



Australian Government  
Civil Aviation Safety Authority

# Supplemental Type Certificate

**Number: SVA 519**

**This certificate issued to:** Skytraders Pty Ltd  
PO Box 1566,  
Tullamarine, VIC 3043

**certifies that the change in the type design for the following product when installed in accordance with the limitations and conditions specified herein meets the airworthiness requirements of regulation 21.101 of the CASR 1998.**

**Original Product:** Type Certificate Number: VA512  
Make: EADS Construcciones Aeronauticas, S.A.  
Model: C-212-EE  
Serial Numbers: 474, 475.

**Description of Type Design Change:** Installation of skis for operations in retractable ski or plate ski configuration at maximum take-off weights up to 8470kg and maximum landing weights up to 7820kg in accordance with Aeronautical Engineers Australia MDL9268.030/1 Issue 17 or later CASA approved revision.

## **Limitations and Conditions:**

The conditions and limitations specified in the Type Certificate Data Sheet modify or supersede those conditions and limitations specified in CASA Type Certificate VA512. Where no condition or limitation is specified, the original reference data sheet conditions and limitations apply.

Prior to incorporating this design change, the installer shall establish that the interrelationship between this change and any other modifications incorporated into the aircraft will not adversely affect the airworthiness of the modified aircraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission. This certificate and the supporting data which is the basis for approval shall remain in effect until suspended, cancelled or a termination date is otherwise established by the Civil Aviation Safety Authority.

Date of application: 4 September 2008      Date reissued: 18 December 2012  
Date of issue: 1 September 2009

**This certificate is issued pursuant to Regulation 21.113A of the Civil Aviation Safety Regulations.**

David Villiers

**Delegate of the Authority**

*This certificate issued pursuant to Part 21.113A of the Civil Aviation safety Regulations 1998*

*safe skies for all*

## Supplemental Type Certificate Data Sheet

This data sheet, which is part of Supplemental Type Certificate SVA 519, lists the conditions and limitations under which the subject aircraft, as modified by the described type design change, meets the airworthiness requirements of the Civil Aviation Safety Authority.

### Operating Categories

This STC approves the aircraft, as modified, to operate in the Restricted Category.

### Restricted Category - Operating Limitations

#### Maximum Weights:

Maximum Ramp Weight (MRW)	8,520kg
Maximum Take-off Weight (MTOW)	8,470kg
Maximum Landing Weight (MLW)	7,820kg
Maximum Zero Fuel Weight (MZFW)	7,500kg*

\* Maximum Zero Fuel Weight (MZFW) reduces to 7,100kg when the takeoff weight exceeds 8100kg.

Refer to the flight manual supplement FMS9268.343-02 for centre of gravity limitations with skis fitted.

#### Manoeuvring load factor limits:

Manoeuvring load factor limits with flaps retracted (3.0g to -1.2g) reduces to (2.5g to -1.0g) when operating at weights in excess of 7,700kg (16,976lb) and or zero fuel weights in excess of 7,100kg (15,650lb).

#### Airspeed Limitations

V<sub>mo</sub> – 180KIAS with skis fitted.

Other limitations apply as detailed in the CASA approved Flight Manual Supplement.

#### Fatigue Life Limitations

The fatigue life of the aircraft undercarriage is as detailed in Maintenance Manual Supplement MMS9268.074-01 issue 11 or later CASA approved revision.

- Required Equipment**
1. The CASA approved Airplane Flight Manual Supplement FMS9268.343-02.
  2. Other equipment may be required to meet applicable operational regulations.

- Placards**
1. The placards required in flight manual supplement FMS9268.343-02 must be installed in the appropriate location.



**Type Design Data**

1. Master Drawing List MDL9268.030/1 at issue 17 dated 18 December 2012 including later CASA approved revisions.
2. The CASA approved Airplane Flight Manual Supplement FMS9268.343-02 at issue 1 dated 21 August 2009 or later CASA approved revisions.
3. The Airworthiness Limitations and Inspections specified in Maintenance Manual Supplement MMS9268.074-01 issue 11 or later CASA approved revision, are mandatory. Component lives and inspection intervals provided in this document have been derived based upon operations on wheels and skis.

**Certification Basis**

The restricted category special purpose operation is per CASR 25.025(2)(k) for operations with skis and underwing tanks fitted. The design standard for the aircraft as modified, in the restricted category, will be as detailed in VA512, with the following exemptions, equivalent safety determinations and special conditions:

Exemptions

FAR Paragraph	Description
25.121(b) 25.121(c)	<p>Certification requirements specify minimum gradients for one-engine inoperative climb performance. The aircraft does not comply with these requirements at the increased Maximum Take Off Weight.</p> <p>CASA EX90/08 exempts Skytraders from meeting these requirements.</p>
25.471, 25.473, 25.479, 25.481, 25.483, 25.723, 25.725, 25.727	<p>Certification requirements include a 10fps drop test at Maximum Landing Weight. Exemption provided on the basis that for normal ski operations, the descent velocities are significantly less than 10fps, the loads can be monitored throughout each season, and heavy landings are easily recognisable to the pilot so appropriate inspections can take place prior to next flight.</p> <p>CASA EX90/08 exempts Skytraders from meeting these requirements</p>
25.903	<p>An exemption against this requirement is applied for operations in restricted category in accordance with Type Certificate Data Sheet VA512.</p>

### Equivalent Safety Determinations

FAR Paragraph	Description
25.105, 25.107, 25.109, 25.111, 25.113	There are non-compliances associated with the ski takeoff technique. The normal wheel takeoff techniques are not appropriate for operations on snow. A revised takeoff procedure is defined in FMS9268.343-02. This takeoff procedure provides an acceptable level of safety for restricted category operations on snow.

### Special Conditions

SC 1	<p>The aircraft need not comply with FAR 25.121(b) if it can be shown that the aircraft can either land straight ahead within the accelerate stop distance available (ASDA) or safely manoeuvre to a suitable landing site.</p> <p>Sufficient information must be provided in the flight manual supplement (FMS) to enable determination of a decision height and accelerate stop distance required (ASDR). The ASDR may include an extended stopway.</p> <p>The decision height is defined as the height below which the aircraft can land safely ahead. Above the decision height, the aircraft must be able to safely manoeuvre to a suitable landing site taking terrain and obstacle clearance into account.</p>
SC 2	<p>The aircraft need not comply with FAR 25.121(c) if the pilot has sufficient data to determine the en-route net flight path following an engine failure and can ensure obstacle and terrain clearance from the point of engine failure to a suitable landing site. In addition there must be sufficient data in the FMS to determine the minimum safe height at which the aircraft may transition from the takeoff to cruise configuration and still land safely at a suitable landing site following an engine failure.</p>
SC 3	<p>Takeoff and landing on skis may be conducted under day visual meteorological conditions only (VMC).</p> <p>Takeoff on wheels with skis retracted, at weights above 8100kg or with 2nd segment climb gradient of less than 2.4% may only be conducted under day visual meteorological conditions (VMC).</p>
SC 4	<p>Continual recording of in-service undercarriage landing load data for ski landings is required using an approved data logger system. The results are to be used to validate the landing load model and for the purpose of developing maintenance data.</p>
SC 5	<p>The retracting mechanism and supporting structure shall be designed for:</p> <ul style="list-style-type: none"><li>(i) the loads occurring in the flight conditions when the ski is in both the retracted and extended position; or</li><li>(ii) the combination of friction loads, inertia loads and air loads occurring during retraction and extension at any airspeed approved for this operation.</li></ul>



SC 6	<p>If the failure of the normal retraction/extension system would result in a hazard when landing, there shall be an emergency means for extending and retracting the skis in the event of:</p> <p>(i) any probable failure in the normal retraction/extension system; or</p> <p>(ii) the failure of any single source of hydraulic, electrical or equivalent energy supply.</p>
SC 7	<p>There shall be a ski position indicating system to inform the pilots that the skis are secured in the extended and retracted position. Sensors shall be located and coupled to the ski mechanical systems in a manner that minimises an erroneous indication of "down and locked" if the ski is not in a fully extended position, or of "up and locked" if the ski is not in the fully retracted position. The sensors shall be located where they are operated by the actual ski locking latch or device.</p>
SC 8	<p>The ski control shall be located forward of the throttles and shall be operable by either pilot when seated with seat belt and shoulder harness fastened.</p>
SC 9	<p>Each visual indicator required by paragraph (7) shall be marked so that the pilot can determine at any time when the skis are locked in either extreme position.</p>
SC 10	<p>Design features, or alternatively, operational procedures should be devised to minimise the possibility that, with a single ski frozen to the ground, a sudden application of power would cause the main landing gear strut to fail in torsion.</p>
SC 11	<p>At design take-off weight for the nose ski in any steerable position, the application of 1.33 times the full steering torque combined with a vertical reaction equal to 1.33 times the maximum static reaction on the nose ski must be assumed.</p>

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