

No	VA502
Revision	2
Aircraft	SB7L-235 SB7L-360 SB7L-360A

Date	19 February 2007
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TYPE CERTIFICATE DATA SHEET

This data sheet, which is part of Type Certificate No. VA502, lists the conditions and operational limitations under which the aircraft for which the Type Certificate was issued meets the airworthiness requirements of the Civil Aviation Safety Authority.

Certificate Holder

Seabird Aviation Australia Pty Ltd
Hervey Bay Airport
PO Box 618
Pialba, Qld 4655
Australia

Model SB7L-235

Utility Category - approved 12 March 1993.

Engine

Textron Lycoming O-235-N2C.

Engine Limits

Maximum take-off -	2700 rpm.
Maximum continuous-	2500 rpm @ 25" MAP. (Cruise noise limit).

Fuel

100LL or 100/130 minimum grade aviation gasoline.

Oil

As specified in the latest revision of Textron Lycoming Service Instruction No. 1014.

Propeller

MT-Propeller model MTV-7-F/LD 165-03.
Diameter 1650 mm (no cut off allowed).
Pitch Settings at the 560 mm station.
High pitch - $24^{\circ} \pm 1^{\circ}$.
Low pitch - $12^{\circ} \pm 0.2^{\circ}$.

Fine Pitch Limit Contacts

Set fine pitch to give 2590 rpm \pm 10 rpm at full throttle static with the propeller on the fine pitch stop.

Propeller Restricted Range

2300 rpm to 2500 rpm.

		(KIAS)	(KCAS)
Air Speed Limits (knots)	Never exceed (Vne)	147	144
	Manoeuvring (Va)	117	115
	Max structural cruise (Vno)	110	108
	Max flaps extended (Vfe)	95	93
Centre of Gravity	Forward Limit:	2251 mm aft of datum at all weights.	
	Aft Limit:	2384 aft of datum at all weights.	
Datum	2043 mm forward of the wing leading edge at butt line 2122 mm.		
Levelling Means	Plumb bob from drilled bolt in cockpit overhead bow to centre mark on the forward undercarriage bay cross member.		
Maximum Weight	Take Off	754 kg.	
	Landing	754 kg.	
Minimum Crew	1 Pilot.		
Number of Seats	2.		
	Pilot seat arm	seat forward:	1286 mm aft of datum.
		seat aft:	1446 mm aft of datum.
	Passenger seat arm	seat forward:	1286 mm aft of datum.
		seat aft:	1646 mm aft of datum.
	Total load front seats	Minimum:	65 kg.
Maximum:		180 kg.	
Maximum load – full fuel:		77.1 kg.	
Maximum Baggage	45 kg at 2312 mm aft of datum.		
Fuel Capacity	Total	148 litres (2 x 74 litre tanks at 2312 mean fuel arm).	
	Usable	136 litres.	
	Refer to the flight manual for fuel distribution weight and balance data.		
Oil Capacity	5.6 litres.		
Control Surface Deflections	Aileron	Up	112 mm ± 5 mm at the trailing edge.
		Down	74 mm ± 5mm at the trailing edge.
	Elevator	Up	160 mm ± 5mm at the trailing edge.
		Down	83 mm ± at the trailing edge.

Elevator fixed tabs	Trailing edge of tabs 40 to 50 mm below plane of elevator upper surface.										
Rudder	Left and Right 170 mm \pm 5 mm at the trailing edge.										
Wing flaps	Retracted 0° \pm 1°										
	First Notch 20° \pm 1°										
	Full 40° \pm 1°										
Operating Altitude	Maximum 10,000 feet AMSL.										
Crosswind Component	Maximum for take-off and landing - 10 knots.										
Manoeuvres permitted	Non aerobatic manoeuvres as for normal flight including stalls (except whip stalls), chandelles, lazy eights and steep turns (angle of bank < 60°).										
	<table> <tr> <th>MANOEUVRE</th><th>ENTRY SPEED</th></tr> <tr> <td>Stalls</td><td>Slow deceleration.</td></tr> <tr> <td>Chandelles</td><td>105 KIAS.</td></tr> <tr> <td>Lazy eights</td><td>105 KIAS.</td></tr> <tr> <td>Steep turns</td><td>75 – 80 KIAS.</td></tr> </table>	MANOEUVRE	ENTRY SPEED	Stalls	Slow deceleration.	Chandelles	105 KIAS.	Lazy eights	105 KIAS.	Steep turns	75 – 80 KIAS.
MANOEUVRE	ENTRY SPEED										
Stalls	Slow deceleration.										
Chandelles	105 KIAS.										
Lazy eights	105 KIAS.										
Steep turns	75 – 80 KIAS.										
	Aerobatic manoeuvres, including intentional spins, are prohibited.										
Types of Operations	VFR by day. Flight into known or forecast icing conditions is prohibited.										
Required Placards	Refer to the approved flight manual.										
Certification Basis	Civil Aviation Order 101.22, Issue 4, dated 1 May 1981 up to and including Amendment 72 and FAR 23 up to and including Amendment 34.										
Serial Numbers Eligible	No aircraft of this model have been produced. Future production will require approval from CASA.										
<u>Model SB7L-360 (Seeker)</u>	Restricted Category - approved 12 March 1999.										
Engine	Textron Lycoming O-360-B2C.										
Engine Limits	Maximum take-off 2500 rpm (No time limit).										

Fuel	80/87 minimum grade aviation gasoline. Unleaded automotive gasoline.		
Oil	As specified in the latest revision of Textron Lycoming Service Instruction No. 1014.		
Propeller	Seabird Aviation, wooden, 2 blade fixed pitch, pusher. Model: BB177. Diameter: 1770 mm. Pitch: 1350 mm at 750 mm radius. Static rpm at full throttle: Maximum: 2300 rpm. Minimum: 2200 rpm.		
Air Speed Limits (knots)		(KIAS)	(KCAS)
	Never exceed (Vne)	133	129
	Manoeuvring (Va)	105	105
	Max structural cruise (Vno)	105	105
	Max flaps extended (Vfe)	95	93
Centre of Gravity	Forward Limit: 2251 mm aft of datum at all weights. Aft Limit: 2384 aft of datum at 800 kg or less. 2362 aft of datum at 897 kg. Variation is linear between 800 kg and 897 kg.		
Datum	2043 mm forward of the wing leading edge at butt line 2122 mm.		
Levelling Means	Plumb bob from drilled bolt in cockpit overhead bow to centre mark on the forward undercarriage bay cross member.		
Maximum Weight	Take Off 897 kg. Landing 897 kg.		
Minimum Crew	1 Pilot.		
Number of Seats	2. Pilot seat arms seat forward: 1286 mm aft of datum. seat aft: 1446 mm aft of datum. Passenger seat arm seat forward: 1286 mm aft of datum. seat aft: 1646 mm aft of datum.		

Maximum Baggage	45 kg at 2090 mm aft of datum.		
Fuel Capacity	Total	184 litres (2 x 92 litre tanks at 2312 mean fuel arm).	
	Usable	172 litres.	
	Refer to the flight manual for fuel distribution weight and balance data.		
Oil Capacity	7.5 litres.		
Control Surface Deflections	Aileron	Up	112 mm ± 5 mm at the trailing edge.
		Down	74 mm ± 5mm at the trailing edge.
	Elevator	Up	160 mm ± 5mm at the trailing edge.
		Down	83 mm ± at the trailing edge.
	Elevator fixed tabs		Trailing edge of tabs 40 to 50 mm below plane of elevator upper surface.
	Rudder		Left and Right 170 mm ± 5 mm at the trailing edge.
	Wing flaps	Retracted	0° ± 1°
First Notch		20° ± 1°	
Full		40° ± 1°	
Operating Altitude	Maximum 15,000 feet AMSL.		
Crosswind Component	Maximum for take-off and landing - 12 knots.		
Types of Operation	VFR (day and night). Flight into known icing conditions is prohibited.		
Manoeuvres Permitted	Non aerobatic manoeuvres as for normal flight including stalls (except whip stalls), chandelles, lazy eights and steep turns (angle of bank < 60°).		
	MANOEUVRE	ENTRY SPEED	
	Stalls	Slow deceleration	
	Chandelles	105 KIAS	
	Lazy eights	105 KIAS	
	Steep turns	75 – 80 KIAS.	

Aerobatic manoeuvres, including intentional spins, are prohibited.

Purpose of Operation	Operations are restricted to the following special purposes: (a) forest and wildlife conservation; (b) Aerial surveying and scientific research, eg. photography, mapping, oil and mineral exploration; (c) Patrolling, eg. pipelines, power lines and canals; (d) Forest fire surveillance; and (e) Operations authorised in Regulation 262AL of the Civil Aviation Regulations 1988.
Required Placards	Refer to the approved flight manual.
Certification Basis	Civil Aviation Safety Regulations (1998) 21.17 and 21.25. This aircraft meets the certification basis for the model SB7L-360A except that sections of the aircraft S/No 92005 do not conform to the type design for the SB7L-360A (see Note 3).
Serial Numbers Eligible	92005 only.
Production Basis	CAA Certificate of Approval 3252 dated 3 February 1994.
Noise Certification	Compliance with ICAO Chapter 10 and FAR 36 Appendix G has been shown.

Model SB7L-360A (Seeker) Normal Category - approved 24 January 1994.

Engine	Textron Lycoming O-360-B2C.
Engine Limits	Maximum take-off 2500 rpm (No time limit).
Fuel	80/87 minimum grade aviation gasoline. Unleaded automotive gasoline.
Oil	As specified in the latest revision of Textron Lycoming Service Instruction No. 1014.
Propeller	Seabird Aviation, wooden, 2 blade fixed pitch, pusher. Model: BB177. Diameter: 1770 mm. Pitch: 1350 mm at 750 mm radius. or

Hoffman GmbH, wooden 2 blade fixed pitch pusher.

Model: HO44HM-177 138LD.

Diameter: 1770 mm.

Pitch: 1380 mm.

Static rpm at full throttle (both propellers):

Maximum: 2300 rpm.

Minimum: 2200 rpm.

		(KIAS)	(KCAS)
Air Speed Limits (knots)	Never exceed (Vne)	134	133
	Manoeuvring (Va)	107	105
	Max structural cruise (Vno)	107	105
	Max flaps extended (Vfe)	95	93
Centre of Gravity	Forward Limit:	2251 mm aft of datum at all weights.	
	Aft Limit:	2384 aft of datum at 800 kg or less.	
		2362 aft of datum at 925 kg.	
		Variation is linear between 800 kg and 925 kg	
Datum	2043 mm forward of the wing leading edge at butt line 2122 mm.		
Levelling Means	Plumb bob from drilled bolt in cockpit overhead bow to centre mark on the forward undercarriage bay cross member.		
Maximum Weight	Take Off	925 kg.	
	Landing	925 kg.	
Minimum Crew	1 Pilot.		
Number of Seats	2.		
	Pilot seat arms	seat forward:	1286 mm aft of datum.
		seat aft:	1446 mm aft of datum.
	Passenger seat arms	seat forward:	1286 mm aft of datum.
		seat aft:	1646 mm aft of datum.
	Maximum Baggage	45 kg at 2090 mm aft of datum.	
Fuel Capacity	Aircraft Serial Numbers: 070007 and subsequent.		
	Total	184 litres (2 x 92 litre tanks at 2312 mean fuel arm).	
	Usable	172 litres.	

Aircraft Serial Number: 94006.

Total 160 litres (2 x 80 litre tanks at 2312 mean fuel arm).
Usable 148 litres.

Refer to the flight manual for fuel distribution weight and balance data for both tank configurations.

Oil Capacity 7.5 litres.

Control Surface Deflections	Aileron	Up	112 mm \pm 5 mm at the trailing edge.
		Down	74 mm \pm 5mm at the trailing edge.
	Elevator	Up	160 mm \pm 5mm at the trailing edge.
		Down	83 mm \pm at the trailing edge.
	Elevator fixed tabs		Trailing edge of tabs 40 to 50 mm below plane of elevator upper surface.
	Rudder	Left and Right	170 mm \pm 5 mm at the trailing edge.
	Wing flaps	Retracted	0° \pm 1°
		First Notch	20° \pm 1°
		Full	40° \pm 1°

Operating Altitude Maximum 15,000 feet AMSL.

Crosswind Component Maximum for take-off and landing - 12 knots.

Types of Operation VFR (day and night)
Flight into known icing conditions is prohibited.

Manoeuvres permitted Non aerobatic manoeuvres as for normal flight including stalls (except whip stalls), chandelles, lazy eights and steep turns (angle of bank < 60°).

MANOEUVRE	ENTRY SPEED
Stalls	Slow deceleration
Chandelles	105 KIAS
Lazy eights	105 KIAS
Steep turns	75 – 80 KIAS.

Required Placards Refer to the approved flight manual.

Certification Basis	Civil Aviation Order 101.22, Issue 4, up to and including Amendment 72 and FAR 23 up to and including Amendment 34.
Type Design Data	Sealed drawing list, dated 8 th September 2005, including later approved changes. SB7L Flight Manual, dated 30 th November 2004 and later approved changes.
Serial Numbers Eligible	94006, 070009 and subsequent (see Note 6).
Production Basis	CASA Production Certificate No. 417197, dated 25 November 2003.
Noise Certification	Compliance with ICAO Chapter 10 and FAR 36 Appendix G has been shown.

NOTES

- Note 1. Service life limits for life limited parts are contained in the applicable manufacturer's Maintenance Manuals, Chapter 4, Airworthiness Limitations.
- Note 2. Sections of the airframe on aircraft Serial No 92005 in the areas of the wing carry through structure, the lift strut carry through structure, the boom to rear fuselage cluster joint, the fuselage joints one bay forward of the boom attachment, and the boom exterior skin in the vicinity of the rear of the forward top hat sections do not conform to the standard for the SB7L-360A. Therefore the fatigue analysis of the SB7L-360A in these areas is not applicable. Information in respect to additional fatigue inspections on aircraft Serial No 92005 is listed in the manufacturer's Maintenance Manual, Chapter 4, Airworthiness Limitations.
- Note 3. Model SB7L-235, although certificated in the Utility category, is restricted to Normal category manoeuvres only.
- Note 4. MTOW of aircraft Serial Numbers 92005 and 94006 is limited to 897 kg.

- Note 5. Aircraft S/N 070007 and 070008 were not manufactured under an Australia production approval, and are not covered by this TCDS.
- Note 6. Information on Models SB7L-235 and SB7L-360A is based on the certification work conducted to issue CASA Certificate of Type Approval (CTA) Number 169-1 issue 2 dated 24 January 1994, which this data sheet supersedes. Aircraft certified under CTA 169-1 satisfy the requirements of this data sheet.
- Note 7. Revision 2 of this data sheet adds the Hoffman HO44HM-177 138LD propeller as an alternative propeller for the SB7L-360A model

■ END -



Australian Government

Civil Aviation Safety Authority

Type Certificate

Number: VA502
Issue 3

Pursuant to regulations 21.13A and 21.25 of the Civil Aviation Safety Regulations 1998 this type certificate is issued in respect of the model SB7L-235, SB7L-360 and SB7L-360A aircraft, manufactured by:

Seabird Aviation Australia Pty Ltd
Hervey Bay Airport
PO Box 618
Pialba, QLD 4655
Australia

This certificate is valid until it is suspended or cancelled by the Civil Aviation Safety Authority. The basis of certification is as described in Type Certificate Data Sheet number VA502.



Dinh Nguyen
Delegate of the Authority
25 March 2008