European Aviation Safety Agency

EASA

TYPE-CERTIFICATE DATA SHEET

HR200 and R2000 series

Type Certificate Holder:

ALPHA AVIATION CONCEPT Ltd

Hamilton
NEW ZEALAND

For variants:	HR200-100	R2160	R2160i
	HR200-120	R2100	R2120U
	HR200-120B	R2100A	
	HR200-160	R2160D	
	HR200-100S	R2112	

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SECTION 1: GENERAL, Basic Model HR200-100 Design

A. General

1.	a) Type: b) Variant:	HR200-100 Not Applicable
2.	Airworthiness Category:	Utility Category
3.	Type Certificate Holder:	Alpha Aviation Concept Ltd Hamilton NEW ZEALAND
4.	Manufacturer:	Alpha Aviation Manufacturing Ltd Hamilton NEW ZEALAND
5.	(reserved)	
6.	NZ-CAA Type Certification Date:	16-June-2006
7.	EASA Type Certification Date:	16-June-2006
8.	The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)	

B. Certification Basis

1.	Reference Application Date for determining the applicable requirements :	13-September-1970
2.	(Reserved)	
3.	(Reserved)	
4.	Certification Basis:	As defined in NZ-CAA TCDS A-15
5.	Airworthiness Requirements:	Refer to Section 13, Note 2
6.	Requirements elected to comply:	None
7.	EASA Special Conditions:	None
8.	EASA Exemptions:	None
9.	EASA Equivalent Safety Findings:	None
10.	EASA Environmental Standards :	CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1.	(Reserved)	
2.	Description:	Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.
3.	Equipment:	The basic required equipment as prescribed in the applicable airworthiness regulations (see certification

basis) must be installed in the aircraft for airworthiness certification.
The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.

4. Dimensions: Refer to Airplane Flight Manual

5. Engines: Lycoming O-235-H2C

The EASA type certification standard includes that of FAA TC E-223, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

5.1 Engine Limits: For all operations 2600 rpm (108 HP)

6. Propellers and propeller limits: (1). McCauley: 1A 105/BCM-70-56

The EASA type certification standard includes that of FAA TC P-918, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

Maximum diameter : Not over 1.78m (70”)
Minimum diameter : Not under 1.70m (67”)
Number of blades : 2
Minimum Static RPM at sea level : 2300 RPM

(2). Hoffmann: HO-14-178/115

The EASA type certification standard includes that of LBA TC 32.110/001.

Maximum diameter : Not over 1.78m (70”)
Minimum diameter : Not under 1.73m (68”)
Number of blades : 2
Minimum Static RPM at sea level : 2300 RPM

7. Fluids:

7.1 Fuel: 80/87 minimum aviation grade gasoline
7.2 Oil: Refer to Airplane Flight Manual
7.3 Coolant: Not Applicable

8. Fluid capacities:

8.1 Fuel: One structural tank
Total capacity 120 litres (31.7 US gal)
Total usable capacity 118 litres (31 US gal)

8.2 Oil: Maximum: 5.7 litres (6 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	160 KIAS (296 km/h)
V_d	(Maximum design speed)	177 KIAS (328 km/h)
V_{NO}	(Maximum structural cruising speed)	131 KIAS (242 km/h)
V_A	(Manoeuvring speed)	131 KIAS (242 km/h)
V_{FE}	(Maximum Flap Extended)	96 KIAS (176 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Utility Category
Maximum Takeoff: 780 kgs (1720 lbs)
Maximum Landing: 780 kgs (1720 lbs)

13. Centre of Gravity Range:

Utility category
(1) Forward Limit: 0.22 m aft of datum at 580 kgs (8.7" at 1278 lbs)
(2) Intermediate limit: 0.32 m aft of datum at 780 kg (12.6" at 1720 lbs)
(3) Aft Limit: 0.46 m aft of datum at 780 kg (18.1" at 1720 lbs)

Straight line variation between points given.

14. Datum: Wing leading edge rib No. 5.

15. Design Limit Load Factors:

Flaps up	+4.4
	-1.8
Flaps down	+2
	-0

16. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: Two at Station +0.45 m (+ 17.7")

19. Baggage / Cargo compartment: Maximum baggage compartment 35 kg at +1.20 m (+ 47.2").

20. Wheels and Tires: Refer to Airplane Flight Manual

21. Control Surface movements:

Elevator:	Up	10°±0.5°
	Down	12.5°±0.5 °
Elevator up tab:	Up	33°±3°
	Down	5°±3°
Elevator down tab:	Up	14°±3°
	Down	22°±3°
Rudder relative to fin:	Right	30°+0°
		- 3°
	Left	30° +0°
		- 3°
Ailerons relative to wing:	Up	18°±1.5°

	Down	12°± 1.5°
Flaps relative to wing:	Up	0°
	Take-off	10°± 2.5°
	Landing	30°± 2.5°

22. Serial Numbers Eligible: 001 through 378 (Refer to Section 13, note 7)

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) Flight Manual NZ-CAA Approved Flight Manual AIR 2960 (Refer to section 13, note 9)

SECTION 2: GENERAL, Basic Model HR200-120 Design

A. General

1. a) Type: HR200-120
   b) Variant: Not Applicable
2. Airworthiness Category: Utility Category
3. Type Certificate Holder: Alpha Aviation Concept Ltd
   Hamilton
   NEW ZEALAND
4. Manufacturer: Alpha Aviation Manufacturing Ltd
   Hamilton
   NEW ZEALAND
5. (Reserved)
6. NZ-CAA Type Certification Date: 16-June-2006
7. EASA Type Certification Date: 16-June-2006
8. The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)

B. Certification Basis

1. Reference Application Date for determining the applicable requirements : 13-September-1970
2. (Reserved)
3. (Reserved)
4. Certification Basis: As defined in NZ-CAA TCDS A-15
5. Airworthiness Requirements: Refer to Section 13, Note 2
6. Requirements elected to comply: None
7. EASA Special Conditions: None

8. EASA Exemptions: None

9. EASA Equivalent Safety Findings: None
10. EASA Environmental Standards : CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1. (Reserved).

2. Description: Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.

3. Equipment: The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for airworthiness certification.
The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.

4. Dimensions: Refer to Airplane Flight Manual

5. Engines: Lycoming O-235-J2A

The EASA type certification standard includes that of FAA TC E-223, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

5.1 Engine Limits: For all operations 2800 rpm (125 HP)

6. Propellers and propeller limits: (1). McCauley: 1A 135/JCM-71-54

The EASA type certification standard includes that of FAA TC P-842, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

Maximum diameter : Not over 1.80m (71”)
Minimum diameter : Not under 1.80m (71”)
Number of blades : 2
Minimum Static RPM at sea level : 2300 RPM
No reduction permitted.

Do not operate between 2025 and 2325 rpm continuously when throttle is reduced by more than ¼ (especially during descent).

7. Fluids:

7.1	Fuel:	100LL minimum aviation grade gasoline
7.2	Oil:	Refer to Airplane Flight Manual
7.3	Coolant:	Not Applicable

8. Fluid capacities:

8.1	Fuel:	One structural tank Total capacity 120 litres (31.7 US gal) Total usable capacity 118 litres (31 US gal)
8.2	Oil:	Maximum: 5.7 litres (6 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	160 KIAS (296 km/h)
V_d	(Maximum design speed)	177 KIAS (328 km/h)
V_{NO}	(Maximum structural cruising speed)	131 KIAS (242 km/h)
V_A	(Manoeuvring speed)	131 KIAS (242 km/h)
V_{FE}	(Maximum Flap Extended)	96 KIAS (176 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Utility Category
Maximum Takeoff: 780 kgs (1720 lbs)
Maximum Landing: 780 kgs (1720 lbs)

13. Centre of Gravity Range:

Utility category
(1) Forward Limit: 0.22 m aft of datum at 580 kgs (8.7" at 1278 lbs)
(2) Intermediate limit: 0.32 m aft of datum at 780 kg (12.6" at 1720 lbs)
(3) Aft Limit: 0.46 m aft of datum at 780 kg (18.1" at 1720 lbs)

Straight line variation between points given.

14. Datum: Wing leading edge rib No. 5.

15. Design Limit Load Factors:

Flaps up +4.4
-1.8
Flaps down +2
-0

16. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: Two at Station +0.45 m (+ 17.7")

19. Baggage / Cargo compartment: Maximum baggage compartment 35 kg at +1.20 m (+ 47.2").

20. Wheels and Tires: Refer to Airplane Flight Manual

21. Control Surface movements: Elevator: Up 10°±0.5°

	Down	12.5°±0.5 °
Elevator up tab:	Up	33°±3°
	Down	5°±3°
Elevator down tab:	Up	14°±3°
	Down	22°±3°
Rudder relative to fin:	Right	30°+0° - 3°
	Left	30° +0° - 3°
Ailerons relative to wing:	Up	18°±1.5°
	Down	12°± 1.5°
Flaps relative to wing:	Up	0°
	Take-off	10°± 2.5°
	Landing	30°± 2.5°
If mod. 17 installed	Landing	20°± 2.5°

22. Serial Numbers Eligible: 001 through 378 (Refer to Section 13, note 7)

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) This model is identical to the HR200-100 except it is fitted with a Lycoming O-235-J2A engine.
2) Flight Manual NZ-CAA Approved Flight Manual AIR 2962 (Refer to Section 13, note 9)

SECTION 3: GENERAL, Basic Model HR200-120B Design

A. General

1. a) Type: HR200-120B
   b) Variant: Not Applicable
2. Airworthiness Category: Utility Category
3. Type Certificate Holder: Alpha Aviation Concept Ltd
   Hamilton
   NEW ZEALAND
4. Manufacturer: Alpha Aviation Manufacturing Ltd
   Hamilton
   NEW ZEALAND
5. (reserved)
6. NZ-CAA Type Certification Date: 16-June-2006
7. EASA Type Certification Date: 16-June-2006
8. The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)

B. Certification Basis

1.	Reference Application Date for determining the applicable requirements :	13-September-1970
2.	(Reserved)	
3.	(Reserved)	
4.	Certification Basis:	As defined in NZ-CAA TCDS A-15
5.	Airworthiness Requirements:	Refer to Section 13, Note 2
6.	Requirements elected to comply:	None
7.	EASA Special Conditions:	None
8.	EASA Exemptions:	None
9.	EASA Equivalent Safety Findings:	None
10.	EASA Environmental Standards :	CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1.	(Reserved).	
2.	Description:	Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.
3.	Equipment:	The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for airworthiness certification. The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.
4.	Dimensions:	Refer to Airplane Flight Manual
5.	Engines:	Lycoming O-235-L2A The EASA type certification standard includes that of FAA TC E-223, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
5.1	Engine Limits:	For all operations 2800 rpm (118 HP)
6.	Propellers and propeller limits:	(1). McCauley: 1A 135/JCM-71-47 The EASA type certification standard includes that of FAA TC P-842, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU

member state prior to 28 September 2003 are also acceptable.

Maximum diameter : Not over 1.80m (71")
Minimum diameter : Not under 1.77m (69.7")
Number of blades : 2
Minimum Static RPM at sea level : 2250 RPM

Do not operate between 2025 and 2325 rpm continuously when throttle is reduced by more than ¼ (especially during descent).

(2). Hoffmann: HO-14-178/115

The EASA type certification standard includes that of LBA TC 32.110/001.

Maximum diameter : Not over 1.78m (70")
Minimum diameter : Not under 1.73m (68")
Number of blades : 2
Minimum Static RPM at sea level : 2250 RPM

7. Fluids:

7.1	Fuel:	100LL minimum aviation grade gasoline
7.2	Oil:	Refer to Airplane Flight Manual
7.3	Coolant:	Not Applicable

8. Fluid capacities:

8.1	Fuel:	One structural tank Total capacity 120 litres (31.7 US gal) Total usable capacity 118 litres (31 US gal)
8.2	Oil:	Maximum: 5.7 litres (6 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	160 KIAS (296 km/h)
V_d	(Maximum design speed)	177 KIAS (328 km/h)
V_{NO}	(Maximum structural cruising speed)	131 KIAS (242 km/h)
V_A	(Manoeuvring speed)	131 KIAS (242 km/h)
V_{FE}	(Maximum Flap Extended)	96 KIAS (176 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Utility Category
Maximum Takeoff: 780 kgs (1720 lbs)
Maximum Landing: 780 kgs (1720 lbs)

13. Centre of Gravity Range:

Utility category
(1) Forward Limit: 0.22 m aft of datum at 580 kgs (8.7" at 1278 lbs)
(2) Intermediate limit: 0.32 m aft of datum at 780 kg (12.6" at 1720 lbs)
(3) Aft Limit: 0.46 m aft of datum at 780 kg (18.1" at 1720 lbs)

Straight line variation between points given.

14. Datum: Wing leading edge rib No. 5.

15. Design Limit Load Factors:

Flaps up	+4.4
	-1.8
Flaps down	+2
	-0

16. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: Two at Station +0.45 m (+ 17.7")

19. Baggage / Cargo compartment: Maximum baggage compartment 35 kg at +1.20 m (+ 47.2").

20. Wheels and Tires: Refer to Airplane Flight Manual

21. Control Surface movements:

Elevator:	Up	10°±0.5°
	Down	12.5°±0.5 °
Elevator up tab:	Up	33°±3°
	Down	5°±3°
Elevator down tab:	Up	14°±3°
	Down	22°±3°
Rudder relative to fin:	Right	30°+0°
		- 3°
	Left	30° +0°
		- 3°
Ailerons relative to wing:	Up	18°±1.5°
	Down	12°± 1.5°
Flaps relative to wing:	Up	0°
	Take-off	10°± 2.5°
	Landing	30°± 2.5°
If mod. 17 installed	Landing	20°± 2.5°

22. Serial Numbers Eligible: 001 through 378 (Refer to Section 13, note 7)

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) This model is identical to the HR200-120 except it is fitted with a Lycoming O-235-L2A engine, stabilator modification Nr 10 and has disc brakes.
2) Flight Manual NZ-CAA Approved Flight Manual AIR 2963 (Serial numbers up to 249)
NZ-CAA Approved Flight Manual AIR 2964 (Serial number 250 to 378)
(Refer to Section 13, note 9)

SECTION 4: GENERAL, Basic Model HR200-160 Design

A. General

1.	a) Type: b) Variant:	HR200-160 Not Applicable
2.	Airworthiness Category:	Utility Category
3.	Type Certificate Holder:	Alpha Aviation Concept Ltd Hamilton NEW ZEALAND
4.	Manufacturer:	Alpha Aviation Manufacturing Ltd Hamilton NEW ZEALAND
5.	(reserved)	
6.	NZ-CAA Type Certification Date:	16-June-2006
7.	EASA Type Certification Date:	16-June-2006
8.	The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)	

B. Certification Basis

1.	Reference Application Date for determining the applicable requirements :	13-September-1970
2.	(Reserved)	
3.	(Reserved)	
4.	Certification Basis:	As defined in NZ-CAA TCDS A-15
5.	Airworthiness Requirements:	Refer to Section 13, Note 2
6.	Requirements elected to comply:	None
7.	EASA Special Conditions:	None
8.	EASA Exemptions:	None
9.	EASA Equivalent Safety Findings:	None
10.	EASA Environmental Standards :	CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1.	(Reserved)	
2.	Description:	Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.
3.	Equipment:	The basic required equipment as prescribed in the applicable airworthiness regulations (see certification

basis) must be installed in the aircraft for airworthiness certification.
The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.

4. Dimensions: Refer to Airplane Flight Manual

5. Engines: Lycoming O-320-D

The EASA type certification standard includes that of FAA TC E-274, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

5.1 Engine Limits: For all operations 2700 rpm (160 HP)

6. Propellers and propeller limits: (1). Sensenich 74DM-6S5-2-66 or M74DMS-2-66

The EASA type certification standard includes that of FAA TC P-886, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

Maximum diameter : Not over 1.83m (72”)
Minimum diameter : Not under 1.83m (72”)
Number of blades : 2
Minimum Static RPM at sea level : 2150 RPM

7. Fluids:

7.1 Fuel: 91/96 or 100/130 minimum aviation grade gasoline
7.2 Oil: Refer to Airplane Flight Manual
7.3 Coolant: Not Applicable

8. Fluid capacities:

8.1 Fuel: One structural tank
Total capacity 120 litres (31.7 US gal)
Total usable capacity 118 litres (31 US gal)

8.2 Oil: Maximum: 7.5 litres (8 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	161 KIAS (298 km/h)
V_d	(Maximum design speed)	178 KIAS (331 km/h)
V_{NO}	(Maximum structural cruising speed)	131 KIAS (242 km/h)
V_A	(Manoeuvring speed)	131 KIAS (242 km/h)
V_{FE}	(Maximum Flap Extended)	96 KIAS (176 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Utility Category
Maximum Takeoff: 800 kgs (1764 lbs)
Maximum Landing: 800 kgs (1764 lbs)

13. Centre of Gravity Range:

Utility category
(1) Forward Limit: 0.22 m aft of datum at 580 kgs (8.7" at 1278 lbs)
(2) Intermediate limit: 0.32 m aft of datum at 800 kg (12.6" at 1764lbs)
(3) Aft Limit: 0.46 m aft of datum at 800 kg (18.1" at 1764 lbs)

Straight line variation between points given.

14. Datum: Wing leading edge rib No. 5.

15. Design Limit Load Factors:

Flaps up	+4.4
	-1.8
Flaps down	+2
	-0

16. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: Two at Station +0.45 m (+ 17.7")

19. Baggage / Cargo compartment: Maximum baggage compartment 35 kg at +1.20 m (+ 47.2").

20. Wheels and Tires: Refer to Airplane Flight Manual

21. Control Surface movements:

Elevator:	Up	10°±0.5°
	Down	12.5°±0.5 °
Elevator up tab:	Up	33°±3°
	Down	5°±3°
Elevator down tab:	Up	14°±3°
	Down	22°±3°
Rudder relative to fin:	Right	30°+0°
		- 3°
	Left	30° +0°
		- 3°
Ailerons relative to wing:	Up	18°±1.5°
	Down	12°± 1.5°
Flaps relative to wing:	Up	0°
	Take-off	10°± 2.5°
	Landing	30°± 2.5°
If mod. 17 installed	Landing	20°± 2.5°

22. Serial Numbers Eligible: 001 through 378 (Refer to Section 13, note 7)

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) This model is identical to the HR200-100 except it is fitted with a Lycoming O-320-D engine, stabilator modification Nr 10 and has disc brakes.
2) Flight Manual NZ-CAA Approved Flight Manual AIR 2965 (Serial numbers up to 330)
NZ-CAA Approved Flight Manual AIR 2966 (Serial number 331 to 378)
(Refer to Section 13, note 9).

SECTION 5: GENERAL, Basic Model HR200-100S Design

A. General

1. a) Type: HR200-160
b) Variant: Not Applicable
2. Airworthiness Category: Utility Category
3. Type Certificate Holder: Alpha Aviation Concept Ltd
Hamilton
NEW ZEALAND
4. Manufacturer: Alpha Aviation Manufacturing Ltd
Hamilton
NEW ZEALAND
5. (reserved)
6. NZ-CAA Type Certification Date: 16-June-2006
7. EASA Type Certification Date: 16-June-2006
8. The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)

B. Certification Basis

1. Reference Application Date for determining the applicable requirements : 13-September-1970
2. (Reserved)
3. (Reserved)
4. Certification Basis: As defined in NZ-CAA TCDS A-15
5. Airworthiness Requirements: Refer to Section 13, Note 2
6. Requirements elected to comply: None
7. EASA Special Conditions: None

8. EASA Exemptions: None

9. EASA Equivalent Safety Findings: None

10. EASA Environmental Standards : CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1. (Reserved).

2. Description: Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.

3. Equipment: The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for airworthiness certification.
The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.

4. Dimensions: Refer to Airplane Flight Manual

5. Engines: Lycoming O-235-H2C

The EASA type certification standard includes that of FAA TC E-223, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

5.1 Engine Limits: For all operations 2600 rpm (108 HP)

6. Propellers and propeller limits: Hoffmann: HO-14-178/115

The EASA type certification standard includes that of LBA TC 32.110/001.

Maximum diameter : Not over 1.78m (70”)
Minimum diameter : Not under 1.73m (68”)
Number of blades : 2
Minimum Static RPM at sea level : 2300 RPM

7. Fluids:

7.1 Fuel: 80/87 minimum aviation grade gasoline
7.2 Oil: Refer to Airplane Flight Manual
7.3 Coolant: Not Applicable

8. Fluid capacities:

8.1 Fuel: One structural tank

Total capacity	120 litres (31.7 US gal)
Total usable capacity	118 litres (31 US gal)

8.2 Oil: Maximum: 5.7 litres (6 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	160 KIAS (296 km/h)
V_d	(Maximum design speed)	177 KIAS (328 km/h)
V_{NO}	(Maximum structural cruising speed)	131 KIAS (242 km/h)
V_A	(Manoeuvring speed)	131 KIAS (242 km/h)
V_{FE}	(Maximum Flap Extended)	96 KIAS (176 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Utility Category
Maximum Takeoff: 780 kgs (1720 lbs)
Maximum Landing: 780 kgs (1720 lbs)

13. Centre of Gravity Range:

Utility category
(1) Forward Limit: 0.22 m aft of datum at 580 kgs (8.7" at 1278 lbs)
(2) Intermediate limit: 0.35 m aft of datum at 780 kg (13.8" at 1720 lbs)
(3) Aft Limit: 0.45 m aft of datum at 780 kg (17.7" at 1720 lbs)

Straight line variation between points given.

14. Datum: Wing leading edge rib No. 5.

15. Design Limit Load Factors:

Flaps up	+4.4
	-1.8
Flaps down	+2
	-0

16. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: Two at Station +0.45 m (+ 17.7")

19. Baggage / Cargo compartment: Maximum baggage compartment 35 kg at +1.20 m (+ 47.2").

20. Wheels and Tires: Refer to Airplane Flight Manual

21. Control Surface movements:

Elevator:	Up	10°±0.5°
	Down	12.5°±0.5 °
Elevator up tab:	Up	33°±3°
	Down	5°±3°
Elevator down tab:	Up	14°±3°

	Down	22°±3°
Rudder relative to fin:	Right	30°+0°
		- 3°
	Left	30° +0°
		- 3°
Ailerons relative to wing:	Up	18°±1.5°
	Down	12°± 1.5°
Flaps relative to wing:	Up	0°
	Take-off	10°± 2.5°
	Landing	20°± 2.5°

22. Serial Numbers Eligible: 001 through 378 (Refer to Section 13, note 7)

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) This model is identical to the HR200-100 except it has no wheel and fin fairings and the spinner is replaced by a hub plate.
2) Flight Manual NZ-CAA Approved Flight Manual AIR 2961 (Refer to Section 13, note 9)

SECTION 6: GENERAL, Basic Model R2160 Design

A. General

1. a) Type: R2160
   b) Variant: Not Applicable

2. Airworthiness Category: Acrobatic and Utility Categories

3. Type Certificate Holder: Alpha Aviation Concept Ltd
   Hamilton
   NEW ZEALAND

4. Manufacturer: Alpha Aviation Manufacturing Ltd
   Hamilton
   NEW ZEALAND

5. (Reserved)

6. NZ-CAA Type Certification Date: 16-June-2006

7. EASA Type Certification Date: 16-June-2006

8. The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)

B. Certification Basis

1. Reference Application Date for determining the applicable requirements : 13-September-1970

2. (Reserved)

3. (Reserved)

4.	Certification Basis:	As defined in NZ-CAA TCDS A-15
5.	Airworthiness Requirements:	Refer to Section 13, Note 2
6.	Requirements elected to comply:	None
7.	EASA Special Conditions:	None
8.	EASA Exemptions:	None
9.	EASA Equivalent Safety Findings:	None
10.	EASA Environmental Standards :	CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1.	Type Design Definition:	AAD Drawing No 60-00-001 (Serial numbers 160A-06001 and up).
2.	Description:	Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.
3.	Equipment:	The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for airworthiness certification. The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.
4.	Dimensions:	Refer to Airplane Flight Manual
5.	Engines:	Lycoming O-320-D The EASA type certification standard includes that of FAA TC E-274, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
5.1	Engine Limits:	For all operations 2700 rpm (160 HP)
6.	Propellers and propeller limits:	Sensenich 74DM-6S5-2-66 (Serial numbers 001 to 378) or 74DM-6S5-2-64 (All serial numbers) The EASA type certification standard includes that of FAA TC P-886, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable. Maximum diameter : Not over 1.83m (72”)

No reduction permitted
Number of blades : 2
Minimum Static RPM at sea level : 2150 RPM

7. Fluids:

7.1	Fuel:	100LL minimum aviation grade gasoline
7.2	Oil:	Refer to Airplane Flight Manual
7.3	Coolant:	Not Applicable

8. Fluid capacities:

8.1 Fuel:

One structural tank
Standard for s/n 001 through 378:
Total capacity 120 litres (31.7 US gal)
Total usable capacity 118 litres (31 US gal)

Optional for s/n 001 through 378, Standard for s/n 160A-06001 and up:
Total capacity 160 litres (42.2 US gal)
Total usable capacity 158 litres (41.7 US gal)

8.2 Oil: Maximum: 7.5 litres (8 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	178 KIAS (331 km/h)
V_d	(Maximum design speed)	199 KIAS (370 km/h)
V_{NO}	(Maximum structural cruising speed)	127 KIAS (236 km/h)
V_A	(Manoeuvring speed)	127 KIAS (236 km/h)
V_{FE}	(Maximum Flap Extended)	97 KIAS (180 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Acrobatic Category
Maximum Takeoff: 800 kgs (1764 lbs)
Maximum Landing: 800 kgs (1764 lbs)

Utility Category
Maximum Takeoff: 900 kgs (1984 lbs)
Maximum Landing: 900 kgs (1984 lbs)

13. Centre of Gravity Range:

Acrobatic category
(1) Forward Limit: 0.23 m aft of datum at 700 kgs (9.1” at 1543 lbs)
(2) Intermediate limit: 0.33 m aft of datum at 800 kg (13” at 1764 lbs)
(3) Aft Limit: 0.42 m aft of datum at 800 kg (16.5” at 1764 lbs)

Utility category
(1) Forward Limit: 0.23 m aft of datum at 700 kgs (9.1” at 1543 lbs)
(2) Intermediate limit: 0.33 m aft of datum at 900 kg (13” at 1984 lbs)
(3) Aft Limit: 0.48 m aft of datum at 900 kg (18.9” at 1984 lbs)

Straight line variation between points given.

14. Datum: Wing leading edge rib No. 5.

15. Design Limit Load Factors:

Acrobatic Category (800kg MAUW)

Flaps up	+6
	-3
Flaps down	+2
	0

Utility Category (900kg MAUW)

Flaps up	+4.4
	-1.8
Flaps down	+2
	0

16. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: Two at Station +0.46 m (+ 18.1")

19. Baggage / Cargo compartment: Maximum baggage compartment 35 kg at +1.21 m (+ 47.6"). None permitted for acrobatics.

20. Wheels and Tires: Refer to Airplane Flight Manual

21. Control Surface movements:

Elevator:	Up	10°±0.5°
	Down	12.5°±0.5 °
Elevator up tab:	Up	33°±3°
	Down	5°±3°
Elevator down tab:	Up	14°±3°
	Down	22°±3°
Rudder relative to fin:	Right	30°+0°
		- 3°
	Left	30° +0°
		- 3°
Ailerons relative to wing:	Up	20°±1.5°
	Down	15°± 1.5°
Flaps relative to wing:	Up	0°
	Take-off	10°± 2°
	Landing	35°± 2°

22. Serial Numbers Eligible: 001 through 378 (Refer to Section 13, note 7 and 8)
160A-06001 and up (Refer to Section 13, note 4)

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) This model is identical to the HR200-160 except it has a new wing section, ailerons and flaps, authorised propellers, enlarged rudder and keel, acrobatic category, revised weight and balance and miscellaneous technological improvements.
2) Flight Manual NZ-CAA Approved Flight Manual AIR 2702 (Serial numbers 001 to 378) (Refer to Section 13, note 9)
NZ-CAA Approved Flight Manual AIR 3001 (Serial numbers 160A-06001 and up)

SECTION 7: GENERAL, Basic Model R2100 Design

A. General

1.	a) Type: b) Variant:	R2100 Not Applicable
2.	Airworthiness Category:	Acrobatic and Utility Categories
3.	Type Certificate Holder:	Alpha Aviation Concept Ltd Hamilton NEW ZEALAND
4.	Manufacturer:	Alpha Aviation Manufacturing Ltd Hamilton NEW ZEALAND
5.	(reserved)	
6.	NZ-CAA Type Certification Date:	16-June-2006
7.	EASA Type Certification Date:	16-June-2006
8.	The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)	

B. Certification Basis

1.	Reference Application Date for determining the applicable requirements :	13-September-1970
2.	(Reserved)	
3.	(Reserved)	
4.	Certification Basis:	As defined in NZ-CAA TCDS A-15
5.	Airworthiness Requirements:	Refer to Section 13, Note 2
6.	Requirements elected to comply:	None
7.	EASA Special Conditions:	None
8.	EASA Exemptions:	None
9.	EASA Equivalent Safety Findings:	None
10.	EASA Environmental Standards :	CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1. (Reserved)

2. Description: Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.

3. Equipment: The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for airworthiness certification.
The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.

4. Dimensions: Refer to Airplane Flight Manual

5. Engines: Lycoming O-235-H2C
The EASA type certification standard includes that of FAA TC E-223, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

5.1 Engine Limits: For all operations 2600 rpm (108 HP)

6. Propellers and propeller limits: (1). McCauley: 1A 105/BCM-70-56

The EASA type certification standard includes that of FAA TC P-918, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

Maximum diameter : Not over 1.78m (70”)
Minimum diameter : Not under 1.70m (67”)
Number of blades : 2
Minimum Static RPM at sea level : 2300 RPM

(2). Hoffmann: HO-14-178/115 (Wheel & landing gear fairings and spinner are mandatory)

The EASA type certification standard includes that of LBA TC 32.110/001.

Maximum diameter : Not over 1.78m (70”)
Minimum diameter : Not under 1.73m (68”)
Number of blades : 2
Minimum Static RPM at sea level : 2300 RPM

7. Fluids:

7.1 Fuel: 80/87 minimum aviation grade gasoline
7.2 Oil: Refer to Airplane Flight Manual
7.3 Coolant: Not Applicable

8. Fluid capacities:

8.1	Fuel:	One structural tank Total capacity 120 litres (31.7 US gal) Total usable capacity 118 litres (31 US gal)
8.2	Oil:	Maximum: 5.7 litres (6 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	178.5 KIAS (331 km/h)
V_d	(Maximum design speed)	199 KIAS (370 km/h)
V_{NO}	(Maximum structural cruising speed)	127 KIAS (236 km/h)
V_A	(Manoeuvring speed)	127 KIAS (236 km/h)
V_{FE}	(Maximum Flap Extended)	97 KIAS (180 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Acrobatic and Utility Categories
Maximum Takeoff: 760 kgs (1675 lbs)
Maximum Landing: 760 kgs (1675 lbs)

13. Centre of Gravity Range:

Acrobatic category
(1) Forward Limit: 0.28 m aft of datum at 700 kgs (11” at 1543 lbs)
(2) Intermediate limit: 0.38 m aft of datum at 760 kg (15” at 1675 lbs)
(3) Aft Limit: 0.46 m aft of datum at 760 kg (18.1” at 1675 lbs)

Utility category
(1) Forward Limit: 0.28 m aft of datum at 700 kgs (11” at 1543 lbs)
(2) Intermediate limit: 0.38 m aft of datum at 760 kg (15” at 1675 lbs)
(3) Aft Limit: 0.48 m aft of datum at 760 kg (18.9” at 1675 lbs)

Straight line variation between points given.

14. Datum: Wing leading edge rib No. 5.

15. Design Limit Load Factors:

Acrobatic Category (760kg MAUW)

Flaps up	+6
	-3
Flaps down	+2
	0

Utility Category (760kg MAUW)

Flaps up	+4.4
	-1.8
Flaps down	+2
	0

16. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: Two at Station +0.46 m (+ 18.1")

19. Baggage / Cargo compartment: Maximum baggage compartment 35 kg at +1.21 m (+ 47.6"). None permitted for acrobatics

20. Wheels and Tires: Refer to Airplane Flight Manual

21. Control Surface movements:

Elevator:	Up	10°±0.5°
	Down	12.5°±0.5 °
Elevator up tab:	Up	33°±3°
	Down	5°±3°
Elevator down tab:	Up	14°±3°
	Down	22°±3°
Rudder relative to fin:	Right	30°±2°
	Left	30°±2°
Ailerons relative to wing:		
	Up	20°±1.5°
	Down	15°± 1.5°
Flaps relative to wing:	Up	0°
	Take-off	10°± 2°
	Landing	35°± 2°

22. Serial Numbers Eligible: 001 through 378 (Refer to Section 13, note 7)

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) This model is identical to the R2160 except it is fitted with a Lycoming O-235-H2C engine, acrobatic category, the spinner is replaced by a hub plate and no wheel or landing gear fairings if a McCauley 1A-105BCM 70-56 propeller is fitted. Nose Oleo strut pressure is 3 bar.
2) Flight Manual NZ-CAA Approved Flight Manual AIR 2967 (Refer to Section 13, note 9).

SECTION 8: GENERAL, Basic Model R2100A Design

A. General

1. a) Type: R2100A
   b) Variant: Not Applicable

2. Airworthiness Category: Acrobatic and Utility Category

3. Type Certificate Holder: Alpha Aviation Concept Ltd
   Hamilton
   NEW ZEALAND

4. Manufacturer: Alpha Aviation Manufacturing Ltd
   Hamilton
   NEW ZEALAND

5. (reserved)

6. NZ-CAA Type Certification Date: 16-June-2006

7. EASA Type Certification Date: 16-June-2006

8. The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)

B. Certification Basis

1. Reference Application Date for determining the applicable requirements : 13-September-1970

2. (Reserved)

3. (Reserved)

4. Certification Basis: As defined in NZ-CAA TCDS A-15

5. Airworthiness Requirements: Refer to Section 13, Note 2

6. Requirements elected to comply: None

7. EASA Special Conditions: None

8. EASA Exemptions: None

9. EASA Equivalent Safety Findings: None

10. EASA Environmental Standards : CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1. (Reserved)

2. Description: Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.

3. Equipment: The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for airworthiness certification.
The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.

4. Dimensions: Refer to Airplane Flight Manual

5. Engines: Lycoming O-235-H2C

The EASA type certification standard includes that of FAA TC E-223, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

5.1 Engine Limits: For all operations 2600 rpm (108 HP)

6. Propellers and propeller limits: (1). McCauley: 1A 105/BCM-70-56

The EASA type certification standard includes that of FAA TC P-918, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

Maximum diameter : Not over 1.78m (70")
Minimum diameter : Not under 1.70m (67")
Number of blades : 2
Minimum Static RPM at sea level : 2300 RPM

7. Fluids:

7.1	Fuel:	80/87 minimum aviation grade gasoline
7.2	Oil:	Refer to Airplane Flight Manual
7.3	Coolant:	Not Applicable

8. Fluid capacities:

8.1	Fuel:	One structural tank	
		Total capacity	120 litres (31.7 US gal)
		Total usable capacity	118 litres (31 US gal)
8.2	Oil:	Maximum:	5.7 litres (6 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	178.5 KIAS (331 km/h)
V_d	(Maximum design speed)	199 KIAS (370 km/h)
V_{NO}	(Maximum structural cruising speed)	127 KIAS (236 km/h)
V_A	(Manoeuvring speed)	127 KIAS (236 km/h)
V_{FE}	(Maximum Flap Extended)	97 KIAS (180 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Acrobatic and Utility Category
Maximum Takeoff: 775 kgs (1708 lbs)
Maximum Landing: 775 kgs (1708 lbs)

13. Centre of Gravity Range:

Acrobatic category
(1) Forward Limit: 0.28 m aft of datum at 700 kgs (11" at 1543 lbs)
(2) Intermediate limit: 0.38 m aft of datum at 775 kg (15" at 1708 lbs)
(3) Aft Limit: 0.46 m aft of datum at 775 kg (18.1" at 1708 lbs)

Utility category
(1) Forward Limit: 0.28 m aft of datum at 700 kgs (11" at 1543 lbs)
(2) Intermediate limit: 0.38 m aft of datum at 775 kg (15" at 1708 lbs)
(3) Aft Limit: 0.48 m aft of datum at 775 kg (18.9" at 1708 lbs)

Straight line variation between points given.

14. Datum: Wing leading edge rib No. 5.

15. Design Limit Load Factors:

Aerobatic Category (775kg MAUW)

Flaps up	+6
	-3
Flaps down	+2
	0

Utility Category (775kg MAUW)

Flaps up	+4.4
	-1.8
Flaps down	+2
	0

16. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: Two at Station +0.46 m (+ 18.1")

19. Baggage / Cargo compartment: Maximum baggage compartment 35 kg at +1.21 m (+ 47.6"). None permitted for acrobatics.

20. Wheels and Tires: Refer to Airplane Flight Manual

21. Control Surface movements:

Elevator:	Up	10°±0.5°
	Down	12.5°±0.5 °
Elevator up tab:	Up	33°±3°
	Down	5°±3°
Elevator down tab:	Up	14°±3°
	Down	22°±3°
Rudder relative to fin:	Right	30°±2°
	Left	30°±2°
Ailerons relative to wing:	Up	20°±1.5°
	Down	15°± 1.5°
Flaps relative to wing:	Up	0°
	Take-off	10°± 2°
	Landing	35°± 2°

22. Serial Numbers Eligible: 001 through 378 (Refer to Section 13, note 7)

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) This model is identical to the R2100 except for authorized propellers, increased weight, mandatory wheel and landing gears fairings, mandatory spinner.
2) Flight Manual NZ-CAA Approved Flight Manual AIR 2968 (Refer to section 13, note 9)

SECTION 9: GENERAL, Basic Model R2160D Design

A. General

1.	a) Type: b) Variant:	R2160D Not Applicable
2.	Airworthiness Category:	Acrobatic and Utility Category
3.	Type Certificate Holder:	Alpha Aviation Concept Ltd Hamilton NEW ZEALAND
4.	Manufacturer:	Alpha Aviation Manufacturing Ltd Hamilton NEW ZEALAND
5.	(reserved)	
6.	NZ-CAA Type Certification Date:	16-June-2006
7.	EASA Type Certification Date:	16-June-2006
8.	The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)	

B. Certification Basis

1.	Reference Application Date for determining the applicable requirements :	13-September-1970
2.	(Reserved)	
3.	(Reserved)	
4.	Certification Basis:	As defined in NZ-CAA TCDS A-15
5.	Airworthiness Requirements:	Refer to Section 13, Note 2
6.	Requirements elected to comply:	None
7.	EASA Special Conditions:	None
8.	EASA Exemptions:	None
9.	EASA Equivalent Safety Findings:	None
10.	EASA Environmental Standards :	CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1.	(Reserved)	
2.	Description:	Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.
3.	Equipment:	The basic required equipment as prescribed in the applicable airworthiness regulations (see certification

basis) must be installed in the aircraft for airworthiness certification.
The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.

4. Dimensions: Refer to Airplane Flight Manual

5. Engines: Lycoming O-320-D

The EASA type certification standard includes that of FAA TC E-274, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

5.1 Engine Limits: For all operations 2600 rpm (108 HP)
Limitation of 2600 rpm to meet German noise abatement regulations, not airworthiness requirements.

6. Propellers and propeller limits: (1). Sensenich: 74DM-6S5-2-66 or 74DM-6S5-2-64

The EASA type certification standard includes that of FAA TC P-886, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

Maximum diameter : Not over 1.83m (72”)
No reduction permitted
Number of blades : 2
Minimum Static RPM at sea level : 2150 RPM

7. Fluids:

7.1 Fuel: 100LL minimum aviation grade gasoline
7.2 Oil: Refer to Airplane Flight Manual
7.3 Coolant: Not Applicable

8. Fluid capacities:

8.1 Fuel: One structural tank
Total capacity 120 litres (31.7 US gal)
Total usable capacity 118 litres (31 US gal)

8.2 Oil: Maximum: 7.5 litres (8 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	178.5 KIAS (331 km/h)
V_d	(Maximum design speed)	199 KIAS (370 km/h)

V_{NO}	(Maximum structural cruising speed)	127 KIAS (236 km/h)
V_A	(Manoeuvring speed)	127 KIAS (236 km/h)
V_{FE}	(Maximum Flap Extended)	97 KIAS (180 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Acrobatic Category
Maximum Takeoff: 800 kgs (1764 lbs)
Maximum Landing: 800 kgs (1764 lbs)
Utility Category
Maximum Takeoff: 900 kgs (1984 lbs)
Maximum Landing: 900 kgs (1984 lbs)

13. Centre of Gravity Range:

Acrobatic category
(1) Forward Limit: 0.23 m aft of datum at 700 kgs (9.1" at 1543 lbs)
(2) Intermediate limit: 0.33 m aft of datum at 800 kg (13" at 1764 lbs)
(3) Aft Limit: 0.42 m aft of datum at 800 kg (16.5" at 1764 lbs)

Utility category
(1) Forward Limit: 0.23 m aft of datum at 700 kgs (9.1" at 1543 lbs)
(2) Intermediate limit: 0.33 m aft of datum at 900 kg (13" at 1984 lbs)
(3) Aft Limit: 0.48 m aft of datum at 900 kg (18.9" at 1984 lbs)

Straight line variation between points given.

14. Datum: Wing leading edge rib No. 5.

15. Design Limit Load Factors:

Aerobatic Category (800kg MAUW)
Flaps up +6
-3
Flaps down +2
0

Utility Category (900kg MAUW)
Flaps up +4.4
-1.8
Flaps down +2
0

16. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: Two at Station +0.46 m (+ 18.1")

19. Baggage / Cargo compartment: Maximum baggage compartment 35 kg at +1.21 m (+ 47.6"). None permitted for aerobatics

20. Wheels and Tires: Refer to Airplane Flight Manual

21. Control Surface movements: Elevator: Up 10°±0.5°
Down 12.5°±0.5 °

Elevator up tab:	Up	33°±3°
	Down	5°±3°
Elevator down tab:	Up	14°±3°
	Down	22°±3°
Rudder relative to fin:	Right	30°±2°
	Left	30°±2°
Ailerons relative to wing:	Up	20°±1.5°
	Down	15°± 1.5°
Flaps relative to wing:	Up	0°
	Take-off	10°± 2°
	Landing	35°± 2°

22. Serial Numbers Eligible: 001 through 378 (Refer to Section 13, note 7)

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) This model is identical to the R2160 except maximum engine speed is limited to 2600RPM to meet noise abatement regulations in Germany.
2) Flight Manual NZ-CAA Approved Flight Manual AIR 2973 (Refer to section 13, note 9).

SECTION 10: GENERAL, Basic Model R2112 Design

A. General

1. a) Type: R2112
   b) Variant: Not Applicable
2. Airworthiness Category: Acrobatic and Utility Category
3. Type Certificate Holder: Alpha Aviation Concept Ltd
   Hamilton
   NEW ZEALAND
4. Manufacturer: Alpha Aviation Manufacturing Ltd
   Hamilton
   NEW ZEALAND
5. (reserved)
6. NZ-CAA Type Certification Date: 16-June-2006
7. EASA Type Certification Date: 16-June-2006
8. The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)

B. Certification Basis

1. Reference Application Date for determining the applicable requirements : 13-September-1970
2. (Reserved)

3. (Reserved)

4. Certification Basis: As defined in NZ-CAA TCDS A-15

5. Airworthiness Requirements: Refer to Section 13, Note 2

6. Requirements elected to comply: None

7. EASA Special Conditions: None

8. EASA Exemptions: None

9. EASA Equivalent Safety Findings: None

10. EASA Environmental Standards : CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1. (Reserved)

2. Description: Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.

3. Equipment: The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for airworthiness certification.
The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.

4. Dimensions: Refer to Airplane Flight Manual

5. Engines: Lycoming O-235-L2A or –L2C

The EASA type certification standard includes that of FAA TC E-223, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

5.1 Engine Limits: For all operations 2600 rpm (112 HP)

6. Propellers and propeller limits: (1). Sensenich: 72CKS6-052 or 72CKS6-056

The EASA type certification standard includes that of FAA TC 1P2, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

Maximum diameter : Not over 1.83m (72”)
Minimum diameter : Not under 1.78m (70”)

Number of blades : 2
Minimum Static RPM at sea level : 2350 RPM (-052)
2250 RPM (-056)

7. Fluids:

7.1	Fuel:	100LL minimum aviation grade gasoline
7.2	Oil:	Refer to Airplane Flight Manual
7.3	Coolant:	Not Applicable

8. Fluid capacities:

8.1	Fuel:	One structural tank	
		Total capacity	120 litres (31.7 US gal)
		Total usable capacity	118 litres (31 US gal)
8.2	Oil:	Maximum:	5.7 litres (6 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	156.5 KIAS (290 km/h)
V_d	(Maximum design speed)	173.8 KIAS (322 km/h)
V_{NO}	(Maximum structural cruising speed)	127 KIAS (236 km/h)
V_A	(Manoeuvring speed)	127 KIAS (236 km/h)
V_{FE}	(Maximum Flap Extended)	97 KIAS (180 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Acrobatic and Utility Category
Maximum Takeoff: 800 kgs (1764 lbs)
Maximum Landing: 800 kgs (1764 lbs)

13. Centre of Gravity Range:

Acrobatic category
(1) Forward Limit: 0.28 m aft of datum at 700 kgs (11” at 1543 lbs)
(2) Intermediate limit: 0.38 m aft of datum at 800 kg (15” at 1764 lbs)
(3) Aft Limit: 0.46 m aft of datum at 800 kg (18.1” at 1764 lbs)

Utility category
(1) Forward Limit: 0.28 m aft of datum at 700 kgs (9.1” at 1543 lbs)
(2) Intermediate limit: 0.38 m aft of datum at 800 kg (15” at 1764 lbs)
(3) Aft Limit: 0.48 m aft of datum at 800 kg (18.9” at 1764 lbs)

Straight line variation between points given.

14. Datum: Wing leading edge rib No. 5.

15. Design Limit Load Factors:

Aerobatic Category (800kg MAUW)
Flaps up +6
-3
Flaps down +2

0

Utility Category (800kg MAUW)
Flaps up +4.4
-1.8
Flaps down +2
0

16. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity: Two at Station +0.46 m (+ 18.1")

19. Baggage / Cargo compartment: Maximum baggage compartment 35 kg at +1.21 m (+ 47.6"). None permitted for acrobatics

20. Wheels and Tires: Refer to Airplane Flight Manual

21. Control Surface movements:

Elevator:	Up	10°±0.5°
	Down	12.5°±0.5 °
Elevator up tab:	Up	33°±3°
	Down	5°±3°
Elevator down tab:	Up	14°±3°
	Down	22°±3°
Rudder relative to fin:	Right	30°±2°
	Left	30°±2°
Ailerons relative to wing:	Up	20°±1.5°
	Down	15°± 1.5°
Flaps relative to wing:	Up	0°
	Take-off	10°± 2°
	Landing	35°± 2°

22. Serial Numbers Eligible: 001 through 378 (Refer to Section 13, note 7)

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) This model is identical to the R2100 except it is fitted with a Lycoming O-235-L engine, authorized propellers, increased weight, revised air intake system.
2) Flight Manual NZ-CAA Approved Flight Manual AIR 2969 (Refer to section 13, note 9)

SECTION 11: GENERAL, Basic Model R2160i Design

A. General

1. a) Type: R2160i
   b) Variant: Not Applicable

2. Airworthiness Category: Acrobatic and Utility Category

3.	Type Certificate Holder:	Alpha Aviation Concept Ltd Hamilton NEW ZEALAND
4.	Manufacturer:	Alpha Aviation Manufacturing Ltd Hamilton NEW ZEALAND
5.	(reserved)	
6.	NZ-CAA Type Certification Date:	16-June-2006
7.	EASA Type Certification Date:	16-June-2006

8. The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)

B. Certification Basis

1.	Reference Application Date for determining the applicable requirements :	13-September-1970
2.	(Reserved)	
3.	(Reserved)	
4.	Certification Basis:	As defined in NZ-CAA TCDS A-15
5.	Airworthiness Requirements:	Refer to Section 13, Note 2
6.	Requirements elected to comply:	None
7.	EASA Special Conditions:	None
8.	EASA Exemptions:	None
9.	EASA Equivalent Safety Findings:	None
10.	EASA Environmental Standards :	CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1.	Type Design Definition:	AAD Drawing No 61-00-001 (Serial numbers 160Ai-07007 and up).
2.	Description:	Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.
3.	Equipment:	The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for airworthiness certification. The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.
4.	Dimensions:	Refer to Airplane Flight Manual

5. Engines: Lycoming AEIO-320-D2B

The EASA type certification standard includes that of FAA TC 1E12, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

5.1 Engine Limits: For all operations 2700 rpm (160 HP)

6. Propellers and propeller limits: Sensenich: 74DM-7S5-2-66 (serial numbers 001 to 378) or 74DM-7S5-2-64 (all serial numbers)

The EASA type certification standard includes that of FAA TC P-886, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.

Maximum diameter : Not over 1.83m (72")
No reduction permitted
Number of blades : 2
Minimum Static RPM at sea level : 2150 RPM

7. Fluids:

7.1 Fuel: 100LL minimum aviation grade gasoline
7.2 Oil: Refer to Airplane Flight Manual
7.3 Coolant: Not Applicable

8. Fluid capacities:

8.1 Fuel: One structural tank
Standard s/n 001 to 378:
Total capacity 120 litres (31.7 US gal)
Total usable capacity 118 litres (31 US gal)

Optional s/n 001 to 378; standard for s/n 160Ai-07007 and up:
Total capacity 160 litres (42.2 US gal)
Total usable capacity 158 litres (41.7 US gal)

8.2 Oil: Maximum: 7.5. litres (8 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	178.5 KIAS (331 km/h)
V_d	(Maximum design speed)	199 KIAS (370 km/h)
V_{NO}	(Maximum structural cruising speed)	127 KIAS (236 km/h)
V_A	(Manoeuvring speed)	127 KIAS (236 km/h)
V_{FE}	(Maximum Flap Extended)	97 KIAS (180 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Acrobatic Category
Maximum Takeoff: 800 kgs (1764 lbs)
Maximum Landing: 800 kgs (1764 lbs)

Utility Category
Maximum Takeoff: 900 kgs (1984 lbs)
Maximum Landing: 900 kgs (1984 lbs)

23. Centre of Gravity Range:

Acrobatic category
(1) Forward Limit: 0.23 m aft of datum at 700 kgs (9.1" at 1543 lbs)
(2) Intermediate limit: 0.33 m aft of datum at 800 kg (13" at 1764 lbs)
(3) Aft Limit: 0.42 m aft of datum at 800 kg (16.5" at 1764 lbs)

Utility category
(1) Forward Limit: 0.23 m aft of datum at 700 kgs (9.1" at 1543 lbs)
(2) Intermediate limit: 0.33 m aft of datum at 900 kg (13" at 1984 lbs)
(3) Aft Limit: 0.48 m aft of datum at 900 kg (18.9" at 1984 lbs)

Straight line variation between points given.

24. Datum: Wing leading edge rib No. 5.

25. Design Limit Load Factors:

Aerobatic Category (800kg MAUW)

Flaps up	+6
	-3
Flaps down	+2
	0

Utility Category (900kg MAUW)

Flaps up	+4.4
	-1.8
Flaps down	+2
	0

26. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

27. Minimum Flight Crew: 1 (Pilot)

28. Maximum Passenger Seating Capacity: Two at Station +0.46 m (+ 18.1")

29. Baggage / Cargo compartment: Maximum baggage compartment 35 kg at +1.21 m (+ 47.6"). None permitted for acrobatics

30. Wheels and Tires: Refer to Airplane Flight Manual

31. Control Surface movements:

Elevator:	Up	10°±0.5°
	Down	12.5°±0.5 °
Elevator up tab:	Up	33°±3°
	Down	5°±3°
Elevator down tab:	Up	14°±3°

	Down	22°±3°
Rudder relative to fin:	Right	30°±2°
	Left	30°±2°
Ailerons relative to wing:	Up	20°±1.5°
	Down	15°± 1.5°
Flaps relative to wing:	Up	0°
	Take-off	10°± 2°
	Landing	35°± 2°

13. Serial Numbers Eligible: 001 through 378 (Refer to Section 13, Note 7 and 8)
160Ai-07007 and up (Refer to Section 13, Note 4)

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) This model is identical to the R2160 except it is fitted with a Lycoming AEIO-230-D2B engine, inverted fuel and oil systems.

2) Flight Manual NZ-CAA Approved Flight Manual AIR 2846 (Serial numbers 001 to 378; refer to Section 13, note 9)

3) Flight Manual NZ-CAA Approved Flight Manual AIR 3002 (Serial numbers 160Ai-07007 and up)

SECTION 12: GENERAL, Basic Model R2120U Design

A. General

1. a) Type: R2120U
   b) Variant: Not Applicable

2. Airworthiness Category: Utility Category

3. Type Certificate Holder: Alpha Aviation Concept Ltd
   Hamilton
   NEW ZEALAND

4. Manufacturer: Alpha Aviation Manufacturing Ltd
   Hamilton
   NEW ZEALAND

5. (reserved)

6. NZ-CAA Type Certification Date: 16-June-2006

7. EASA Type Certification Date: 16-June-2006

8. The EASA Type Certificate replaces DGAC-France Type Certificate No.70 (refer to Section 13, Note 1)

B. Certification Basis

1.	Reference Application Date for determining the applicable requirements :	13-September-1970
2.	(Reserved)	
3.	(Reserved)	
4.	Certification Basis:	As defined in NZ-CAA TCDS A-15
5.	Airworthiness Requirements:	Refer to Section 13, Note 2
6.	Requirements elected to comply:	None
7.	EASA Special Conditions:	None
8.	EASA Exemptions:	None
9.	EASA Equivalent Safety Findings:	None
10.	EASA Environmental Standards :	CS 36 (ICAO Annex 16, volume I, as applicable)

C. Technical Characteristics and Operational Limitations

1.	(Reserved)	
2.	Description:	Single-engine, all-metal, two-place, low-wing airplane, conventional tail, fixed tricycle landing gear.
3.	Equipment:	The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for airworthiness certification. The applicable NZ-CAA approved Flight Manual is required for all operations. Included within the Flight Manual is information in the form of supplements which cover installation of optional systems and equipment that are necessary for safe operation of the aircraft.
4.	Dimensions:	Refer to Airplane Flight Manual
5.	Engines:	Lycoming O-235-L2A The EASA type certification standard includes that of FAA TC E-223, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU member state prior to 28 September 2003 are also acceptable.
5.1	Engine Limits:	For all operations 2800 rpm (118 HP)
6.	Propellers and propeller limits:	(1). Sensenich: 72CKS6-054 The EASA type certification standard includes that of FAA TC 1P2, based on individual EU member state acceptance or certification of this standard prior to 28 September 2003. Other standards confirming to TC/TCDS standards certificated by individual EU

member state prior to 28 September 2003 are also acceptable.

Maximum diameter : Not over 1.83m (73")
No reduction permitted
Number of blades : 2
Minimum Static RPM at sea level : 2300 RPM

7. Fluids:

7.1	Fuel:	100LL minimum aviation grade gasoline
7.2	Oil:	Refer to Airplane Flight Manual
7.3	Coolant:	Not Applicable

8. Fluid capacities:

8.1	Fuel:	One structural tank	
		Total capacity	120 litres (31.7 US gal)
		Total usable capacity	118 litres (31 US gal)
8.2	Oil:	Maximum:	5.7 litres (6 US qts).

9. Air Speeds:

V_{NE}	(Never Exceed speed)	156.5 KIAS (290 km/h)
V_d	(Maximum design speed)	173.8 KIAS (322 km/h)
V_{NO}	(Maximum structural cruising speed)	127 KIAS (236 km/h)
V_A	(Manoeuvring speed)	127 KIAS (236 km/h)
V_{FE}	(Maximum Flap Extended)	97 KIAS (180 km/h)

10. Maximum Operating Altitude: Refer to Airplane Flight Manual

11. Operational Capability: Day & night VFR (Refer to Section 13, Note 3)

12. Maximum Masses:

Utility Category
Maximum Takeoff: 800 kgs (1764 lbs)
Maximum Landing: 800 kgs (1764 lbs)

13. Centre of Gravity Range:

Utility category
(1) Forward Limit: 0.28 m aft of datum at 700 kgs (11" at 1543 lbs)
(2) Intermediate limit: 0.38 m aft of datum at 800 kg (15" at 1764 lbs)
(3) Aft Limit: 0.44 m aft of datum at 800 kg (17.3" at 1764 lbs)

Straight line variation between points given.

14. Datum: Wing leading edge rib No. 5.

15. Design Limit Load Factors:

Flaps up	+4.4
	-1.8
Flaps down	+2
	-0

16. Levelling Means: Fuselage upper longeron (longitudinal) and seat back frame (lateral).

17. Minimum Flight Crew: 1 (Pilot)

18. Maximum Passenger Seating Capacity:	Two at Station +0.46 m (+ 18.1")		
19. Baggage / Cargo compartment:	Maximum baggage compartment 35 kg at +1.21 m (+ 47.6").		
20. Wheels and Tires:	Refer to Airplane Flight Manual		
21. Control Surface movements:	Elevator:	Up	10°±0.5°
		Down	12.5°±0.5 °
	Elevator up tab:	Up	33°±3°
		Down	5°±3°
	Elevator down tab:	Up	14°±3°
		Down	22°±3°
	Rudder relative to fin:	Right	30°±2°
		Left	30°±2°
	Ailerons relative to wing:	Up	20°±1.5°
		Down	15°± 1.5°
	Flaps relative to wing:	Up	0°
		Take-off	10°± 2°
		Landing	35°± 2°
22. Serial Numbers Eligible:	001 through 378 (Refer to Section 13, note 7)		

D. Operating and Service Instructions

Refer to Section 13, note 5.

E. Notes

1) This model is identical to the R2112 except Utility category only, small rudder and no keel, Lycoming O-235-L2A, propeller authorizations, no wheel or landing gear fairings, Aft C of G limited to 28% MAC..
2) Flight Manual NZ-CAA Approved Flight Manual AIR 2748 (Refer to Section 13, note 9)

SECTION 13: NOTES

Note 1: NZ-CAA Type Certificate A-15 is issued on the basis of DGAC-France Type Certificate No 70 which has been transferred to New Zealand. Aircraft up to serial number 378 were produced under DGAC-France Type Certificate No 70 by Apex Aviation Ltd or their predecessor companies. A number of R2160 model aircraft were assembled in Canada by Avions Pierre Robin Inc under Canadian Type Certificate A-125 and are covered by the NZ-CAA Type Certificate A-15.

Note 2: Aircraft manufactured prior to June 2006:

Federal Aviation Regulations Part 23 dated 1 February 1965 as amended by amendment 23-1 through 23-9 dated 17 June 1970.
Supplementary technical requirements from AIR 2052A paragraphs 3.397 and 3.399.
Special technical requirement: "Forward sliding canopy must be jettisonable".

Aircraft manufactured after June 2006:

i) For the basic aircraft:

Federal Aviation Regulations Part 23 dated 1 February 1965 as amended by amendment 23-1 through 23-9 dated 17 June 1970.
United States Federal Aviation Regulations Part 36 dated 1 December 1969 as amended by amendment 36-1 through 36-9 dated 3 April 1978.
Supplementary technical requirements from AIR 2052A paragraphs 3.397 and 3.399.
Special technical requirement: "Forward sliding canopy must be jettisonable".

ii) For models approved after June 2006, and significant major design changes approved after June 2006:
United States Federal Aviation Regulations Part 23 dated 1 February 1965 as amended by amendment 23-1 through 23-55 dated 1 March 2002.
United States Federal Aviation Regulations Part 36 dated 1 December 1969 as amended by amendment 36-1 through 34-24 dated 7 August 2002.
Supplementary technical requirements from AIR 2052A paragraphs 3.397 and 3.399.
Special technical requirement: "Forward sliding canopy must be jettisonable".

Note 3: (a) Placards and instrument markings must be displayed in accordance with the applicable NZ-CAA approved Flight Manual including relevant supplements.
(b) Each aircraft must have a placard in clear view of the pilot that specifies the kind of operations such as VFR DAY or VFR NIGHT, to which the operation of the aircraft is limited by the equipment installed, and also that flight in known icing conditions is prohibited.

Note 4: The serial number issued by Alpha Aviation Manufacturing Ltd has the following format:

xxx-xxxxx

The first sequence defines the Model.

160A = R2160

160Ai = R2160i

The second sequence of five numbers describes the production year (first 2 digits) and the production serial number (final three digits) which is sequential regardless of model.

Note 5: Instructions for continuing airworthiness of the aircraft are contained in:

<u>Aircraft manufactured prior to June 2006</u>:

HR200 series aircraft: Alpha Aviation HR200 Service Manual s/n 001 to 378.

R2000 series aircraft: Alpha Aviation R2000 Service Manual s/n 001 to 378

<u>Aircraft manufactured after June 2006</u>:

Alpha Aviation Service Manual for the R2000 series s/n 160A-06001 and up. Service Life limits of components are given in Section 3, Time Limits & Maintenance Instructions.

Note 6: Current weight and balance report, including list of equipment included in certified empty weight must be provided for each aircraft at the time of original airworthiness certification and at all times thereafter. Loading instructions are included in the applicable NZ-CAA approved Flight Manual.

Note 7 : Serial Numbers issued by the French manufacturer (including Canadian assembled examples) were sequential regardless of model.

Note 8 : Aircraft assembled in Canada may have a C in front of the basic serial number.

Note 9 : Aircraft registered in France may continue to use the applicable French language Flight Manual specified in Apex Aircraft Service Letter No 6 Revision 18 dated March 2006.

SECTION 14: Reserved

SECTION 15: Change Record

Issue 1 16 June 2006: Initial issue on transfer of this series to New Zealand

Issue 2 5 April 2007: Addition of reference to NZ production serial numbers for R2160i and configuration, where these differ from French production:

Propeller
Fuel capacity
Flight manual
Drawing list
Serial number eligibility
Serial numbering protocol

Issue 3 12 Oct 2007 Editorial corrections

Issue 4 5 March 2010. Change in name of TC holder from Alpha Aviation D3signs Ltd to Alpha Aviation Concepts Ltd.