

ARCH CAPITAL GROUP LTD  
 Form 424B3  
 July 18, 2003

FILED PURSUANT TO RULE 424(b)  
 FILE NUMBER 333-98971

ARCH CAPITAL GROUP LTD.

PROSPECTUS SUPPLEMENT DATED JULY 15, 2003  
 TO  
 PROSPECTUS DATED AUGUST 30, 2002

This prospectus supplement supplements our prospectus dated August 30, 2002 relating to the reoffers and resales of our common shares, par value \$.01 per share, issued or issuable under our 2002 Long Term Incentive and Share Award Plan (the "PLAN"). This prospectus supplement sets forth a list of the current selling Shareholders and updates the number of common shares available to be resold by each selling shareholder under the Plan. This prospectus supplement should be read in conjunction with the prospectus and this prospectus supplement is qualified by reference to the prospectus except to the extent that the information contained herein supersedes the information contained in the prospectus.

SELLING SHAREHOLDERS

The following table sets forth certain information concerning the selling shareholders as of July 15, 2003. Except as disclosed below, none of the selling shareholders has, or within the past three years has had, any position, office or other material relationship with us:

| NAME                 | POSITION WITH THE COMPANY  | SHARES OWNED PRIOR TO OFFERING | MAXIMUM NUMBER OF SHARES OWNED AND/OPTIONS WHICH MAY BE OFFERED HEREBY (1) |
|----------------------|--|--------------------------------|--|
| Robert Clements      | Chairman   | 1,770,931 (2)                  | 7,282 (2)  |
| Peter A. Appel       | President, Chief Executive Officer and Director                    | 886,015 (3)                    | 8,834 (3)  |
| Wolfe H. Bragin      | Director   | 1,800 (4)                      | 1,800 (4)  |
| John L. Bunce, Jr.   | Director   | 14,356,832 (5)                 | 2,574 (5)  |
| Sean Carney          | Director   | 441 (6)                        | 441 (6)  |
| Dwight R. Evans      | President of Arch Reinsurance Ltd.                                 | 202,397 (7)                    | 29,770 (7)   |
| Constantine Iordanou | Director   | 809,491 (8)                    | 17,668 (8)   |
| Ralph F. Jones, III  | President and Chief Executive Officer of Arch Insurance Group Inc. | 150,100 (9)                    | 150,000 (9)  |
| Kewsong Lee          | Director   | 22,916,115 (10)                | 2,574 (10)   |
| James J. Meenaghan   | Director   | 24,187 (11)                    | 2,574 (11)   |
| David R. Tunnell     | Director   | 14,356,832 (12)                | 3,151 (12)   |
| Robert F. Works      | Director   | 28,046 (13)                    | 2,574 (13)   |
| John D. Vollaro      | Executive Vice President, Chief Financial Officer and Treasurer    | 142,350 (14)                   | 7,350 (14)   |

Edgar Filing: ARCH CAPITAL GROUP LTD - Form 424B3

| NAME              | POSITION WITH THE COMPANY   | SHARES OWNED PRIOR TO OFFERING | MAXIMUM NUMBER OF SHARES OWNED AND/OR SUBJECT TO OUTSTANDING OPTIONS WHICH MAY OFFERED HEREBY (1) |
|-------------------|---|--------------------------------|---|
| John F. Rathgeber | Managing Director and Chief Operating Officer of Arch Reinsurance Company | 82,698 (15)                    | 3,698 (15)  |
| Louis T. Petrillo | President and General Counsel of Arch Capital Services Inc.               | 95,800 (16)                    | 1,943 (16)  |

(1) Represents the number of common shares issued or issuable under the Plan to each selling shareholder. Does not constitute a commitment to sell any or all of the stated number of common shares. The number of shares offered shall be determined from time to time by each selling shareholder at his discretion.

(2) Amounts include (a) 1,139,083 common shares, 32,198 common shares issuable upon exercise of class B warrants and 107,125 common shares issuable upon exercise of currently exercisable options owned directly by Mr. Clements, (b) 263,046 common shares and 18,698 common shares issuable upon exercise of class B warrants owned directly by the spouse of Mr. Clements, (c) 48,512 common shares and 56,302 common shares issuable upon exercise of class B warrants owned by a grantor retained annuity trust established for the benefit of the children of Mr. Clements and (d) 2,725 common shares acquired from the exercise of class A warrants and 103,242 series A convertible preference shares ("preference shares") acquired directly by Sound View Partners, L.P. ("Sound View") as part of the November 2001 capital infusion. Sound View is a limited partnership, the general partners of which are Mr. Clements and his spouse. Taracay Investors ("Taracay") owns approximately 50% of Sound View. Mr. Clements disclaims beneficial ownership of (a) all securities owned directly by his spouse, (b) approximately 97% of the securities owned directly by Taracay, which represents the ownership percentage of Taracay by Taracay partners other than Mr. Clements, and (c) approximately 98% of the securities directly owned by Sound View, which represents the ownership percentage of Sound View by Sound View partners other than Mr. Clements, but excluding that portion of Sound View held by Taracay to the extent of Mr. Clements' ownership of Taracay as stated herein.

(3) Amounts include (a) 146,187 common shares owned directly by Mr. Appel (including 6,625 restricted shares which are subject to vesting), (b) 688,207 common shares issuable upon exercise of currently exercisable stock options and (c) 51,621 common shares issuable upon conversion of preference shares.

## Edgar Filing: ARCH CAPITAL GROUP LTD - Form 424B3

- (4) Amounts include 1,800 common shares issuable upon exercise of stock options (1,700 of such shares are issuable upon exercise of stock options which are subject to vesting).
- (5) Amounts include securities held by or for the benefit of HFCP IV (Bermuda), L.P. ("HFCP IV Bermuda"), H&F International Partners IV-A (Bermuda), L.P. ("HFIP IV-A Bermuda"), H&F International Partners IV-B (Bermuda), L.P. ("HFIP IV-B Bermuda") and H&F Executive Fund IV (Bermuda), L.P. ("HFEF Bermuda," and together with HFCP IV Bermuda, HFIP IV-A Bermuda and HFIP IV-B Bermuda, the "H&F Funds"). H&F Investors IV (Bermuda), L.P. ("HFI IV Bermuda") is the sole general partner of the H&F Funds. H&F Corporate Investors IV (Bermuda) Ltd. ("HFCI Bermuda") is the sole general partner of HFI IV Bermuda. HFI IV Bermuda may be deemed to control the H&F Funds. Mr. Bunce is a member of an investment committee of HFCI Bermuda which has investment discretion over the securities held by the

2

H&F Funds. Mr. Bunce is a 9.9% shareholder of HFCI Bermuda. All shares indicated as owned by Mr. Bunce are included because he is a member of the board of directors of ACGL and is affiliated with HFCI Bermuda. Mr. Bunce may be deemed to have an indirect pecuniary interest (within the meaning of Rule 16a-1 under the Exchange Act) in an indeterminate portion of the shares beneficially owned by the H&F Funds. Mr. Bunce disclaims beneficial ownership of all shares owned by the H&F Funds, except to the extent of his indirect pecuniary interest in the issuer held through the H&F Funds. Based on a Form 4 dated March 4, 2003 filed with the Securities Exchange Commission ("SEC") by Mr. Bunce.

- (6) Amounts include (a) 141 common shares owned directly by Mr. Carney and (b) 300 common shares issuable upon exercise of stock options (200 of such shares are issuable upon exercise of stock options which are subject to vesting).
- (7) Amounts include (a) 56,749 common shares owned directly by Mr. Evans (including 53,578 restricted shares which are subject to vesting), (b) 125,000 common shares issuable upon exercise of stock options (50,000 of such shares are issuable upon exercise of stock options which are subject to vesting) and (c) 20,648 common shares issuable upon conversion of preference shares.
- (8) Amounts include (a) 384,491 common shares owned directly by Mr. Iordanou (including 325,000 restricted shares which are subject to vesting and 4,200 common shares owned directly by Mr. Iordanou's children) and (b) 425,000 common shares issuable upon exercise of stock options (141,667 of such shares are issuable upon exercise of stock options which are subject to vesting). In addition, Mr. Iordanou holds 17,668 restricted common share units (13,251 of such units are subject to vesting) which will be settled in common shares of Arch Capital Group Ltd. upon termination of Mr. Iordanou's employment. Mr. Iordanou disclaims beneficial ownership of all shares owned by his children.
- (9) Amounts include (a) 50,100 common shares owned directly by Mr. Jones (including 50,000 restricted shares which are subject to vesting) and (b) 100,000 common shares issuable upon exercise of stock options which are subject to vesting.
- (10) Amounts include securities held by or for the benefit of Warburg Pincus (Bermuda) Private Equity VIII, L.P. ("WP VIII Bermuda"), Warburg Pincus (Bermuda) International Partners, L.P. ("WPIP Bermuda"), Warburg Pincus

## Edgar Filing: ARCH CAPITAL GROUP LTD - Form 424B3

Netherlands International Partners I, C.V. ("WPIP Netherlands I") and Warburg Pincus Netherlands International Partners II, C.V. ("WPIP Netherlands II"). Warburg Pincus (Bermuda) Private Equity Ltd. ("WP VIII Bermuda Ltd.") is the sole general partner of WP VIII Bermuda. Warburg Pincus (Bermuda) International Ltd. ("WPIP Bermuda Ltd.") is the sole general partner of WPIP Bermuda. Warburg, Pincus & Co. ("WP") is the sole general partner of WPIP Netherlands I and WPIP Netherlands II. WP VIII Bermuda, WPIP Bermuda, WPIP Netherlands I and WPIP Netherlands II are managed by Warburg Pincus LLC ("WP LLC"). The foregoing is based on a Schedule 13D dated December 18, 2002 and filed with the SEC by these entities. Mr. Lee is a general partner of WP, a managing director and member of WP LLC and a beneficial owner of certain shares of capital stock of WP VIII Bermuda Ltd. and WPIP Bermuda Ltd. All shares indicated as owned by Mr. Lee are included because he is a member of our Board and is affiliated with these Warburg Pincus entities. Mr. Lee may be deemed to have an indirect pecuniary interest (within the meaning of Rule 16a-1 under the Exchange Act) in an indeterminate portion of the shares owned by WP VIII Bermuda, WPIP Bermuda, WPIP Netherlands I and WPIP Netherlands II. Mr. Lee disclaims beneficial ownership of all shares owned by these Warburg Pincus entities.

3

- (11) Amounts include (a) 5,887 common shares owned directly by Mr. Meenaghan and (b) 18,300 common shares issuable upon exercise of stock options (1,500 of such shares are issuable upon exercise of stock options which are subject to vesting).
- (12) Amounts include securities held by or for the benefit of HFCEP IV (Bermuda), L.P. ("HFCEP IV Bermuda"), H&F International Partners IV-A (Bermuda), L.P. ("HFIP IV-A Bermuda"), H&F International Partners IV-B (Bermuda), L.P. ("HFIP IV-B Bermuda") and H&F Executive Fund IV (Bermuda), L.P. ("HFEEF Bermuda," and together with HFCEP IV Bermuda, HFIP IV-A Bermuda and HFIP IV-B Bermuda, the "H&F Funds"). H&F Investors IV (Bermuda), L.P. ("HFI IV Bermuda") is the sole general partner of the H&F Funds. H&F Corporate Investors IV (Bermuda) Ltd. ("HFCEI Bermuda") is the sole general partner of HFI IV Bermuda. HFI IV Bermuda may be deemed to control the H&F Funds. The foregoing is based on a Schedule 13D and a Form 4 dated March 4, 2003 and December 18, 2002, respectively, and filed with the SEC. Mr. Tunnell is a member of an investment committee of HFCEI Bermuda which has investment discretion over the securities held by the H&F Funds. Mr. Tunnell is a 5.45% shareholder of HFCEI Bermuda. All shares indicated as owned by Mr. Tunnell are included because he is a member of the board of directors of ACGL and is affiliated with HFCEI Bermuda. Mr. Tunnell may be deemed to have an indirect pecuniary interest (within the meaning of Rule 16a-1 under the Exchange Act) in an indeterminate portion of the shares beneficially owned by the H&F Funds. Mr. Tunnell disclaims beneficial ownership of all shares owned by the H&F Funds, except to the extent of his indirect pecuniary interest in the issuer held through the H&F Funds.
- (13) Amounts include (a) 6,746 common shares owned directly by Mr. Works and (b) 21,300 common shares issuable upon exercise of stock options (1,500 of such shares are issuable upon exercise of stock options which are subject to vesting).
- (14) Amounts include (a) 57,350 common shares owned directly by Mr. Vollaro (including 55,512 restricted shares which are subject to vesting) and (b) 85,000 common shares issuable upon exercise of stock options (28,333 of such shares are issuable upon exercise of stock options which are subject to vesting).

Edgar Filing: ARCH CAPITAL GROUP LTD - Form 424B3

- (15) Amounts include (a) 17,698 common shares owned directly by Mr. Rathgeber (including 12,773 restricted shares which are subject to vesting) and (b) 65,000 common shares issuable upon exercise of stock options (21,673 of such shares are issuable upon exercise of stock options which are subject to vesting).
- (16) Amounts include (a) 8,000 common shares owned directly by Mr. Petrillo (including 1,457 restricted shares which are subject to vesting) and (b) 87,800 common shares issuable upon exercise of stock options (13,337 of such shares are issuable upon exercise of stock options which are subject to vesting).

Information concerning the selling shareholders may change from time to time and will be set forth in future supplements. Accordingly, the identity of the selling shareholders may change and the number of shares of common shares offered hereby may increase or decrease. Full copies of the prospectus will be provided upon request.