purchasers. The underwriter proposes to offer the shares of common stock from time to time for sale in one or more transactions on the New York Stock Exchange, in the over-the-counter market, through negotiated transactions or otherwise at market prices prevailing at the time of sale, at prices related to 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 common stock offered hereby, the underwriter may be deemed to have received compensation in the form of underwriting discounts. The underwriter may effect such transactions by selling shares of common stock to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriter and/or purchasers of shares of common stock for whom they may act as agents or to whom they may sell as principal.

We and our executive officers have agreed not to sell or transfer any common stock or securities convertible into, exchangeable for, exercisable for, or repayable with common stock, for 60 days after the date of this prospectus without first obtaining the written consent of the underwriter, except that our executive officers may sell up to an aggregate of 100,000 shares of common stock at any time. Specifically, we and these other persons have agreed, with certain limited exceptions, not to directly or indirectly

offer, pledge, sell or contract to sell any common stock,

sell any option or contract to purchase any common stock,

purchase any option or contract to sell any common stock,

grant any option, right or warrant for the sale of any common stock,

otherwise dispose of or transfer any common stock,

request or demand that we file a registration statement related to the common stock, or

enter into any swap or other agreement that transfers, in whole or in part, the economic consequence of ownership of any common stock whether any such swap or transaction is to be settled by delivery of shares or other securities, in cash or otherwise.

This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for or repayable with common stock. It also applies to common stock owned now or acquired later by the person executing the agreement or for which the person executing the agreement later acquires the power of disposition. In the event that the underwriter is unable to publish or distribute research reports pursuant to Rule 139 under the Securities Act of 1933, as amended, and either (x) during the last 17 days of the lock-up period referred to above, we issue an earnings release 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 or become aware that material news or a material event will occur during the 16-day period beginning on the last day of the lock-up period, the restrictions described above shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event, as applicable.

Our common stock is listed on the New York Stock Exchange under the symbol "TGI."

Table of Contents

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. 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 our stock or 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.

The underwriter will not confirm sales to any accounts over which it exercises discretionary authority without the prior written approval of the customer.

Triumph will pay all of the expenses of the offering, excluding any underwriting discounts and commissions of the selling stockholders. Triumph estimates that its total expenses with respect to the offering, excluding underwriting discounts and commissions, will be approximately \$350,000.

Triumph and the selling stockholders have agreed to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act of 1933, as amended.

Credit Suisse Securities (USA) LLC has agreed to purchase 4,666,116 shares of common stock from the selling stockholders at a price of \$58.82 per share, resulting in \$274,460,943 aggregate proceeds to the selling stockholders, before expenses.

Credit Suisse Securities (USA) LLC may offer the shares of common stock from time to time for sale to purchasers in one or more transactions 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.

Conflicts of Interest

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 from time to time have provided or in the future may provide various investment and commercial banking and financial advisory services to us and our affiliates and subsidiaries, for which they have received customary fees and commissions, and they expect to provide these services to us and others in the future, for which they expect to receive customary fees and commissions. In addition, affiliates of the underwriter from time to time have acted or in the future may continue to act as agents and lenders to us and our affiliates and subsidiaries under our or their respective credit facilities, for which services they have received or expect to receive customary compensation. In the ordinary course of their various business activities, the underwriter and its affiliates may make or hold a broad array of investments, including serving as counterparties to certain derivative and hedging arrangements, and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of Triumph. The underwriter and its affiliates may also make investment recommendations

Table of Contents

and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

United Kingdom

This document is for distribution only to persons who (i) have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended, the "Financial Promotion Order"), (ii) are persons falling within Article 49(2)(a) to (d) ("high net worth companies, unincorporated associations etc") of the Financial Promotion Order, (iii) are outside the United Kingdom, or (iv) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000 (the "FSMA")) in connection with the issue or sale of any securities may otherwise lawfully be communicated or caused to be communicated (all such persons together being referred to as "relevant persons"). This document is directed only at relevant persons and must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is available only to relevant persons and will be engaged in only with relevant persons.

The underwriter has warranted and agreed that:

- (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA) received by it in connection with the issue or sale of the shares in circumstances in which Section 21(1) of the FSMA does not apply to Triumph; and
- (b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares in, from or otherwise involving the United Kingdom.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State), the underwriter has represented and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State it has not made and will not make an offer of shares which are the subject of the offering contemplated by this prospectus supplement to the public in that Relevant Member State other than:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives for any such offer; or
- (c) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares shall require Triumph or the selling stockholders to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer of shares to the public" in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in that Member State by any

Table of Contents

measure implementing the Prospectus Directive in that Member State, the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State) and includes any relevant implementing measure in each Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Hong Kong

The shares may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong), or (ii) to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in this prospectus supplement (and the accompanying prospectus) being a "prospectus" within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong), and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case, whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

Singapore

Neither this prospectus supplement nor the accompanying prospectus has been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus supplement, the accompanying prospectus or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"), (ii) to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 by a relevant person which is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for 6 months after that corporation or that trust has acquired the shares under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

Japan

The shares have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the "Financial Instruments and Exchange Law") and the underwriter has agreed that it will not offer or sell any shares, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

Table of Contents

NOTICE TO CANADIAN RESIDENTS

Resale Restrictions

The distribution of the shares in Canada is being made only in the provinces of Ontario, Quebec, Alberta, British Columbia and Manitoba on a private placement basis exempt from the requirement that we and the selling stockholders prepare and file a prospectus with the securities regulatory authorities in each province where trades of shares are made. Any resale of the shares in Canada must be made under applicable securities laws which may vary depending on the relevant jurisdiction, and which may require resales to be made under available statutory exemptions or under a discretionary exemption granted by the applicable Canadian securities regulatory authority. Purchasers are advised to seek legal advice prior to any resale of the shares.

Representations of Purchasers

By purchasing shares in Canada and accepting delivery of a purchase confirmation, a purchaser is representing to us, the selling stockholders and the dealer from whom the purchase confirmation is received that:

the purchaser is entitled under applicable provincial securities laws to purchase the shares without the benefit of a prospectus qualified under those securities laws as it is an "accredited investor" as defined under National Instrument 45-106 Prospectus and Registration Exemptions,

the purchaser is a "Canadian permitted client" as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*, or as otherwise interpreted and applied by the Canadian Securities Administrators,

where required by law, the purchaser is purchasing as principal and not as agent,

the purchaser has reviewed the text above under "Resale Restrictions", and

the purchaser acknowledges and consents to the provision of specified information concerning the purchase of the shares to the regulatory authority that by law is entitled to collect the information, including certain personal information. For purchasers in Ontario, questions about such indirect collection of personal information should be directed to Administrative Support Clerk, Ontario Securities Commission, Suite 1903, Box 55, 20 Queen Street West, Toronto, Ontario M5H 3S8 or to (416) 593-3684.

Rights of Action Ontario Purchasers

Under Ontario securities legislation, certain purchasers who purchase a security offered by this document during the period of distribution will have a statutory right of action for damages, or while still the owner of the shares, for rescission against us and the selling stockholders in the event that this document contains a misrepresentation without regard to whether the purchaser relied on the misrepresentation. The right of action for damages is exercisable not later than the earlier of 180 days from the date the purchaser first had knowledge of the facts giving rise to the cause of action and three years from the date on which payment is made for the shares. The right of action for rescission is exercisable not later than 180 days from the date on which payment is made for the shares. If a purchaser elects to exercise the right of action for rescission, the purchaser will have no right of action for damages against us and the selling stockholders. In no case will the amount recoverable in any action exceed the price at which the shares were offered to the purchaser and if the purchaser is shown to have purchased the securities with knowledge of the misrepresentation, we and the selling stockholders will have no liability. In the case of an action for damages, we and the selling stockholders will not be liable for all or any portion of the damages that are proven to not represent the

Table of Contents

depreciation in value of the shares as a result of the misrepresentation relied upon. These rights are in addition to, and without derogation from, any other rights or remedies available at law to an Ontario purchaser. The foregoing is a summary of the rights available to an Ontario purchaser. Ontario purchasers should refer to the complete text of the relevant statutory provisions.

Enforcement of Legal Rights

All of our directors and officers as well as the experts named herein and the selling stockholders may be located outside of Canada and, as a result, it may not be possible for Canadian purchasers to effect service of process within Canada upon us or those persons. All or a substantial portion of our assets and the assets of those persons may be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against us or those persons in Canada or to enforce a judgment obtained in Canadian courts against us or those persons outside of Canada.

Taxation and Eligibility for Investment

Canadian purchasers of shares should consult their own legal and tax advisors with respect to the tax consequences of an investment in the shares in their particular circumstances and about the eligibility of the investment by the purchaser under relevant Canadian legislation.

Table of Contents

VALIDITY OF THE SHARES

The validity of the common stock being offered by this prospectus supplement will be passed upon for us by Ballard Spahr LLP. Certain matters with respect to the selling stockholders will be passed upon by Debevoise & Plimpton LLP. Certain legal matters will be passed upon for the underwriter by Shearman & Sterling LLP.

INCORPORATION BY REFERENCE

The rules of the Commission allow us to incorporate by reference information into this prospectus supplement. The information incorporated by reference is considered to be a part of this prospectus supplement, and information that we file later with the Commission, to the extent incorporated into this prospectus supplement, will automatically update and supersede this information. This prospectus supplement incorporates by reference the documents listed below:

our Annual Report on Form 10-K for the year ended March 31, 2012;

our Current Report on Form 8-K dated May 30, 2012;

our preliminary Proxy Statement on Schedule 14A for our 2012 annual meeting of stockholders filed with the Commission on June 1, 2012;

the description of our common stock contained in our registration statement on Form 8-A dated September 27, 1996; and

all documents filed by us with the Commission pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended (other than Current Reports furnished under Items 2.02 and 7.01 (including any financial statements or exhibits relating thereto furnished pursuant to Item 9.01) of Form 8-K), after the date of this prospectus.

You should read the information relating to us in this prospectus supplement together with the information in the documents incorporated by reference. Nothing contained herein shall be deemed to incorporate information furnished to, but not filed with, the Commission.

You can obtain any of the filings incorporated by reference in this prospectus supplement through us or from the Commission through Commission's Internet site or at the address listed above. We will provide without charge to each person, including any beneficial owner, to whom a copy of this prospectus supplement is delivered, upon written or oral request of such person, a copy of any or all of the documents referred to above which have been or may be incorporated by reference in this prospectus. You should direct requests for those documents to Triumph Group, Inc., 899 Cassatt Road, Suite 210, Berwyn, Pennsylvania 19312, Attention: Investor Relations (telephone 610-251-1000).

Table of Contents

PROSPECTUS

TRIUMPH GROUP, INC.

Common Stock Preferred Stock Warrants Units

Triumph Group, Inc. or selling securityholders may, in one or more offerings, offer and sell from time to time:

shares of common stock;

shares of preferred stock in one or more series, which may be converted into or exchanged for common stock;

warrants to purchase common stock, preferred stock or other securities; or

units consisting of two or more of the foregoing securities.

We will offer these securities in amounts, at prices and on terms to be determined by market conditions at the time of offering.

This prospectus describes only the general terms of these securities and the general manner in which we or selling securityholders will offer the securities. We will provide the specific terms of these securities in supplements to this prospectus. You should read this prospectus and any prospectus supplements carefully before you invest in these securities. This prospectus may not be used to consummate sales of these securities unless accompanied by a prospectus supplement.

These securities may be sold by us or selling securityholders to underwriters, or directly to purchasers, agents, dealers or through brokers. The names of any other underwriters or of any dealers or agents and the specific terms of a plan of distribution will be identified in the prospectus supplement.

Selling securityholders that are affiliates of Triumph Group, Inc. may be deemed to be "underwriters" within the meaning of the Securities Act of 1933, as amended, or the Securities Act, and, as a result, may be deemed to be offering securities, indirectly, on our behalf. We will not receive any of the proceeds from the sale of common units by selling securityholders.

INVESTING IN OUR SECURITIES INVOLVES RISK. YOU SHOULD CAREFULLY CONSIDER THE RISK FACTORS ON PAGE 3 OF THIS PROSPECTUS BEFORE YOU MAKE ANY INVESTMENT IN OUR SECURITIES.

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.

TABLE OF CONTENTS

	Page
<u>ABOUT THIS PROSPECTUS</u>	<u>2</u>
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	<u>2</u>
<u>INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE</u>	<u>2</u>
<u>RISK FACTORS</u>	<u>3</u>
<u>FORWARD-LOOKING INFORMATION</u>	<u>4</u>
<u>ABOUT TRIUMPH GROUP, INC.</u>	<u>5</u>
<u>USE OF PROCEEDS</u>	<u>7</u>
<u>RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED STOCK DIVIDENDS</u>	<u>7</u>
<u>DESCRIPTION OF THE EQUITY SECURITIES</u>	<u>8</u>
<u>DESCRIPTION OF THE WARRANTS</u>	<u>10</u>
<u>SELLING SECURITYHOLDERS</u>	<u>11</u>
<u>PLAN OF DISTRIBUTION</u>	<u>12</u>
<u>VALIDITY OF THE SECURITIES</u>	<u>14</u>
<u>EXPERTS</u>	<u>14</u>

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission, or SEC, utilizing a "shelf" registration process. Under this shelf process, we may from time to time sell any combination of the securities described in this prospectus in one or more offerings.

We provide information to you about the securities in two separate documents that progressively provide more specific detail:

this prospectus, which contains general information, some of which may not apply to your securities; and

an accompanying prospectus supplement, which describes the specific terms of your securities and may also add, update or change information contained in this prospectus.

If the terms of the securities offered vary between the accompanying prospectus supplement and this prospectus, you should rely on the information contained in the prospectus supplement.

You should read both this prospectus and any prospectus supplement together with the additional information described below under "Where You Can Find More Information" to learn more about us and the securities we are offering.

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement with the SEC under the Securities Act of 1933, as amended, that registers the securities to be offered subsequently by any prospectus supplement to this prospectus. The registration statement, including the attached exhibits, contains additional relevant information about us. In addition, we file annual, quarterly and other reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC's public reference room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Please call the SEC at 1-800-732-0330 for further information on its public reference room. Our SEC filings are also available to the public over the Internet at the SEC's website at www.sec.gov or at our website at www.triumphgroup.com. You also can obtain information about us at the offices of the New York Stock Exchange, 20 Broad Street, New York, New York 10005.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus. This means that we can disclose important information to you by referring you to other documents we have filed separately with the SEC, without actually including the specific information in this prospectus or any prospectus supplement. The information incorporated by reference is considered to be part of this prospectus, and any applicable prospectus supplement, and information that we file later with the SEC (and that is deemed to be "filed" with the SEC) will automatically update, and may supersede, information in this prospectus and any prospectus supplement.

We are incorporating by reference the documents listed below. These reports contain important information about us, our financial condition and results of operations:

our Annual Report on Form 10-K for the fiscal year ended March 31, 2011, including any amendment(s) or report(s) filed for the purpose of updating such filing;

our Current Report on Form 8-K dated May 17, 2011; and

our Proxy Statement filed on August 27, 2010.

Table of Contents

Until our offering is completed, any future filings that we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") other than information furnished to the SEC under Item 2.02 or Item 7.01 of any Current Report on Form 8-K, also will be automatically incorporated by reference into this prospectus.

We make available free of charge through our Internet website, www.triumphgroup.com, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained on our Internet website is not part of this prospectus or any prospectus supplement.

You may request a copy of any of the documents that we incorporate by reference in this prospectus, at no cost, by writing or telephoning us at the following address:

Triumph Group, Inc.
Investor Relations
1550 Liberty Ridge Drive, Suite 100
Wayne, Pennsylvania 19087
Telephone: (610) 251-1000

You should rely only on the information included or incorporated by reference in this prospectus or any prospectus supplement. We have not authorized anyone else to provide you with other information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front of these documents.

RISK FACTORS

An investment in our securities involves risks. Before you invest in our securities, you should carefully consider the following risk factors, in addition to the risk factors included in our most recent annual report on Form 10-K, subsequent quarterly reports on Form 10-Q and those that may be included in the applicable prospectus supplement, as well as risks described in "Management's Discussion and Analysis of Financial Condition and Results of Operations" and cautionary notes regarding forward-looking statements included or incorporated by reference herein, together with all of the other information included in this prospectus, any prospectus supplement and the documents we incorporate by reference.

Our charter documents may inhibit a takeover that stockholders may consider favorable.

Our certificate of incorporation and bylaws contain provisions, including cumulative voting, that could prevent or delay a change in control or change in management that would provide stockholders with a premium to the market price of their common stock. In addition, our board of directors has the authority to issue up to 250,000 shares of preferred stock in one or more series in connection with our purchase of the assets or stock of another corporation or the merger of us with or into another corporation, and to fix the preferences, rights and limitations of that series without seeking stockholder approval. Cumulative voting and the ability to issue preferred stock could have the effect of discouraging unsolicited acquisition proposals or make it more difficult for a third party to gain control of us, or otherwise could adversely affect the market price of our common stock.

Table of Contents

Our stock price may be volatile and could experience substantial declines.

The market price of our common stock has historically experienced and may continue to experience volatility. This volatility may cause wide fluctuations in the price of our common stock on the New York Stock Exchange. The market price is likely to be affected by:

- changes in general conditions in the economy or the financial markets;
- variations in our quarterly operating results;
- changes in financial estimates by securities analysts;
- other developments affecting us, our industry, customers or competitors;
- the operating and stock price performance of companies that investors deem comparable to us;
- future sales by us or our major stockholders of our equity or equity-related securities; and
- the number of shares available for resale in the public market under applicable securities laws.

In addition, in recent years, the stock market in general has experienced extreme price and volume fluctuations. This volatility has had a significant effect on the market price of securities issued by many companies for reasons often unrelated to their operating performance. These broad market fluctuations may adversely affect the market price of our common stock, regardless of our operating results.

Any declaration and payment of dividends in the future will depend upon a number of factors and certain of our debt arrangements restrict our ability to pay dividends.

Our declaration and payment of cash dividends in the future and the amount thereof will depend upon our results of operations, financial condition, cash requirements, future prospects, limitations imposed by credit agreements or indentures governing debt securities and other factors deemed relevant by our Board of Directors. Certain of our debt arrangements, including our credit facility, restrict our paying dividends and making distributions on our capital stock, except for the payment of stock dividends and redemptions of an employee's shares of capital stock upon termination of employment. No assurance can be given that cash dividends will continue to be declared and paid at historical levels or at all.

FORWARD-LOOKING INFORMATION

Some of the information contained in this prospectus and any accompanying prospectus supplement (including documents incorporated by reference) are forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements discuss estimates, goals, intentions and expectations as to future trends, plans, events, results of operations or financial condition, or state other information relating to us, based on current beliefs of management as well as assumptions made by, and information currently available to, us. Forward-looking statements generally will be accompanied by words such as "anticipate," "believe," "budget," "could," "estimate," "expect," "forecast," "intend," "may," "plan," "possible," "potential," "predict," "project," "scheduled," "should," or other similar words, phrases or expressions that convey the uncertainty of future events or outcomes. Although we believe these forward-looking statements are reasonable, they are based upon a number of assumptions concerning future conditions, any or all of which may ultimately prove to be inaccurate. Forward-looking statements involve a number of risks and uncertainties. Important factors that could cause actual results to differ materially from the forward-looking statements include, without limitation:

our ability to successfully integrate the Vought business and other acquired businesses and realize the anticipated benefits of such acquisitions;

Table of Contents

availability of required capital;

product liabilities in excess of insurance;

technological developments;

dependence of certain of our businesses on certain key customers;

limited availability of raw materials;

limited availability of skilled personnel;

costs and expenses and any liabilities associated with pending or threatened litigation;

the effects of customers canceling or modifying orders;

actions taken or conditions imposed by the United States and foreign governments;

the effect on our net sales of defense budget reductions by government customers;

the impact of volatile fuel prices on the airline industry;

our ability to attract and retain qualified professionals;

long-term trends in passenger and cargo traffic in the airline industry;

changes in governmental regulation;

the impact of work stoppages or labor disruptions at our locations or at our customers or suppliers;

international hostilities and terrorism;

general economic conditions or cyclical factors affecting the aerospace industry or our business;

returns on pension assets and impacts of future discount rate changes on pension obligations; and

environmental liabilities arising out of past or present operations.

Edgar Filing: TRIUMPH GROUP INC - Form 424B3

We base our forward-looking statements on information currently available to us, and, except as required by law, we undertake no obligation to update these statements, whether as a result of changes in underlying factors, new information, future events or other developments except as required by law. We do not, nor does any other person, assume responsibility for the accuracy and completeness of those statements. All of the forward-looking statements are qualified in their entirety by reference to the factors discussed above as well as those discussed under "Risk Factors."

The factors identified above are believed to be important factors (but not necessarily all of the important factors) that could cause actual results to differ materially from those expressed in any forward-looking statement made by us. Other factors not discussed herein could also have material adverse effects on us. All forward-looking statements included in this prospectus and the accompanying prospectus supplement are expressly qualified in their entirety by the foregoing cautionary statements. We undertake no obligation to update publicly any forward-looking statement (or its associated cautionary language) whether as a result of new information or future events.

ABOUT TRIUMPH GROUP, INC.

Triumph Group, Inc. ("Triumph" or the "Company") was incorporated in 1993 in Delaware. Our companies design, engineer, manufacture, repair, overhaul and distribute a broad portfolio of aerostructures, aircraft components, accessories, subassemblies and systems. We serve a broad, worldwide spectrum of the aviation industry, including original equipment manufacturers, or OEMs, of

Table of Contents

commercial, regional, business and military aircraft and aircraft components, as well as commercial and regional airlines and air cargo carriers.

On June 16, 2010, we announced the completion of the acquisition of Vought Aircraft Industries, Inc. ("Vought") from certain investment funds sponsored by The Carlyle Group. The acquisition of Vought establishes the Company as a leading global manufacturer of aerostructures for commercial, military and business jet aircraft. Products include fuselages, wings, empennages, nacelles and helicopter cabins. Strategically, the acquisition of Vought substantially increases our design capabilities and provides further diversification across customers and programs, as well as exposure to new growth platforms. The acquired business is operating as Triumph Aerostructures-Vought Commercial Division, Triumph Aerostructures-Vought Integrated Programs Division and Triumph Structures Everett. The results of Vought are included in the Company's Aerostructures Segment from the date of acquisition.

We offer a variety of products and services to the aerospace industry through three groups of operating businesses: (i) Triumph Aerostructures Group, whose companies revenues are derived from the design, manufacture, assembly and integration of metallic and composite aerostructures and structural components for the global aerospace original equipment manufacturers, or OEM, market; (ii) Triumph Aerospace Systems Group, whose companies design, engineer and manufacture a wide range of proprietary and build-to-print components, assemblies and systems also for the OEM market; and (iii) Triumph Aftermarket Services Group, whose companies serve aircraft fleets, notably commercial airlines, the U.S. military and cargo carriers, through the maintenance, repair and overhaul of aircraft components and accessories manufactured by third parties.

Our Aerostructures Group utilizes its capabilities to design, manufacture and build complete metallic and composite aerostructures and structural components. This group also includes companies performing complex manufacturing, machining and forming processes for a full range of structural components, as well as complete assemblies and subassemblies. This group services the full spectrum of aerospace customers, which include aerospace OEMs and the top-tier manufacturers who supply them and airlines, air cargo carriers, and domestic and foreign militaries.

Our Aerospace Systems Group utilizes its capabilities to design and engineer mechanical, electromechanical, hydraulic and hydromechanical control systems, while continuing to broaden the scope of detailed parts and assemblies that we supply to the aerospace market. Customers typically return such systems to us for repairs and overhauls and spare parts. This group services the full spectrum of aerospace customers, which include aerospace OEMs and the top-tier manufacturers who supply them and airlines, air cargo carriers, and domestic and foreign militaries.

Our Aftermarket Services Group performs maintenance, repair and overhaul services ("MRO") and supplies spare parts of various types of cockpit instruments, and gauges for the commercial and military aviation industry and primarily services the world's airline and air cargo carrier customers. This group also designs, engineers, manufactures, repairs and overhauls aftermarket aerospace gas turbines engine components, offers comprehensive MRO solutions, leasing packages, exchange programs and parts and services to airline, air cargo and third party overhaul facilities. We also continue to develop Federal Aviation Administration, or FAA, approved Designated Engineering Representative, or DER, proprietary repair procedures for the components we repair and overhaul, which range from detailed components to complex subsystems. Some specialties include navigation, flight, and engine monitoring instruments as well as autopilots, voice and data recorders, smoke detection systems and aircraft lighting.

Our headquarters are at 1550 Liberty Ridge, Drive, Suite 100, Wayne, Pennsylvania 19087. Our telephone number is (610) 251-1000 and our Internet website address is www.triumphgroup.com.

Table of Contents

USE OF PROCEEDS

Unless we specify otherwise in any prospectus supplement, the net proceeds (after the payment of offering expenses and underwriting discounts and commissions) from the sale of securities by us offered from time to time using this prospectus will be used for our general corporate purposes, which may include:

- paying or refinancing our indebtedness;
- funding working capital, capital expenditures or acquisitions;
- investing in or lending money to our subsidiaries; and
- repurchasing or redeeming our securities.

The actual application of proceeds from the sale of any particular offering of securities using this prospectus will be described in the applicable prospectus supplement relating to such offering. The precise amount and timing of the application of these proceeds will depend upon our funding requirements and the availability and cost of other funds.

We will not receive any of the proceeds from the sale of securities by selling securityholders.

RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

Our ratio of earnings to fixed charges for each of the fiscal years ended 2007 through 2011 was as follows:

	Year Ended March 31,				
	2007	2008	2009	2010	2011
Ratio of Earnings to Fixed Charges(1)	4.3x	4.8x	6.2x	4.6x	3.4x

(1) For purposes of calculating this ratio, "earnings" consists of income from continuing operations before income taxes and income from equity affiliates plus (a) fixed charges minus interest capitalized during the period, (b) distributed income from equity affiliates and (c) amortization of previously capitalized interest. "Fixed charges" consists of interest expense, capitalized interest, amortization of discount on indebtedness and an appropriate portion of rental expense representative of the interest factor. There was no preferred stock outstanding for each of the periods indicated.

Table of Contents

DESCRIPTION OF THE EQUITY SECURITIES

Our authorized stock consists of:

100,000,000 shares of common stock, \$0.001 par value per share, of which 24,517,850 shares were outstanding on May 9, 2011; and

250,000 shares of preferred stock, \$.01 par value per share, none of which are outstanding on the date of this prospectus.

Common Stock

Except as otherwise required by applicable law, all shares of the common stock shall be identical in all respects and shall entitle the holders thereof to the same rights and privileges, subject to the same qualifications, limitations and restrictions.

The holders of the common stock shall have one vote for each share thereof.

The holders of common stock are entitled to cumulate their votes in the election of directors, which means a holder of common stock may cast as many votes in the aggregate as the number of shares he or she is entitled to vote multiplied by the number of directors to be elected and to cast all votes for one director nominee or distribute these votes among two or more director nominees, as a holder sees fit.

As and when dividends are declared or paid thereon, whether in cash, property or securities of the Company, the holders of the common stock shall be entitled to participate in such dividends ratably on a per share basis, provided that if dividends are declared which are payable in shares of common capital stock, dividends shall be declared which are payable at the same rate on each class of common capital stock and the dividends payable to holders of common stock shall be payable in shares of that class of common capital stock. The right of the holders of the common stock to receive dividends is subject to the provisions of the preferred stock.

Subject to the provisions of the preferred stock, the holders of the common stock shall be entitled to participate ratably on a per share basis in all distributions to holders in any liquidation, dissolution or winding up of the Company.

Preferred Stock

The Board of Directors is authorized, subject to limitations prescribed by law and the provisions of the Certificate of Incorporation, to provide for the issuance of the shares of preferred stock in series, and, by filing a statement pursuant to the applicable law of the State of Delaware, to establish from time to time the number of shares to be included in each such series, and to fix the designations, powers, preferences and rights of the shares of each such series and the qualifications, limitations or restrictions thereof; provided however, that any shares of preferred stock may only be issued by the Company as consideration for the stock or assets of another corporation or in connection with a merger of the Company with or into another corporation or of another corporation with or into the Company.

The authority of the Board of Directors with respect to each series shall include, but not be limited to, determination of the following:

- (a) the number of shares constituting that series and the distinctive designation of that series;
- (b) the dividend rate on the shares of that series, whether dividends shall be cumulative, and, if so, from which date or dates, and the relative rights of priority, if any, of payment of dividends on shares of that series;

Table of Contents

(c) whether that series shall have voting rights, in addition to the voting rights provided by law, and, if so, the terms of such voting rights;

(d) whether that series shall have conversion privileges, and, if so, the terms and conditions of such conversion, including provision for adjustment of the conversion rate in such events as the Board of Directors shall determine;

(e) whether or not the shares of that series shall be redeemable, and, if so, the terms and conditions of such redemption, including the date or dates upon or after which they shall be redeemable, and the amount per share payable in case of redemption, which may vary under different conditions and at different redemption dates;

(f) whether that series shall have a sinking fund for the redemption or purchase of shares of that series, and, if so, the terms and amount of such sinking fund;

(g) the rights of the shares of that series in the event of a voluntary or involuntary liquidation, dissolution or winding up of the Company, and the relative rights of priority, if any, of payment of shares of that series; and

(h) any other relative rights, preferences and limitations of that series.

Dividends on outstanding shares of preferred stock shall be paid or declared and set apart for payment before any dividends shall be paid or declared and set apart for payment on the Common Stock with respect to the same dividend period.

If upon any voluntary or involuntary liquidation, dissolution or winding up of the Company, the assets for distribution to holders of shares of preferred stock of all series shall be insufficient to pay such holders the full preferential amount to which they are entitled, then such assets shall be distributed ratably among the shares of all series of preferred stock in accordance with the respective preferential amounts (including unpaid cumulative dividends, if any) payable with respect thereto.

The prospectus supplement will describe the designations, preferences, dividend rates, liquidation rights, voting rights, conversion rights, redemption rights and such other provisions determined by our board of directors to apply to the preferred stock.

Table of Contents

DESCRIPTION OF THE WARRANTS

The following description summarizes certain general terms and provisions of the warrants, is not complete and is qualified in its entirety by reference to the warrant agreement under which the warrants are issued.

We may issue warrants as separate securities or together with any of our equity securities. Unless otherwise specified in a prospectus supplement, the warrants will be immediately exercisable upon issuance and may be traded separately from any series of debt or equity securities with which they are issued. The prospectus supplement will set forth the specific terms of any warrants offered thereby, including, where applicable:

the designation, number of shares, stated value and terms (including liquidation, dividend, conversion and voting rights) of the series of preferred stock purchasable upon exercise of warrants and the price at which such number of shares of preferred stock may be purchased upon such exercise;

the number of shares of common stock purchasable upon exercise of warrants and the price at which such number of shares of common stock may be purchased upon such exercise;

the date on which the right to exercise warrants shall commence and the date upon which such right shall expire;

any United States federal income tax consequences applicable to the warrants; and

any other relevant terms of the warrants.

The exercise price of each warrant will be subject to adjustment upon the occurrence of certain events as set forth in each prospectus supplement. Prior to the exercise of any warrants, holders of warrants will not have any of the rights of holders of the equity securities purchasable upon their exercise. Warrants will become void if by their expiration date they have not been exercised.

Table of Contents

SELLING SECURITYHOLDERS

We are registering for resale an indeterminate number of our shares of common stock held by certain of our securityholders to be named in a prospectus supplement.

The prospectus supplement for any offering of our shares of common stock by a selling securityholder hereunder will include, among other things, the following information:

the name of each selling securityholder;

the nature of any position, office or other material relationship which each selling securityholder has had within the last three years with us or any of our predecessors or affiliates;

the number of shares of common stock held by each selling securityholder prior to the offering;

the number of shares of common stock to be offered for each selling securityholder's account; and

the number and (if one percent or more) the percentage of common stock held by each of the selling securityholders after the offering.

Table of Contents

PLAN OF DISTRIBUTION

We or selling securityholders may sell the securities offered by this prospectus:

to or through underwriters or dealers;

directly to one or more institutional purchasers; or

through agents.

We or the selling securityholders may sell the securities offered by this prospectus from time to time in one or more transactions:

at a fixed price or prices, which may be changed from time to time;

at market prices prevailing at the time of sale;

at prices related to the prevailing market prices; or

at negotiated prices.

The prospectus supplement with respect to the securities being offered will set forth the terms of the offering of the securities, including:

the name or names of any underwriters or agents;

the purchase price of the securities and the proceeds to us from such sale;

any delayed delivery arrangements;

any underwriting discounts and other items constituting underwriters' compensation;

any over-allotment options;

any initial public offering price; and

any discounts or concessions allowed or reallowed or paid to dealers and any securities exchanges on which the securities may be listed.

Only underwriters named in the prospectus supplement are deemed to be underwriters in connection with the securities offered by that prospectus supplement.

Edgar Filing: TRIUMPH GROUP INC - Form 424B3

If underwriters are used in any sale of the securities, those securities will be acquired by the underwriters for their own account and may be resold by them 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. The securities may be offered to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. The obligations of the underwriters to purchase any securities will be subject to conditions precedent, and the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement if any such securities are purchased. Any initial public offering price and any discounts or concessions allowed or reallocated or paid to dealers may be changed from time to time.

We may also sell the securities directly or through agents designated by us. Any agent involved in the offering and sale of the securities, and any commissions payable by us to any agent, will be set forth in the prospectus supplement. Unless otherwise indicated in the prospectus supplement, any agent is acting on a best efforts basis for the period of its appointment.

We may authorize agents, underwriters or dealers to solicit offers by institutional investors to purchase securities from us pursuant to contracts providing for payment and delivery on a future date. Institutional investors to which such offers may be made include commercial and savings banks,

Table of Contents

insurance companies, pension funds, investment companies, educational and charitable institutions and other institutions as may be approved by us. The obligations of any purchasers under any such delayed delivery and payment arrangements will be subject to the condition that the purchase of the offered securities shall not at the time of delivery be prohibited under the laws of any jurisdiction to which such institution is subject. The underwriters will not have any responsibility with respect to the validity of such arrangements or our performance or the performance of any institutional investors thereunder.

The underwriters and agents who participate in the distribution of these securities may be entitled under agreements entered into with us and, if applicable, the selling securityholders to indemnification by us against certain liabilities, including liabilities under the Securities Act. These underwriters and agents may engage in transactions with, or perform services for, us in the ordinary course of business.

Table of Contents

VALIDITY OF THE SECURITIES

The validity of the securities offered by this prospectus will be passed upon for us by Ballard Spahr LLP.

EXPERTS

The consolidated financial statements of Triumph Group, Inc., appearing in Triumph Group, Inc.'s Annual Report (Form 10-K) for the year ended March 31, 2011, (including the schedule appearing therein) and the effectiveness of Triumph Group, Inc.'s internal control over financial reporting as of March 31, 2011, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein by reference in reliance upon the reports of Ernst & Young LLP, pertaining to such financial statements and the effectiveness of our internal control over financial reporting as of the respective dates (to the extent covered by consents filed with the Securities and Exchange Commission) given on the authority of such firm as experts in accounting and auditing.

The consolidated financial statements of Vought Aircraft Industries, Inc. as of December 31, 2009 and 2008 and for each of the three years in the period ended December 31, 2009 have been audited by Ernst & Young LLP, an independent registered public accounting firm, as set forth in their report thereon dated March 25, 2010 (which contains an explanatory paragraph describing conditions that raised substantial doubt about Vought Aircraft Industries, Inc.'s ability to continue as a going concern as described in Note 12 to the consolidated financial statements), incorporated herein by reference. Such consolidated financial statements have been incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

Table of Contents

PROSPECTUS SUPPLEMENT

Common Stock
