TRIUMPH GROUP INC / Form 424B1 June 24, 2003

QuickLinks -- Click here to rapidly navigate through this document

Rule 424(b)(1)

File No. 333-106119

1,206,135 Shares

Common Stock

This is a public offering of common stock of Triumph Group, Inc. The selling stockholder is offering all of the 1,206,135 shares of our common stock offered by this prospectus. We will not receive any of the proceeds from the sale of shares.

Our common stock is traded on the New York Stock Exchange under the symbol "TGI." On June 23, 2003, the last reported sale price of our common stock was \$30.86 per share.

Investing in the common stock involves risk. See "Risk Factors" beginning on page 3.

	Price	Price to Public		Underwriting Discounts and Commissions		Total	
Per Share	\$	30.00	\$	1.20	\$	28.80	
Total	\$	36,184,050	\$	1,447,362	\$	34,736,688	

Delivery of the shares of common stock will be made on or about June 27, 2003.

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

Deutsche Bank Securities

The date of this prospectus is June 23, 2003.

PROSPECTUS SUMMARY

You should read the following summary together with the more detailed information appearing elsewhere in this prospectus, and the information and financial statements and notes in our Annual Report on Form 10-K for the fiscal year ended March 31, 2003, which is incorporated by reference herein.

Triumph Group, Inc.

We design, engineer, manufacture, repair, overhaul and distribute aircraft components, such as mechanical and electromechanical control systems, aircraft and engine accessories, structural components, auxiliary power units, commonly referred to as APUs, avionics and aircraft instruments. We serve a broad spectrum of the aerospace industry, including commercial and regional airlines, air cargo carriers, as well as original equipment manufacturers, commonly referred to as OEMs, of commercial, regional, business and military aircraft and components, and manufacturers and operators of industrial gas turbine engines.

Our executive offices are located at 1550 Liberty Ridge, Suite 100, Wayne, Pennsylvania 19087 and our telephone number is (610) 251-1000. Information contained on our website at *www.triumphgroup.com* does not constitute part of this prospectus.

Recent Developments

As we announced on June 11, 2003, due to a continuing downturn in aircraft production and airline passenger miles flown, we expect our results from continuing operations for the first quarter ending June 30, 2003 to be \$0.45 to \$0.50 per common share (on a diluted basis).

1

The Offering

The Ottering					
Common stock offered by the selling stockholder	1,206,135 shares				
Common stock to be outstanding after this offering	15,844,464 shares				
Use of proceeds	We will not receive any proceeds from this offering of shares by the selling stockholder.				
Dividend policy	We intend to retain all future earnings, if any, to fund the development and growth of our business. We do not anticipate paying cash dividends on our common stock.				
New York Stock Exchange Symbol	TGI				

The number of shares of our common stock outstanding after the offering is based on shares outstanding as of June 10, 2003. This number does not include:

812,067 shares of common stock issuable upon exercise of outstanding stock options under our stock option plans as of June 10, 2003 at a weighted average exercise price of \$34.86; and

393,552 shares of common stock reserved and available for future issuance under our stock option plans as of June 10, 2003.

2

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risk factors set forth in our Annual Report on Form 10-K for the fiscal year ended March 31, 2003, along with the following risk factors and all other information contained in this prospectus before purchasing our common stock. The risk and uncertainties described in our Form 10-K and set forth below are not the only ones facing us. Additional risks and uncertainties that we are unaware of, or that we currently deem immaterial, also may become important factors that affect us.

If any of these risks occur, our business, financial condition or results of operations could be materially and adversely affected. In that case, the trading price of our common stock could decline, and you may lose some or all of your investment.

Risks Related to 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; and

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

The entire stock market has experienced significant volatility in the last year due, in part, to the terrorist attacks of September 11, 2001 and resulting international hostilities. This volatility has affected the market prices of securities issued by many companies for reasons unrelated to their operating performance. Therefore, we cannot predict the market price for our common stock after this offering.

3

We do not anticipate paying dividends in the foreseeable future.

We have not paid any dividends on our common stock and do not intend to pay dividends in the foreseeable future. In addition, certain of our debt arrangements, including our revolving credit facility, currently restrict the payments of dividends. In the event that we and/or certain of our subsidiaries enter into future financings, the terms of such financings may include dividend restrictions.

4

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains or incorporates by reference statements about future events and expectations that constitute forward-looking statements. Forward-looking statements are based on management's beliefs, assumptions and expectations of our future economic performance, taking into account the information currently available to management. These statements are not statements of historical fact. Forward-looking statements involve risk and uncertainties that may cause our actual results, performance or financial condition to differ materially from the expectations of future results, performance or financial conditions we express or imply in any forward-looking statements. Factors that could contribute to these differences include those discussed above in "Risk Factors" and in other sections of this prospectus. The words "believe," "may," "will," "should," "anticipate," "estimate," "expect," "intend," "objective," "seek," or similar words, or the negatives of these words, identify forward-looking statements. We qualify any forward-looking statements entirely by these cautionary factors.

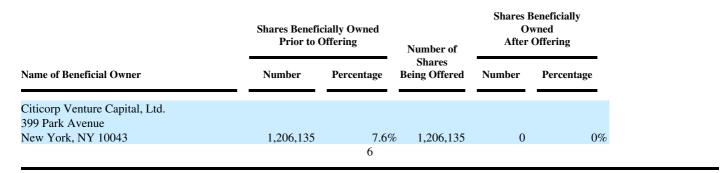
USE OF PROCEEDS

We will not receive any proceeds from the sale of shares by the selling stockholder.

5

SELLING STOCKHOLDER

The following table sets forth information as of June 10, 2003 regarding the beneficial ownership of our common stock by the selling stockholder. The percentages shown are based on 15,844,464 shares of common stock outstanding as of June 10, 2003 and after the offering. Shares of common stock which a person has the right to acquire upon the exercise of stock options and warrants held by that holder that are exercisable within 60 days are deemed outstanding for the purpose of computing the percentage ownership of that person, but are not deemed outstanding for computing the percentage ownership of any other person. Unless otherwise noted, we believe that the selling stockholder has sole voting and investment power with respect to all shares of common stock beneficially owned by it.



DESCRIPTION OF SECURITIES

General

Our authorized capital stock consists of 50,000,000 shares of common stock, par value \$.001 per share, 6,000,000 shares of Class D common stock, par value \$.001 per share, and 250,000 shares of preferred stock, par value \$.01 per share. Upon completion of this offering, we will have outstanding 15,844,464 shares of common stock, no shares of Class D common stock and no shares of preferred stock. As of June 11, 2003, there were approximately 39 registered holders of common stock.

Common Stock

The holders of common stock are generally entitled to one vote for each share held on all matters voted upon by stockholders. Subject to the rights of any outstanding shares of preferred stock, the holders of the common stock are entitled to dividends that may be declared at the discretion of our board of directors out of legally available funds. If we liquidate, dissolve or windup, holders of common stock are entitled to share ratably in our net assets after payment or provision for all liabilities, subject to the prior rights of any preferred stock then outstanding. The

holders of common stock have no preemptive rights to purchase our securities. Shares of common stock are not subject to any redemption provisions and are not convertible into any of our other securities.

Our directors are elected by the holders of common stock pursuant to cumulative voting, which gives a stockholder the right to cast as many votes in the aggregate as that stockholder is entitled to vote under our certificate of incorporation, multiplied by the number of directors to be elected. A stockholder may cast all votes for one director candidate or distribute those votes among two or more director candidates. Therefore, cumulative voting may make it more difficult to change the composition of the board of directors and may discourage or make more difficult an attempt by a person or group to obtain control of the company. Any director, or the entire board of directors, may be removed by the stockholders at any time, with or without cause, by the affirmative vote of the holders of a majority of the outstanding shares of common stock entitled to vote for the election of directors, except that, if less than the entire board is to be removed, no director may be removed without cause if the votes cast against his removal would be sufficient to elect him when cumulatively voted at an election of the entire board of directors.

Class D Common Stock

The rights of holders of Class D common stock are identical to those of holders of common stock, except that the holders of Class D shares are not entitled to vote in the election of directors. On all matters voted upon by the stockholders, the holders of common stock and the Class D common stock vote together as a class, except as provided by law. The transfer of shares of Class D common stock is restricted, in the case of an individual holder, to members of the holder's family, to trusts for that holder's benefit or the benefit of that holder's family, estate and donees; in the case of trustees, to the grantor or a designated beneficiary of that trust or their guardians or custodians, or to persons who are permitted transferees of the grantor of those beneficiaries; in the case of a corporation or partnership which is an original holder of shares, to its stockholders or partners or permitted transferees of those stockholders or partners; in the case of any other corporation or partnership, to persons who previously contributed shares to that corporation or partnership or who are permitted transferees of those persons; and, in the case of an estate of a deceased or bankruptcy or insolvent holder, to any persons, trusts, corporations or partnerships which are

7

otherwise entitled to own shares of Class D common stock. A share of Class D common stock may be converted into a share of common stock at any time at the sole option of the holder. Once a share of Class D common stock has been converted into common stock, it will no longer be subject to any restrictions on transfer.

Preferred Stock

Our certificate of incorporation authorizes the issuance of up to 250,000 shares of preferred stock from time to time by the board of directors in one or more series as consideration for the stock or assets of another corporation or in connection with our merger with or into another corporation. The board of directors may adopt resolutions to issue the shares, to fix the number of shares and to change the number of shares constituting any series of preferred stock and to provide for or change the voting powers, designations, preferences and relative, participating, optional or other special rights, qualifications, limitations or restrictions of that preferred stock, including dividend rights (including whether dividends are cumulative), dividend rates, terms of redemption (including sinking fund provisions), redemption prices, conversion rights and liquidation preferences of the shares constituting any series of preferred stock, in each case without any further action or vote by the stockholders. We have no current plans to issue any series of preferred stock. One of the effects of undesignated preferred stock may be to enable our board of directors to prevent or delay a change in control.

Limitation on Directors' Liabilities

Our certificate of incorporation provides that, as permitted by Delaware law, our directors are not liable to us or our stockholders for monetary damages for breach of fiduciary duty, except for liability in connection with a breach of duty of loyalty, for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, or dividend payments or stock repurchases illegal under Delaware law or any transaction in which a director has derived an improper personal benefit. Further, under the provisions of our bylaws, as amended, each person who is or was a party to or is threatened to be made a party of any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative by reason of the fact that he or she is or was a director, officer, employee or agent of us or is or was serving at our request as a director, officer, employee or agent of another company or other entity shall be indemnified by us against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with such action, suit or proceeding if he or she acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceedings, had no reasonable cause to believe his or her conduct was unlawful. Notwithstanding the foregoing, no indemnification shall be made in respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless and only to the extent that the Court of Chancery or the court in which such action was brought determines upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is

fairly and reasonably entitled to indemnity for the expenses which such court deems proper.

The termination of any action, suit or proceedings by judgment, order, settlement, conviction, or upon a plea of nolo contendre or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which he or she reasonably believed to be in, or not opposed to, our best interests and, with respect to any

8

criminal action or proceeding, had reasonable cause to believe that his or her conduct was unlawful.

In addition, to the extent that such a person is successful on the merits or otherwise in defense of any action, suit, or proceeding brought against him or her by reason of the fact that he or she is our director, officer, employee or agent, he or she shall be indemnified against expenses, including attorneys' fees actually and reasonably incurred in connection therewith.

Our bylaws, as amended, provide that expenses incurred by an officer, director, employee or agent in defending a civil or criminal action, suit or proceeding may be paid by us in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of the director, officer, employee or agent to repay such amount if it shall ultimately be determined that he or she is not entitled to be indemnified by us.

Any indemnification under the provisions summarized above (unless ordered by a court) shall be made by us only as authorized in each specific case upon a determination that indemnification of such person is proper under the circumstances because he or she has met the applicable standard of conduct set forth in the applicable provision. Such determination shall be made by any of (1) a majority vote of our directors who are not parties to the action, suit or proceeding (even though less than a quorum), (2) if there are no such directors, or if such directors so direct, by independent legal counsel in a written opinion, or (3) by the stockholders.

We maintain director and officer insurance with respect to those claims described above in customary amounts.

The foregoing summaries are necessarily subject to the complete text of the relevant statute or document.

Other Matters

Our common stock has traded on the New York Stock Exchange under the symbol TGI since October 25, 1996.

The transfer agent and registrar for our common stock is National City Bank.

9

UNDERWRITING

We and the selling stockholder have entered into an underwriting agreement with Deutsche Bank Securities Inc. with respect to the shares being offered by this prospectus. Subject to certain conditions, the selling stockholder has agreed to sell to Deutsche Bank Securities Inc. and Deutsche Bank Securities Inc. has agreed to purchase from the selling stockholder, the 1,206,135 shares of common stock offered hereby.

The underwriting agreement provides that the obligations of the underwriter to purchase the shares of common stock offered hereby are subject to certain conditions precedent and that the underwriter will purchase all of the shares of common stock offered by this prospectus, if any of these shares are purchased.

The underwriter proposes to offer the shares of common stock at the public offering price on the cover page of this prospectus. In connection with the sale of the shares of common stock offered hereby, the underwriter will be deemed to have received compensation in the form of underwriting discounts. The underwriter will not receive compensation in excess of 4% of the proceeds of this offering.

The selling stockholder has agreed to pay the underwriter the following discounts and commissions:

	Fee per Share		Total Fees	
Discounts and commissions paid by the selling stockholder	\$	1.20	\$	1,447,362

In addition, we estimate that the total expenses of this offering, excluding underwriting discounts and commissions, will be approximately \$115,000, which expenses will be paid by us pursuant to the terms of a registration rights agreement with the selling stockholder.

We and the selling stockholder have agreed to indemnify the underwriter against some specified types of liabilities, including liabilities under the Securities Act, and to contribute to payments the underwriter may be required to make in respect of any of these liabilities.

The selling stockholder has agreed, subject to specified limited exceptions, not to offer, sell, contract to sell or otherwise dispose of, or enter into any transaction that is designed to, or could be expected to, result in the disposition of any shares of our common stock or other securities convertible into or exchangeable or exercisable for shares of our common stock or derivatives of our common stock owned by it prior to this offering or common stock issuable upon exercise of options held by it for a period of 30 days after the effective date of the registration statement of which this prospectus is a part without the prior written consent of the underwriter. This consent may be given at any time without public notice.

Deutsche Bank Securities Inc. has advised us that it may make short sales of our common stock in connection with this offering, resulting in the sale by Deutsche Bank Securities Inc. of a greater number of shares than it is required to purchase pursuant to the underwriting agreement. A short position resulting from those short sales will be deemed a "covered" short position to the extent that it did not exceed the amount of the underwriter's over-allotment option. A short position resulting from those short sales will be deemed a "naked" short position to the extent that it exceeds the amount of the underwriter's over-allotment option. A "naked" short position is more likely to be created if Deutsche Bank Securities Inc. is concerned that there may be downward pressure on the trading price of the common stock in the open market that could adversely affect investors who purchase shares in this offering. Deutsche Bank Securities Inc. may reduce or close out its covered short position by purchasing shares in the open market. Similar to the other stabilizing transactions described below, open market purchases made to cover all or a portion of its short position

may have the effect of preventing or retarding a decline in the market price of our common stock following this offering. As a result, our common stock may trade at a price that is higher than the price that otherwise might prevail in the open market.

Deutsche Bank Securities Inc. has advised us that, pursuant to Regulation M under the Securities Act of 1933, as amended, it may engage in transactions, including stabilizing bids, that may have the effect of stabilizing or maintaining the market price of the shares of our common stock at a level above that which might otherwise prevail in the open market. A "stabilizing bid" is a bid for or the purchase of shares of common stock on behalf of Deutsche Bank Securities Inc. for the purpose of fixing or maintaining the price of common stock. Deutsche Bank Securities Inc. has advised us that stabilizing bids and open market purchases may be effected on the New York Stock Exchange or otherwise and, if commenced, may be discontinued at any time.

From time to time, the underwriter and its affiliates have provided financial advisory, underwriting, lending or other similar services for us, for which we have paid customary fees, and may provide such services to us in the future.

11

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Ballard Spahr Andrews & Ingersoll, LLP, Philadelphia, Pennsylvania. Some legal matters related to this offering will be passed upon for the underwriters by Cahill Gordon & Reindel LLP, New York, New York. Some legal matters related to this offering will be passed upon for the selling stockholder by Kirkland & Ellis.

EXPERTS

Ernst & Young LLP, independent auditors, have audited our consolidated financial statements and schedule included in our Annual Report on Form 10-K for the year ended March 31, 2003, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements and schedule are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement on Form S-3 that we have filed with the SEC covering the common stock offered by the selling stockholder in this offering. This prospectus does not contain all the information set forth in the registration statement and you should refer to that registration statement with its exhibits for further information. Statements contained in this prospectus as to the contents of any contract or other document are not complete and you should review those documents filed as an exhibit to, or incorporated by reference into, the registration statement.

We file annual, quarterly and special reports, proxy statements and other information with the SEC. You may review any of this information and the registration statement at the SEC's public reference room at Judiciary Plaza, 450 Fifth Street, N.W., Washington, DC 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference room. The SEC maintains an internet site at http://www.sec.gov that contains information about us. You can also inspect our SEC filings at the offices of the New York Stock Exchange, 20 Broad Street, New York, New York 10005.

INCORPORATION OF INFORMATION WE FILE WITH THE SEC

The SEC allows us to "incorporate by reference" the information we file with it, which means that we can disclose important information to you by referring to those documents. The information incorporated by reference is an important part of this prospectus, and the information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference our Annual Report on Form 10-K for the fiscal year ended March 31, 2003 and any future filings made with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 until this offering is completed.

12

You may request a copy of these filings, at no cost, by writing to or telephoning us at the address below. We will not, however, provide copies of the exhibits to these filings, unless we specifically incorporate by reference the exhibits in this prospectus.

Triumph Group, Inc. 1550 Liberty Ridge Suite 100 Wayne, Pennsylvania (610) 251-1000 Attention: Corporate Secretary

13

You should rely only on the information contained in this prospectus. We have not authorized anyone to provide information different from that contained in this prospectus. The selling stockholder is offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of our common stock.

TABLE OF CONTENTS

Page

Page

-
1
3
5
5
6
7
10
12
12
12
12

1,206,135 Shares

Common Stock

Deutsche Bank Securities

Prospectus

June 23, 2003

QuickLinks

PROSPECTUS SUMMARY Triumph Group, Inc. Recent Developments The Offering RISK FACTORS Risks Related to This Offering SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS **USE OF PROCEEDS** SELLING STOCKHOLDER **DESCRIPTION OF SECURITIES UNDERWRITING** LEGAL MATTERS EXPERTS WHERE YOU CAN FIND MORE INFORMATION **INCORPORATION OF INFORMATION WE FILE WITH THE SEC** TABLE OF CONTENTS