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**FORM 6 - - K**  
**SECURITIES AND EXCHANGE COMMISSION**  
Washington, DC 20549

**Report of Foreign Private Issuer**  
**Pursuant to Rule 13a - 16 or 15d - 16 under**  
**the Securities Exchange Act of 1934**

For the month of December 2010

Commission File Number 001-33159

**AERCAP HOLDINGS N.V.**  
(Translation of Registrant's Name into English)

**Stationsplein 965, 1117 CE Schiphol Airport, The Netherlands, +31-20-655-9655**  
(Address of Principal Executive Office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.

Form 20-F

Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

Note: Regulation S-T Rule 101(b)(1) only permits the submission in paper of a Form 6-K if submitted solely to provide an attached annual report to security holders.

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7) :

Indicate by check mark whether the registrant by furnishing the information contained in this form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Act of 1934.

Yes

No

If "Yes" is marked, indicated below the file number assigned to the registrant in connection with Rule 12g3-2(b): 82 — N/A

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**Other Events**

On December 8, 2010, AerCap Holdings N.V. announced that its Board of Directors on December 7 approved a share repurchase program.

This form 6-K is incorporated by reference into the Company's form F-3 registration statement file no. 333-155194 and form S-8 registration statements file nos. 333-154416 and 333-165839, and related prospectuses, as such registration statements and prospectuses may be amended from time to time.

**Exhibits**

99.1 AerCap Holdings N.V. Press Release

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SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

AERCAP HOLDINGS N.V.

By: /s/ Klaus Heinemann

Name: Klaus Heinemann  
Title: Authorized Signatory

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Date: December 8, 2010

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**EXHIBIT INDEX**

99.1 AerCap Holdings N.V. Press Release.

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PRESS RELEASE

**AerCap to Put in Place Share Repurchase Program**

Amsterdam, The Netherlands; December 8, 2010 - AerCap Holdings N.V. ("AerCap," NYSE: AER) today announced that its Board of Directors on December 7 approved a share repurchase program. The repurchase program is limited by restrictive covenants in a debt facility expiring in 2015 to \$25 million share repurchases annually and \$50 million in aggregate.

Repurchases under the program may be made through open market purchases or privately negotiated transactions in accordance with applicable U.S. federal securities laws, including Rule 10b-18. The timing of repurchases and the exact number of shares of common stock to be purchased will be determined by the Company's management, in its discretion, and will depend upon market conditions and other factors. The program will be funded using the Company's cash on hand and cash generated from operations. The program may be suspended or discontinued at any time.

**About AerCap**

AerCap is the world's leading independent aircraft leasing company. AerCap also provides engine leasing, aircraft management services, aircraft maintenance, repair and overhaul services and aircraft disassemblies. AerCap has a fleet of 324 aircraft and 83 commercial engines that were either owned, on order, under contract or letter of intent, or managed. AerCap is headquartered in The Netherlands and has offices in Ireland, the United States, China, Singapore and the United Kingdom.

**This press release may contain forward-looking statements that involve risks and uncertainties. In most cases, you can identify forward-looking statements by terminology such as "may", "should", "expects", "plans", "anticipates", "believes", "estimates", "predicts", "potential" or "continue" or the negative of such terms or similar terminology. Such forward-looking statements are not guarantees of future performance and involve significant assumptions, risks and uncertainties, and actual results may differ materially from those in the forward-looking statements.**

**For Media:**

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