



AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8981	
Aircraft Registration	ZU-YJK	Date of Accident	20 November 2011		Time of Accident	0920Z
Type of Aircraft	Vans RV-7 A		Type of Operation		Private	
Pilot-in-command Licence Type		Private	Age	70	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	111.0		Hours on Type	63.6
Last point of departure		Brits Aerodrome (FABS), North West Province				
Next point of intended landing		Brits Aerodrome (FABS), North West Province				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
3 Berge Caravan Park, Brits area (GPS co-ordinates: S25°34'59" E022°45'40") at an elevation of 3 900 f t						
Meteorological Information		Wind speed 6 kt, wind direction 040M, visibility 1 0 km, temperature 23°C, cloud cover scattered at 3 000 ft				
Number of people on board	1 + 0	No. of people injured	0	No. of people killed	1	
Synopsis						
<p>According to available information, the pilot had flown some aerobatics the previous day and slept the night of 19 November 2012 in his motor vehicle in his hangar at Brits aerodrome. The next morning he went flying again.</p> <p>As he approached FABS with the intention to land, he broadcasted over the radio that he could not see his instrumentation and was experiencing blurred vision. He made several attempts to land on Runway 02 and was assisted by other pilots who were in radio contact with him, but due to his impaired condition the aircraft was too fast each time to land.</p> <p>While executing a left-hand circuit for Runway 02, which was towards the high ground to the west of the aerodrome, the aircraft collided with mountainous terrain.</p> <p>Several people at the Drie Berge Caravan Park witnessed the accident after the aircraft flew over them and then turned left and impacted with high ground.</p> <p>The pilot did not survive the sequence of the accident and the aircraft was destroyed.</p>						
Probable Cause						
<p>Failure to maintain clearance from rising terrain during an attempt to land at FABS</p> <p>Impaired vision by the pilot during flight resulted in failure to maintain clearance from rising terrain during an attempt to land at FABS</p>						
IARC Date				Release Date		



AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : J Klazar
Manufacturer : Vans Aircraft INC
Model : RV-7 A
Nationality : South African
Registration Marks : ZU-YJK
Place : Drie Berge Caravan Park, Brits area
Date : 20 November 2011
Time : 0920Z

All times given in this report are Co-ordinated Universal Time (UTC) and will be denoted by (Z). South African Standard Time is UTC plus 2 hours.

Purpose of the Investigation:

*In terms of Regulation 12.03.1 of the Civil Aviation Regulations (1997) this report was compiled in the interests of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and **not to establish legal liability.***

Disclaimer:

This report is produced without prejudice to the rights of the CAA, which are reserved.

1. FACTUAL INFORMATION

1.1 History of Flight

- 1.1.1 On 20 November 2011, an RV-7 aircraft, registration ZU-YJK, which was operated and piloted by the owner, took off from Brits aerodrome (FABS) on a private flight with the intention to land back at Brits aerodrome. The flight was being conducted under visual meteorological conditions (VMC).
- 1.1.2 At approximately 0835Z the pilot returned to Brits aerodrome and communicated to traffic in the vicinity of Brits aerodrome that he was experiencing difficulty seeing the runway due to blurred vision.
- 1.1.3 He flew approximately five approaches in an attempt to land on Runway 02 at FABS. According to several other pilots who were assisting him via radio, his speed was too high for landing and he only went down to approximately 50–60 ft above the runway before he applied power to go around each time. During the last two approaches the pilot reported that he had a blurred vision and could not see his instruments. He also reported that the runway appeared as two stripes.
- 1.1.4 During each approach the pilot performed a go-around, and turned out right to fly a right-hand downwind for Runway 02. On his last go-around, the pilot opted to turn out left and fly a left-hand circuit for Runway 02. The turn left was towards high ground to the west of Runway 02.

- 1.1.5 During the left-hand circuit radio communication was lost with the aircraft.
- 1.1.6 As no radio contact could be established with the pilot, traffic in the Brits area started to search for the aircraft. The wreckage of the aircraft was located where it impacted with high ground to the west of the aerodrome.
- 1.1.7 Several people at the Drie Berge Caravan Park witnessed the accident. According to them the aircraft flew overhead the caravan park after which it entered into a left turn and impacted with the high ground.

1.2 Injuries to Persons

Injuries	Pilot	Crew	Pass.	Other
Fatal	1	-	-	-
Serious	-	-	-	-
Minor	-	-	-	-
None	-	-	-	-

1.3 Damage to Aircraft

- 1.3.1 The aircraft was destroyed during the impact sequence.



Figure 1 The aircraft wreckage

1.4 Other Damage

1.4.1 Minor damage was caused to the surrounding vegetation.

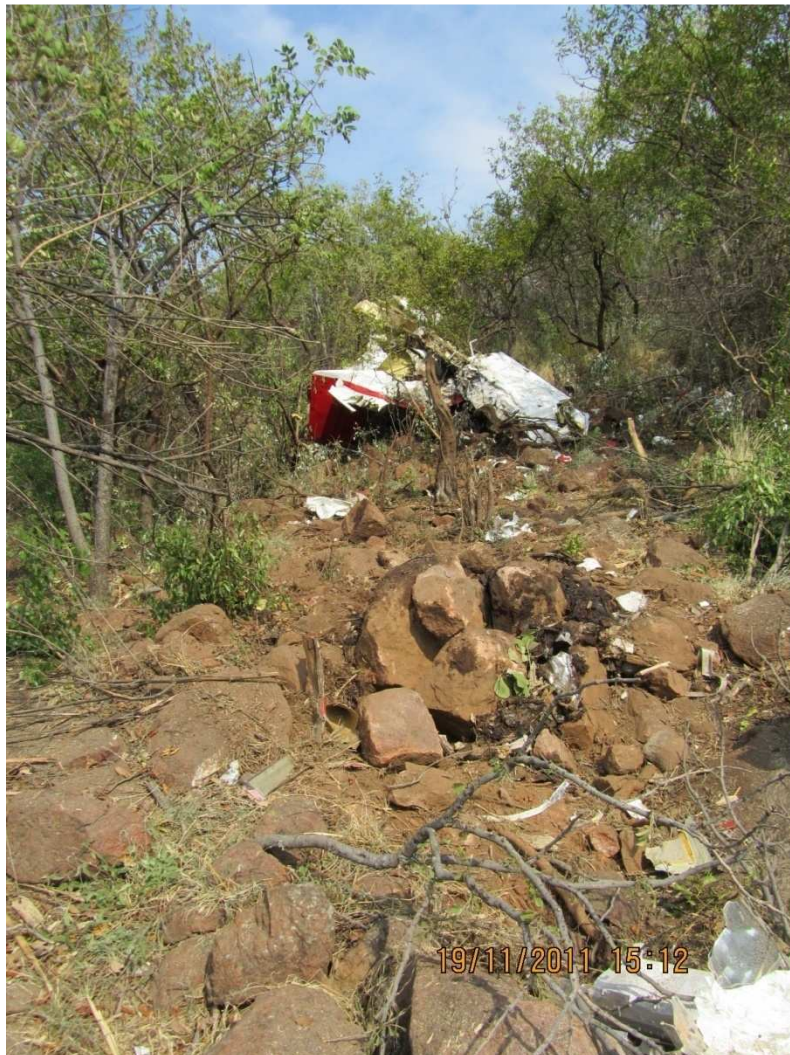


Figure 2 Minor damage to surrounding vegetation

1.5 Personnel Information

Nationality	South African	Gender	Male	Age	70
Licence Number	0272269192	Licence Type	Private Pilot		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	None				
Medical Expiry Date	30 April 2012				
Restrictions	Corrective lenses and hypertension protocol				
Previous Accidents	None				

Flying Experience:

Total Hours	111.00
Total Past 90 Days	13.0
Total on Type Past 90 Days	13.0
Total on Type	63.6

- 1.5.1 All hours referred to in this report are approximate hours as the last entry in the pilot's logbook was made on 17 November 2011, which was four days before the accident flight. **(See Appendix A.)**

1.6 Aircraft Information

Airframe:

Type	RV-7 A	
Serial Number	72606	
Manufacturer	Vans Aircraft INC	
Year of Manufacture	2009	
Total Airframe Hours (At time of Accident)	±74.8	
Last Annual Inspection (Date & Hours)	25 August 2010	26.6
Hours since Last Annual Inspection	±48.2	
Authority to Fly (Issue Date)	14 October 2010	
C of R (Issue Date) (Present owner)	7 December 2009	
Operating Categories	Standard	

- 1.6.2 This was a new aircraft, but the owner did an annual inspection as indicated on 25 August 2010.

Engine:

Type	Superior XP-I0-360-B1AD2
Serial Number	36C071140
Hours since New	±74.8
Hours since Overhaul	TBO not reached

Propeller:

Type	MT Propeller MTV-15-B/183-402
Serial Number	06528
Hours since New	±74.8
Hours since Overhaul	TBO not reached

- 1.6.2 Aircraft hours as indicated above are approximate hours as the last known hours were documented four days before the accident flight on 17 November 2011.

1.7 Meteorological Information

1.7.1 Meteorological information was obtained from the South African Weather Service. The probable weather conditions at the time of the accident are given in the table below.

Wind direction	040°M	Wind speed	06 kt	Visibility	>10 km
Temperature	23°C	Cloud cover	Scattered	Cloud base	3 000 ft
Dew point	14°C				

1.8 Aids to Navigation

1.8.1 The aircraft was equipped with standard navigational equipment as required by the Regulator. There were no recorded defects to navigational equipment prior to the flight.

1.9 Communications

1.9.1 The aircraft was equipped with standard communication equipment as required by the Regulator. There were no recorded defects to communication equipment prior to the flight. The pilot did communicate with circuit traffic on the VHF frequency 124.2 MHz.

1.10 Aerodrome Information

Aerodrome Location	7 nm north-west of Brits in North West Province	
Aerodrome Co-ordinates	S25°31'57.0" E 027°46'33.0"	
Aerodrome Elevation	3 740 ft	
Runway Designations	02/20	
Runway Dimensions	835 m x 30 m	
Runway Used	02	
Runway Surface	Asphalt	
Approach Facilities	None	

1.11 Flight Recorders

1.11.1 The aircraft was not fitted with a cockpit voice recorder (CVR) or a flight data recorder (FDR), and neither was required by regulations to be fitted to this type of aircraft.

1.12 Wreckage and Impact Information

1.12.1 Primary debris path

Debris was scattered in a radius of 25 m on high ground at a height of 3 900 ft.

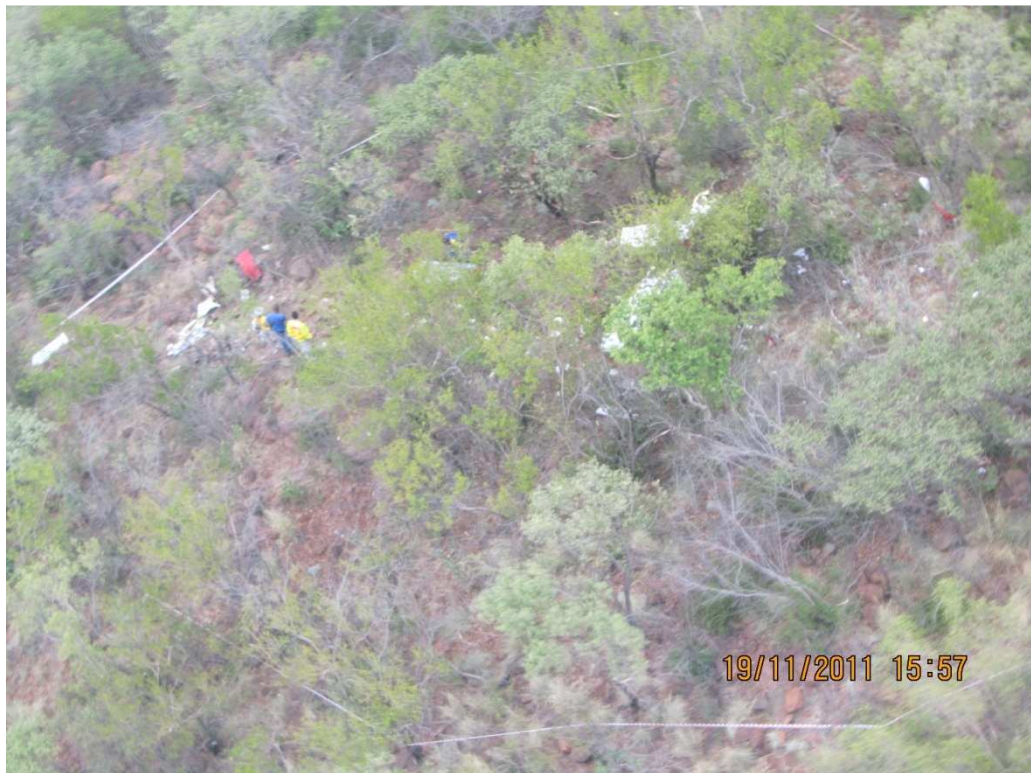


Figure 3 Debris path

1.12.2 Final impact path

The final impact path was in the direction of 148°M on the downwind leg for Runway 02 when the aircraft impacted with high ground.

1.12.3 Impact sequence

The aircraft impacted with rocky terrain and slid uphill for a further 11 m before coming to rest against a tree.

1.12.4 Location of impact impressions on the ground, trees, buildings and other objects

The location of the impact impression was at GPS co-ordinates S25°34'59" E027°45'40.0" at a height of 3 900 ft.

1.12.5 Aircraft attitude during impact

According to eyewitnesses, the aircraft impacted the ground in a left wing low attitude while turning to the left.

1.12.6 Aircraft configuration during impact

Due to the severity of damage caused to the aircraft, it was not possible to determine if the aircraft was configured for the landing at the time of the accident.

1.13 Medical and Pathological Information

1.12.1 The preliminary post-mortem report indicated there was not enough

tissue/specimen/organs to conclude the cause or mechanism of death. The remaining aorta, however, showed some lumen wall hardening (arteriosclerosis), which could have indicated a pre-existing cardiovascular disease.

1.14 Fire

1.14.1 There was no pre- or post-impact fire.

1.15 Survival Aspects

1.15 The damage to the cockpit due to kinetic forces resulted in pilot being fatally injured thus the accident not survivable.

1.16 Tests and Research

1.16.1 None was considered necessary.

1.17 Organizational and Management Information

1.17.1 According to available information, the aircraft's Authority to Fly had expired on 25 August 2011. **(See Appendix B.)**

1.17.2 The owner of the aircraft certified maintenance done to the aircraft while he was not an Approved Person or Maintenance Engineer. **(See Appendix C.)**

1.18 Additional Information

1.18.1 Witness 1

The witnesses state that (remove witness 1 or 2 etc) was conducting training in the circuit at Brits Aerodrome.

The witness stated that ZU-YJK was approaching Runway 02 but he could see his speed was too high for landing. He then asked the pilot of ZU-YJK if he was doing a flypast. The pilot of ZU-YJK said no; he was attempting to land the aircraft but was experiencing difficulty seeing. The pilot of ZU-YJK said he was flying from Zebula Lodge to Thabazimbi when his vision became blurred.

The pilot of ZU-YJK said he had managed to find Brits Aerodrome. He stated that when he was high up, he could see well.

The witness said he was conducting circuit training when he saw ZU-YJK on a long final approach for Runway 02. The witness then said to the pilot of ZU-YJK that he was too high and too fast for the approach onto Runway 02. The pilot of ZU-YJK then decided to perform a go-around. He then said he would do a couple of orbits and then come back for the landing. He said he could identify the runway during his previous report but as soon as he came closer to the runway, his vision became blurred.

The witness then suggested to the pilot of ZU-YJK that he would assist him in flying to Lanseria Aerodrome for the landing, but the ZU-YJK pilot said no; he would land at Brits. The witness in the meantime landed and got into his own aircraft to take off and assist the pilot of ZU-YJK. While the witness was waiting at the holding point for take-off, ZU-YJK was approaching for landing onto Runway 02. This time he was lower on the approach but again way too fast. The witness then asked the pilot flying ZU-YJK about his fuel state, upon which he answered "I am heavy".

The pilot of ZU-YJK then reported that he could only see two lines and then pulled his aircraft up and said he was going around. The witness then got airborne again but could not establish communication with ZU-YJK. He then made a Pan-Pan call to Lanseria and informed them of the situation at Brits aerodrome.

The witness then searched the area and found the wreckage of ZU-YJK on the slope of high ground to the west of Brits Aerodrome.

1.18.2 Witness 2

Witness 2 was on the ground at the aerodrome at the time of the accident and was listening out on the VHF frequency 124.2 MHz.

The witness stated the pilot of ZU-YJK told other pilots on frequency that he was experiencing difficulty in seeing the runway (blurred vision). At one stage, the ZU-YJK pilot said that his condition had improved and he could see again, but shortly thereafter said he could not see anymore. The witness stated that other pilots in the air tried to assist the pilot of ZU-YJK to land his aircraft but his approach speed was too high for landing. He descended twice to a height of approximately 15–20 m (50–65 ft) above the runway before he applied power and performed a go-around.

According to the witness, after the last landing attempt, the pilot turned to the left and not to the right as circuit procedures for Runway 02 required. There was no further radio communication from the pilot. The witness was later informed by an aircraft in the area that they had located the aircraft wreckage where it had collided with high ground.

1.18.3 Witness 3

Witness 3 was at the Drie Berge Caravan Park at the time of the accident. The witness stated that he was at the swimming pool when he saw a white and red aircraft flying low and fast.

The witness stated that the aircraft was approaching some high ground to the west of the park. It looked as if the aircraft was going to pass to the right of the high ground, when suddenly the aircraft turned to the left and impacted with the high ground.

1.18.4 Additional information on pilot behaviour prior to the accident

During the investigation process, evidence was found to indicate that the pilot slept in his motor vehicle, which was parked inside his hangar at Brits aerodrome, the night before the accident. However, no evidence could be found indicating that the pilot had had a proper meal the evening before or on the morning of 20 November 2012, prior to the flight.

- 1.18.5 Evidence in the pilot's logbook and from friends indicates that the pilot was doing aerobic flying regularly from 14 October 2012 up until 20 November 2012, the day before the accident. No evidence could be found that the pilot did aerobic flying on the morning of the flight.
- 1.18.6 The pilot was on hypertension protocol – Dilatrend 25 mg was prescribed to him for this condition.
- 1.18.7 Include the reference or source where the information was extracted. When looking at the causes of blurred vision, the following was taken into account:

Age

Blurred vision can be a normal sign of ageing in a condition called presbyopia. The pilot was 70 years old with hypertension and was therefore considered to be a high-risk candidate.

Medical condition

Complications of hypertension can include stroke, dizziness, hypertensive retinopathy and vision abnormalities, including retinal detachment, which can contribute to or cause blurred vision.

Medication

Some of the side effects associated with Dilatrend are that it can cause dizziness, faintness and vision abnormalities including blurred vision.

Miscellaneous

The incorrect diet or lack of proper dietary needs prior to the flight can cause hypoglycaemia, which can cause blurred vision. Lack of sleep and fatigue are also a documented cause of blurred vision.

The list of possibilities can expand far beyond what has been listed above. These were just some of the issues considered, following the circumstances that were identified during the investigation process.

1.19 Useful or Effective Investigation Techniques

1.19.1 None

2. ANALYSIS

- 2.1 The pilot was the holder of a private pilot licence, which was valid at the time of the accident. He was also in possession of a valid medical certificate with hypertension protocol and corrective lenses imposed as restrictions.
- 2.2 Medicine was prescribed for the pilot's hypertension.
- 2.3 The pilot was doing aerobic flying the day before the accident.
- 2.4 The pilot was sleeping in his motor vehicle the evening before the accident and no evidence could be found of him having proper meals on the evening before the accident or the morning before the flight.

- 2.5 At various times, after returning to the circuit at Brits aerodrome, the pilot reported that he was experiencing difficulty with his vision. He made several attempts to land the aircraft at FABS but had to perform a go-around each time due to his impaired vision condition.
- 2.6 The circuit after the last go-around was flown to the left (towards high ground) and not to the right as indicated in the circuit procedure for FABS.
- 2.7 Maintenance documents revealed that the last annual inspection was carried out on 25 August 2010 at 26.6 airframe hours.
- 2.8 Maintenance documents also revealed that a dual inspection on the engine controls was carried out by the owner while he was not authorised to do so. This inspection was certified by the owner after the assembly of the aircraft.
- 2.9 At the time of the accident, the aircraft had no valid Authority to Fly.
- 2.10 Fine weather conditions prevailed at the time of the accident and were not considered to have had an effect on the flight.

3. CONCLUSION

3.1 Findings

- 3.1.1 The pilot was properly certified and qualified according to current regulations to conduct the flight.
- 3.1.2 The aircraft was not properly certified and maintained according to current regulations as it had no valid Authority to Fly and the last annual inspection was done more than 12 months before the accident flight.
- 3.1.3 Although a medical condition was reported before the accident, not enough tissue/specimen/organs were available for analyses to confirm the cause of the blurred vision. Toxicology tests were performed and should these results, once received, indicate medical aspects that may have affected the performance of the pilot, this will be considered as new evidence and the investigation re-opened.
- 3.1.4 Consecutive aerobatic flying and the effect it had on the pilot during the days leading up to the accident could not be ruled out as a cause of the reported blurred vision.
- 3.1.5 The weather did not contribute to the accident.

3.2 Probable Cause/s

- 3.2.1 Failure to maintain clearance from rising ground during an attempt to land at FABS
- 3.3.1 Impaired vision by the pilot during flight resulted in failure to maintain clearance from rising terrain during an attempt to land at FABS

4. SAFETY RECOMMENDATIONS

4.1 It is recommended to the Director of Civil Aviation that the Communications Department in co-operation with the Aviation Medicine/Air Safety Operations Department engage with the aviation community during safety presentations to re-emphasise the importance of adequate rest and food intake before a flight and the effect of medicine on pilots' flying abilities.

5. APPENDICES

- 5.1 Appendix A Copy of Pilot's Logbook
- 5.2 Appendix B Expired Authority to Fly
- 5.3 Appendix C Maintenance Certification

Compiled by:

C Williams
For: Director of Civil Aviation

Date:

Investigator-in-charge:

Date:

Co-Investigator:

Date:

Expired Authority to Fly

Reference: J15/ZU-YJK
Enquiries: BRAAM HECHTER

Tel: 011 5451396
Fax: 011 545 1013

MR. J. KLAZAR
POSTNET SUITE 133
PRIVATE BAG X 20009
GARSFONTEIN
0042

Expiry Date: 25 AUGUST 2011

RE: PRIVATE OPERATION AUTHORITY TO FLY

AUTHORITY TO FLY FOR MICROLIGHT, AMATEUR BUILT, NOT CERTIFIED PRODUCTION
BUILT AND KIT BUILT AIRCRAFT, NOT FOR REWARD

1 DETAILS OF APPLICANT : KLAZAR J.
2. DETAILS OF AIRCRAFT
2.1 Registration marks : ZU-YJK
2.2 Aircraft manufacturer/builder : VANS AIRCRAFT INC
2.3 Aircraft model : RV-7A
2.4 Serial number : 72606
2.5 Engine type and model : SUPERIOUR AIRPARTS XP-IO-360-B1AD2
2.6 Engine Serial number : 06528

3. The above mentioned aircraft is hereby issued with an authority to fly in terms of Part 24.02.03 of Civil Aviation Regulations 1997, as amended with respect to the aircraft detailed in paragraph 2 of this permit. This permit replaces the requirement for the issue of a certificate of airworthiness in terms of regulation 21.08.1A.
4. In the interest of public and aviation safety, the applicant is required to comply with the following:
- 4.1 **The aircraft is privately operated and not utilised for remuneration.**
- 4.2 The aircraft is serviceable before each flight and has undergone an annual inspection during the 12 months immediately preceding any flight and is correctly certified in the applicable aircraft record.
- 4.3 All flights are conducted under VMC by day and will not be undertaken over built-up areas and open-air assemblies of persons except for purposes of take-off and landing.
- 4.4 All the requirements of Part 24 and Part 94 of the Civil Aviation Regulations, 1997, as amended, are met.
- 5.1 **This authority is rendered invalid if the ownership of the aircraft is changed and must be returned to the commissioner within 30 days.**
- 5.2 **This authority is rendered invalid if the aircraft is involved in an incident or accident and must be returned to the commissioner within 30 days.**
- 5.3 **This document or certified copy must be carried in the aircraft at all times.**
- 5.4 **The aircraft may not be operated over any foreign country without special permission from the authority of that country.**

Date of Issue: 2010-10-14

Hechter
FOR DIRECTOR FOR CIVIL AVIATION

