

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

SCHEDULE 13G

**Under the Securities Exchange Act of 1934
(Amendment No. ___)***

A.O. Smith Corporation.

(Name of Issuer)

Common Stock
(Title of Class of Securities)

831865209
(CUSIP Number)

May 26, 2011
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
- Rule 13d-1(c)
- Rule 13d-1(d)

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

1	NAMES OF REPORTING PERSONS SENATOR INVESTMENT GROUP LP	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="radio"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION DELAWARE	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 1,939,400
	6	SHARED VOTING POWER 0
	7	SOLE DISPOSITIVE POWER 1,939,400
	8	SHARED DISPOSITIVE POWER 0
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,939,400	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="radio"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 5.00%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IA	

CUSIP No.

Item 1(a) Name of Issuer:

A.O. Smith Corporation

Item 1(b) Address of the Issuer's Principal Executive Offices:

11270 West Park Place
Milwaukee, WI 53224-9508

Item 2(a) Name of Person Filing

Senator Investment Group LP

Item 2(b) Address of Principal Business Office or, if None, Residence:

The principal office of Senator Investment Group LP is:

510 Madison Avenue
28th Floor
New York, NY 10022

Item 2(c) Citizenship:

Senator Investment Group LP is a Delaware limited partnership.

Item 2(d) Title of Class of Securities:

Common Stock

Item 2(e) CUSIP Number:

831865209

Item 3. If this statement is filed pursuant to Rule 13d-1(b), or 13d-2(b) or (c), check whether the person filing is a:

Not applicable.

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Item 4. Ownership:

- (a) Amount beneficially owned: 1,939,400
- (b) Percent of class: 5.00%
- (c) Number of shares as to which such person has:
 - (i) Sole power to vote or to direct the vote:
1,939,400
 - (ii) Shared power to vote or to direct the vote:
0
 - (iii) Sole power to dispose or to direct the disposition of:
1,939,400
 - (iv) Shared power to dispose or to direct the disposition of:
0

Senator Investment Group LP, a Delaware limited partnership, serves as investment manager to two Delaware limited partnership, four Cayman Islands limited partnerships, and a Cayman Islands company (collectively, the “Funds”), and as such, has investment discretion with respect to the Funds. Douglas Silverman, a United States citizen, and Alexander Klabin, a United States citizen, have control of a Delaware limited liability company that may be deemed to control Senator Investment Group LP.

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Item 5. Ownership of Five Percent or Less of a Class:

Not applicable.

Item 6. Ownership of More than Five Percent on Behalf of Another Person:

The partners and shareholders of the Funds have the right to participate in the receipt of dividends from, or proceeds from the sale of, the securities reported herein held by the Funds in accordance with their respective ownership interests in the Funds.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company:

Not applicable.

Item 8. Identification and Classification of Members of the Group:

Not applicable.

Item 9. Notice of Dissolution of Group:

Not applicable.

Item 10. Certification:

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having such purpose or effect.

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SIGNATURE

After reasonable inquiry and to the best knowledge and belief of the undersigned, the undersigned certifies that the information set forth in this Statement is true, complete and correct.

Dated as of June 2, 2011

SENATOR INVESTMENT GROUP LP

By: Edward Larmann
Chief Operating Officer

By: /s/ Edward Larmann