Federal Public Service
Mobility and Transport
Belgian Civil Aviation Authority

BCAA

TYPE-CERTIFICATE DATA SHEET

BCAA.A.02

SV 4

For models: SV 4A
SV 4B
SV 4C, C1
SV 4D
SV 4L 150
SV 4E

Issue 01: 30 September 2016

Belgian Civil Aviation Authority
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1. For specific data, refer to:
   - Fiche de Navigabilité N° 6, Édition n° 6, Septembre 1987, issued by the Direction Générale de l'Aviation Civile, République Française;
   - Flugzeug-Kennblatt Nr. 622, Baureihen SV 4C – SV 4A – SV 4B, Ausgabe 7, 29. August 1986, issued by the Luftfahrt-Bundesamt, Deutschland.

SECTION B: SV 4B Type Design

B.I. General

1.	Data Sheet No.:	BCAA.A.02 – Issue 01 Date: 30 September 2016
2.	a) Type: b) Model: c) Variant:	SV 4 SV 4B —
3.	Airworthiness Category:	Normal and Aerobatic Categories
4.	Type Certificate Holder:	None (See also Administrative Section, II. Type Certificate Holder Record)
5.	Manufacturer:	Stampe en Vertongen (1933 - 1939) Drakenhofstraat 141 2100 Deurne – Antwerpen Belgium Stampe et Renard (1947 - 1970) Avenue Bordet, 34 1000 Bruxelles Belgium
6.	Certification Application Date:	1937 (See also Note 1)
7.	National Certifying Authority:	Ministère des Communications Administration de l'Aéronautique Service du Matériel Volant
8.	National Authority Type Certificate Date:	May 1960
9.	National Authority Type Certificate:	Fiche n° 2 Avion SV 4B Edition I

B.II. Certification Basis

1.	Reference Application Date for determining the Applicable Requirements:	1937 (See also Note 1)
2.	Airworthiness Requirements:	Norme AIR 0101, Ministère de la Défense Nationale – Direction Technique et Industrielle, Édition N° 4 du 15 Janvier 1955 (latest edition — cancelled); Norme AIR 0106/F, Ministère de la Défense – Direction des Constructions Aéronautiques, Édition N° 7 du 23 Octobre 1985 (latest edition — cancelled); Norme AIR 2004/E, Ministère de la Défense – Direction Technique des Constructions Aéronautiques, Édition N° 6 du 8 Mars 1979 (latest edition — current).
3.	Special Conditions:	None

4.	Exemptions:	None
5.	Deviations:	None
6.	Equivalent Safety Findings:	None
7.	Requirements elected to comply:	None
8.	Environmental Standards:	Exempt from compliance with the standards of ICAO Annex 16, Volume I, by virtue of the date of type certification, and being specifically build for aerobatic purposes.
9.	(Reserved) Additional National Requirements:	—
10.	(Reserved)	—

B.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Stampe en Vertongen Drawings N° 4000 to 4999 and Planches N° 1 to 21.

2. Description: Single engine, tandem biplane with reciprocating engine and fixed main landing gear in tail-wheel configuration; wings, fuselage and empennage in fabric covered mixed wood-metal construction.

3. Equipment: The aircraft is standard equipped with the following flight instruments:

Rear Cockpit:

1 air speed indicator	1 altimeter
1 turn and bank indicator	1 vertical speed indicator
1 grid steering compass	
1 RPM indicator	1 oil pressure indicator
1 magneto switch	
1 clock	
1 accelerometer (See also Section G - Note 4)	

Front Cockpit:

1 air speed indicator	1 altimeter
1 turn and bank indicator	1 vertical speed indicator
1 grid steering compass	1 stand-by compass
1 artificial horizon	
1 RPM indicator	1 oil pressure indicator
1 magneto switch	

(visible from both Rear and Front Cockpits)

1 fuel indicator

4. Dimensions:

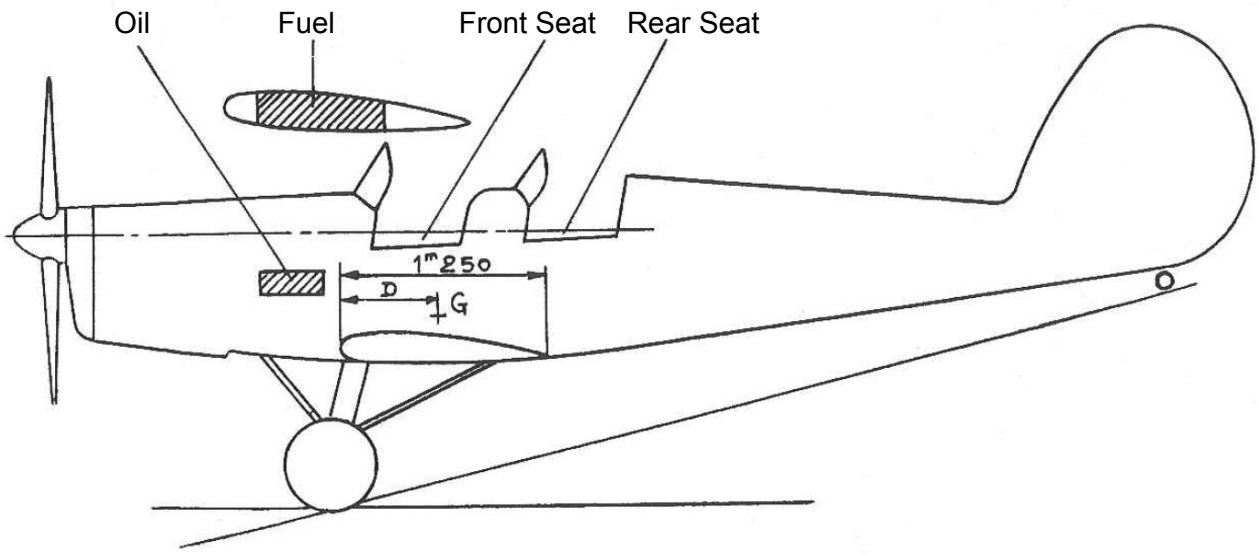
Span:	8.385 m
Length:	6.800 m
Height:	2.775 m
Wing area:	18.06 m²

5. Engine:

5.1.1. Model:	Bristol-Siddeley Engines LTD Gipsy Major I	
5.1.2. Type Certificate:	Engine Technical Certificate NO. 21 Issue 6, February 26th, 1964 Civil Type Approval of Gipsy Major 1 & 1F	
5.1.3. Limitations:	Take-Off Power:	91 kW (122 HP) at 2100 RPM
	Max. Climbing Power: (60 min. limit)	91 kW (122 HP) at 2100 RPM
	Emergency Max. Power: (5 min. limit)	98 kW (132 HP) at 2400 RPM
	Max. Cruising Power:	81 kW (108 HP) at 2100 RPM
5.2.1. Model:	Bristol-Siddeley Engines LTD Gipsy Major 10 MK I	
5.2.2. Type Certificate:	Engine Technical Certificate NO. 55 Issue 7, February 26th, 1964 Civil Type Approval of Gipsy Major 10, Marks 1-1, 1-1A, 1-3, 1-3A, 1-7 and 1-7A	
5.2.3. Limitations:	Take-Off Power:	106 kW (142 HP) at 2400 RPM
	Max. Climbing Power: (60 min. limit)	106 kW (142 HP) at 2400 RPM
	Emergency Max. Power: (5 min. limit)	108 kW (145 HP) at 2550 RPM
	Max. Cruising Power:	103 kW (138 HP) at 2300 RPM
	Max. Overspeed: (20 sec. limit)	2675 RPM
5.3.1. Model:	Rolls-Royce LTD Gipsy Major 10 MK II	
5.3.2. Type Certificate:	Engine Technical Certificate NO. 89 Issue 9, June 17th, 1971 Civil Type Approval of Gipsy Major 10 Mk.2, Mk.2-1 and Mk.2-2	
5.3.3. Limitations:	Max.Take-Off Power: (normal limit 5 min.) (emergency limit 15 min)	108 kW (145 HP) at 2550 RPM
	Max. Continuous Power:	106 kW (142 HP) at 2400 RPM
	Max. Overspeed: (20 sec. limit)	2675 RPM
5.4.1. Model:	Bristol Siddeley Engines LTD Cirrus Major III	
5.4.2. Type Certificate:	Engine Technical Certificate NO. 41 Issue 7, February 17th, 1964 Civil Type Approval of Cirrus Major III and IIIA	
5.4.3. Limitations:	Take-Off Power:	109 kW (146 HP) at 2200 RPM
	Max. Climbing Power:	109 kW (146 HP) at 2200 RPM
	Emergency Max. Power: (5 min. limit)	118 kW (158 HP) at 2450 RPM
	Max. Cruise Power:	101 kW (136 HP) at 2200 RPM
	Max. Overspeed: (20 sec. limit)	2570 RPM

6. Load factors:	Normal category:	+3.8 / -1.5
	Aerobatic category:	+6 / -4
7. Propeller:		
7.1.1. Model:	Stampe en Vertongen SV 4 (Gipsy Major 10 MK I & II)	
7.1.2. Type Certificate:	—	
7.1.3. Number of blades:	2	
7.1.4. Diameter:	1.982 m	
7.1.5. Sense of Rotation:	Left-hand tractor (viewed in direction of flight)	
7.2.1. Model:	Poncelet Gipsy Major 10 D1982 P1420 (Gipsy Major 10 MK I & II) (See also Note 6)	
7.2.2. Type Certificate:	—	
7.2.3. Number of blades:	2	
7.2.4. Diameter:	1.982 m	
7.2.5. Sense of Rotation:	Left-hand tractor (viewed in direction of flight)	
7.3.1. Model:	Hoffmann HO21-208B 108 L (Gipsy Major I, Gipsy Major 10 MK I, Gipsy Major 10 MK II, Cirrus Major III)	
7.3.2. Type Certificate:	Luftfahrt-BundesAmt Geräte-Kennblatt Nr. 32.110/1, Ausgabe 7, 9. Mai 2005, HO Propeller	
7.3.3. Number of blades:	2	
7.3.4. Diameter:	2.080 m	
7.3.5. Sense of Rotation:	Left-hand tractor (viewed in direction of flight)	
8. Fluids:		
8.1. Fuel:	Gipsy Major I: 69 octane minimum grade aviation gasoline	
	Gipsy Major 10 MK I, Gipsy Major 10 MK II, Cirrus Major III: 80 octane minimum grade aviation gasoline	
8.2. Oil:	Gipsy Major I, Gipsy Major 10 MK I, Gipsy Major 10 MK II: AeroShell W.80, W.100 or W.120 or engine constructor approved brands meeting J-1899 SAE Grade 40, SAE Grade 50 or SAE Grade 60 specifications respectively.	
	Cirrus Major III: AeroShell W.100 | J-1899 SAE Grade 50	
8.3. Coolant:	Not Applicable	
8.4. Smoke Oil:	Not Applicable	
9. Fluid capacities:		
9.1. Fuel:	Total capacity:	90 Litres (upper wing central fuel tank)
	Usable capacity:	82 Litres

9.2. Oil:	Max. sump capacity:	9 Litres	
9.3. Coolant system capacity:	Not Applicable		
9.4. Smoke Oil:	Not Applicable		
10. Air Speeds:	Never Exceed Speed V_{NE}:	275 km/h (148 KIAS)	
	Max. Structural Cruising Speed V_{NO}:	200 km/h (108 KIAS)	
	Max. Manoeuvring Speed V_A:	170 km/h (92 KIAS)	
	Stall Speed V_{SO}:	70 km/h (38 KIAS)	
11. Maximum Operating Altitude:	5200 m (17000 ft)		
12. All-weather Operations Capability:	Day - VFR		
13. Maximum Weights:	Take-Off and Landing:		
	Normal category:	825 kg (1820 lbs)	
	Aerobatic category:	770 kg (1700 lbs)	
14. Centre of Gravity Range:	Forward limit (aft of datum):	0.24 m (19.5 % RC)	
	Rear limit (aft of datum):	0.45 m (36.0 % RC)	
15. Datum:	Leading Edge of the Lower Wing Reference Chord, located at 0.42 m from the Fuselage Centreline Length of the Reference Chord:1.25 m		



16. Control surface deflections:	Aileron:	28° (103 mm) up,	26° (95 mm) down
	Elevator:	25° (177 mm) up,	29° (214 mm) down
	Rudder:	38° (248 mm) left,	44° (262 mm) right
	Elevator trim tab:	35° up,	30° down
17. Levelling Means:	Upper Fuselage Longerons		
18. Minimum Flight Crew:	1 Pilot (rear seat) – Solo Flight rear seat only		
19. Maximum Passenger Seating Capacity:	1 (front seat)		
20. Baggage / Cargo Compartments:	20 kg		

21. Wheels and Tyres:

21.1. Main Wheel Tyres:	Type:	S.V. 4
	Dimensions:	180 x 500 mm (7 - 7½ “) rubber
	Pressure:	1.5 kg/cm² maximum
	Shock Absorber:	rubber blocks (100 x 40 x 40 mm)
	Wheel Base:	1.580 m
	Brake Type:	Bendix mechanical
	Brake Dimensions:	7” diameter
21.2. Tail Wheel:	Type:	S.V
	Dimensions:	156 x 45 mm. – solid rubber
	Shock Absorber:	torsion springs

22. Serial Numbers Eligible: 1143 through 1207 (See also Note 1)

B.IV. Operating and Service Instructions

1.	Flight Manual:	Pilot’s Notes SV 4B (EPE – EVS)
2.	Technical Manual:	Notice Technique pour Avions Stampe SV 4C et SV 4B, Édition Juin 1948 ; H+S Aviation Ltd. Operation, Maintenance and Overhaul Gipsy Major Series 10, December 1969, Including Amendments 28 and 29; Hoffmann Propeller Betriebs- und Wartungshandbuch Nr. 0207.71, 9. Ausgabe, Juni 1989 | Operation and Maintenance Manual No. E 0110.74, 8. Edition, February 2002.
3.	Repair Manual:	Notice Technique d’Entretien et de Réparation Avion Type S.V.-4 B, Édition 1948
4.	Manual for Operation:	Pilot’s Notes SV 4B (EPE – EVS)
5.	Spare Parts Catalogue:	Nomenclature illustrée de l’Avion Stampe SV 4, Édition de Septembre 1948
6.	Table of Dimensions, Limits and Clearances:	None
7.	Instruments and aggregates:	None

B.V. Notes

1. Applicable Manufacturer’s Serial Numbers:

   The SV 4B Model is derived from the original SV 4 Type Design by Stampe en Vertongen in 1933, and was specifically designed for aerobatic flights.

   The first SV 4B aircraft was registered on the Belgian civil aircraft register in 1937, with registration marks OO-JAN (Serial Number unknown).

   In 1939 the SV 4B aircraft was selected to be used as a training aircraft for the Belgian Air Force.

The SV 4B aircraft (as well as the original SV 4 aircraft) that have been built by Stampe en Vertongen during the period 1933 – 1939 are considered to be lost with the outbreak of the Second World War.

In 1947 the production was resumed by Stampe et Renard, and 65 SV 4B aircraft were built for the Belgian Air Force. These aircraft were given the Serial Numbers 1143 through 1207 — military identification numbers V1 through V65 — and were used as training aircraft until 1969.

The SV 4B aircraft eligible under the present Type Certificate Data Sheet are those with Serial Numbers 1143 through 1207.

Certification Application Date – Reference Application Date for determining the Applicable Requirements:

Referring to the registration date of the first SV 4B aircraft on the Belgian civil aircraft register, the Certification Application Date and the Reference Application Date for determining the Applicable Requirements are both set to 1937.

3. Placards and Markings:

All placards specified in the Flight Manual | Manual for Operation must be displayed.

In addition, the following placards must be displayed:

On aircraft that have no generator or alternator installed, the following placard must be displayed:

(on the rear instrument panel)

WARNING:

ELECTRICAL SYSTEM HAZARDOUS:

BATTERY IS NOT CHARGED DURING FLIGHT

The following instrument markings must be applied:

Oil pressure indicators:

	Gipsy Major I Gipsy Major 10 Mk I Gipsy Major 10 Mk II	Cirrus Major III	
RED line (minimum)	30 psi	35 psi	
GREEN arc (normal operating)	30 — 45 psi	35 — 40 psi	35 — 45 psi
RED line (maximum)	45 psi	40 psi (piston type pump)	45 psi (gear type pump)

RPM indicators:

	Gipsy Major I	Gipsy Major 10 Mk I	Gipsy Major 10 Mk II	Cirrus Major III
GREEN arc (normal operating)	500 — 2100	500 — 2300	500 — 2400	500 — 2200
YELLOW arc (caution)	2100 — 2400	2300 — 2550	2400 — 2550	2200 — 2450
RED arc (overspeed)	—	2550 — 2675	2550 — 2675	2450 — 2570
RED line (maximum)	2400	2675	2675	2570

On aircraft that are required to have an accelerometer (G-meter) installed:

RED line (maximum positive)	+6
RED line (maximum negative)	-4

6. Poncelet propeller type (model) designations:

In the past, different propeller type (model) designations have been given to propellers, manufactured by Poncelet, and installed on SV 4B aircraft with Gipsy Major 10 MK I & II engines: GM10/SV4/40045, GM10SV4-40045, SV4B/P142D1982, P.1420 D.1980, D198P1420, D1982P1490, P1420D1982, 1982/1420, 1982X1420, GM-SV4, SV4BMAJOR10, GM8-SV4-0045.

Essentially, all manufactured propellers conform to a same type (model) design, designed for installation on Stampe SV 4B aircraft with Gipsy Major 10 MK I & II engine, and having a diameter (D) of 1982 mm and pitch (P) of 1420 mm.

Propellers manufactured by Poncelet are identified (propeller production | inspection card) by aircraft type, engine type, sense of rotation, diameter and pitch. Typically the engine type, diameter and pitch would be marked on the propeller, hence: Gipsy Major 10 D1982 P1420.

SECTION C: SV 4C, C1 Type Design

C.I. General

2. a) Type: SV 4
   b) Model: SV 4C
   c) Variant: SV 4C, SV 4C1

See Note 1.

C.II. Certification Basis

See Note 1.

C.III. Technical Characteristics and Operational Limitations

See Note 1.

C.IV. Operating and Service Instructions

See Note 1.

C.V. Notes

1. For specific data, refer to:
   - Fiche de Navigabilité N° 6, Édition n° 6, Septembre 1987, issued by the Direction Générale de l'Aviation Civile, République Française;
   - Flugzeug-Kennblatt Nr. 622, Baureihen SV 4C – SV 4A – SV 4B, Ausgabe 7, 29. August 1986, issued by the Luftfahrt-Bundesamt, Deutschland;
   - Flugzug-Kennblatt Nr. 622/SA, Baureihe SV 4C1, Ausgabe 1, 24. Januar 2006, issued by the Luftfahrt-Bundesamt, Deutschland.

SECTION D: SV 4D Type Design

D.I. General

1.	Data Sheet No.:	BCAA.A.02 – Issue 01 Date: 30 September 2016
2.	a) Type: b) Model: c) Variant:	SV 4 SV 4D —
3.	Airworthiness Category:	Normal and Aerobatic Categories
4.	Type Certificate Holder:	None (See also Administrative Section, II. Type Certificate Holder Record)
5.	Manufacturer:	Stampe et Renard (1947 - 1970) Avenue Bordet, 34 1000 Bruxelles Belgium
6.	Certification Application Date:	1967 (See also Note 1)
7.	National Certifying Authority:	—
8.	National Authority Type Certificate Date:	—
9.	National Authority Type Certificate:	—

D.II. Certification Basis

1.	Reference Application Date for determining the Applicable Requirements:	1967
2.	Airworthiness Requirements:	Norme AIR 0101, Ministère de la Défense Nationale – Direction Technique et Industrielle, Édition N° 4 du 15 Janvier 1955 (latest edition — cancelled); Norme AIR 0106/F, Ministère de la Défense – Direction des Constructions Aéronautiques, Édition N° 7 du 23 Octobre 1985 (latest edition — cancelled); Norme AIR 2004/E, Ministère de la Défense – Direction Technique des Constructions Aéronautiques, Édition N° 6 du 8 Mars 1979 (latest edition — current). FAR 23 (See Note 6 - Engine Mount – Main Landing Gear)
3.	Special Conditions:	None
4.	Exemptions:	None
5.	Deviations:	None
6.	Equivalent Safety Findings:	None

7.	Requirements elected to comply:	None
8.	Environmental Standards:	Exempt from compliance with the standards of ICAO Annex 16, Volume I, by virtue of the date of type certification, and being specifically build for aerobatic purposes.
9.	(Reserved) Additional National Requirements:	—
10.	(Reserved)	—

D.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:

Stampe en Vertongen Drawings N° 4000 to 4999 and Planches N° 1 to 21;

Stampe et Renard Drawings N° 8100, 8121, 8122, 8400 to 8402, 8404, 8406 to 8408, 8541, 8600 to 8605, 8671.

2. Description:

Single engine, tandem biplane with reciprocating engine and fixed main landing gear in tail-wheel configuration; wings, fuselage and empennage in fabric covered mixed wood-metal construction.

3. Equipment:

The aircraft is standard equipped with the following flight instruments:

Rear Cockpit:

1 speed indicator — 1 altimeter
1 turn and bank indicator — 1 vertical speed indicator
1 magnetic compass
1 RPM indicator
1 cylinder head temperature indicator
1 oil pressure indicator — 1 oil temperature indicator
1 fuel pressure indicator — 1 fuel pump switch
1 magneto switch
1 voltmeter
1 VHF radio
1 accelerometer (See also Section G - Note 4)

Front Cockpit:

1 speed indicator — 1 altimeter
1 turn and bank indicator — 1 vertical speed indicator
1 RPM indicator — 1 oil pressure indicator

(visible from both Rear and Front Cockpits)

1 fuel indicator

4. Dimensions:

Span:	8.450 m
Length:	7.000 m
Height:	2.950 m
Wing area:	19.2 m²

5. Engine:

5.1.1. Model:	Continental Motors IO-346-A	
5.1.2. Type Certificate:	FAA Type Certificate Data Sheet No. E3CE Revision 8 CONTINENTAL IO-346-A, -B November 2, 2011	
5.1.3. Limitations:	Take-Off Power: (5 min.)	123 kW (165 HP) at 2700 RPM
	Max. Continuous Power:	123 kW (165 HP) at 2700 RPM

6. Load factors:	Normal category:	+3.8 / -1.5
	Aerobatic category:	+6 / -3

7. Propeller:

7.1.1. Model:	Stampe et Renard Continental 165 C.V.
7.1.2. Type Certificate:	—
7.1.3. Number of blades:	2
7.1.4. Diameter:	1.980 m
7.1.5. Sense of Rotation:	Right-hand tractor (viewed in direction of flight)

8. Fluids:

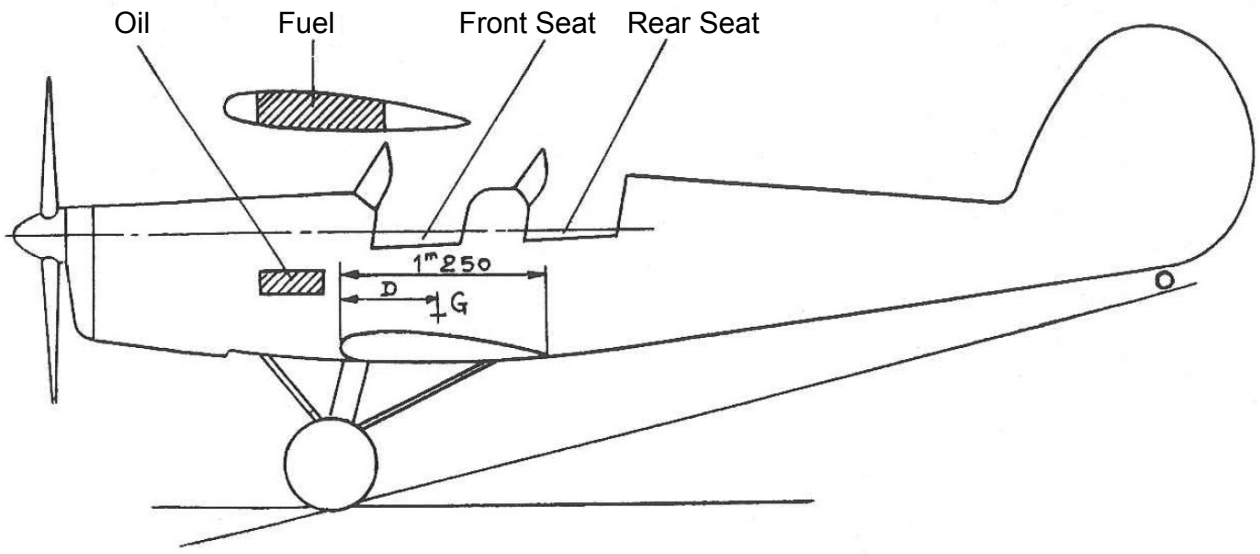
8.1. Fuel:	91 / 96 octane minimum grade aviation gasoline
8.2. Oil:	Ambient air temperature above 4°C (40°F): J-1899 or J-1966 SAE Grade 50 Below 4°C (40°F): J-1899 or J-1966 SAE Grade 30
8.3. Coolant:	Not Applicable
8.4. Smoke Oil:	Not Applicable

9. Fluid capacities:

9.1. Fuel:	Total capacity:	90 Litres (upper wing central fuel tank)
	Usable capacity:	82 Litres
9.2. Oil:	Max. sump capacity:	7 Litres
9.3. Coolant system capacity:	Not Applicable	
9.4. Smoke Oil:	Not Applicable	

10. Air Speeds:	Never Exceed Speed V_{NE}:	271 km/h (146 KIAS)
	Max. Structural Cruising Speed V_{NO}:	226 km/h (122 KIAS)
	Max. Manoeuvring Speed V_A:	191 km/h (103 KIAS)
	Stall Speed V_{SO}:	78 km/h (42 KIAS)
11. Maximum Operating Altitude:	6500 m (21000 ft)	
12. All-weather Operations Capability:	Day - VFR	

13. Maximum Weights:	Take-Off and Landing:		
	Normal category:	825 kg (1820 lbs)	
	Aerobatic category:	770 kg (1700 lbs)	
14. Centre of Gravity Range:	Forward limit (aft of datum):	0.25 m (20.0 % RC)	
	Rear limit (aft of datum):	0.43 m (34.5 % RC)	
15. Datum:	Leading Edge of the Lower Wing Reference Chord, located at 0.42 m from the Fuselage Centreline Length of the Reference Chord:1.25 m		



16. Control surface deflections:	Aileron:	113 mm up,	50 mm down
	Elevator:	117 mm up,	214 mm down
	Rudder:	400 mm left,	400 mm right
17. Levelling Means:	Upper Fuselage Longerons		
18. Minimum Flight Crew:	1 Pilot (rear seat) – Solo Flight rear seat only		
19. Maximum Passenger Seating Capacity:	1 (front seat)		
20. Baggage / Cargo Compartments:	20 kg		
21. Wheels and Tyres:			
21.1. Main Wheel Tyres:	Type:	S.R. 7B	
	Dimensions:	150 x 500 mm (6 x 6½ “) rubber	
	Pressure:	1.75 kg/cm² maximum	
	Shock Absorber:	rubber rings (60 x 20 x 20 mm)	
	Wheel Base:	1.553 m	
21.2. Tail Wheel:	Type:	S.V.	
	Dimensions:	156 x 45 mm – solid rubber	
	Shock Absorber:	torsion springs	
22. Serial Numbers Eligible:	1208 (See also Note 1)		

D.IV. Operating and Service Instructions

1.	Flight Manual:	Manuel de Vol Avion SV4.D.
2.	Technical Manual:	Notice Technique pour Avions Stampe SV 4C et SV 4B, Édition Juin 1948
3.	Repair Manual:	Notice Technique d'Entretien et de Réparation Avion Type S.V.-4 B, Édition 1948
4.	Manual for Operation:	Manuel de Vol Avion SV4.D.
5.	Spare Parts Catalogue:	Nomenclature illustrée de l'Avion Stampe SV 4, Édition de Septembre 1948
6.	Table of Dimensions, Limits and Clearances:	None
7.	Instruments and aggregates:	None

D.V. Notes

1. Applicable Manufacturer's Serial Numbers: 1208.

   The SV 4D Type Design comprises a project by Stampe et Renard to equip an SV 4 aircraft with a Continental IO-346-A (165 hp) engine.

   Only one prototype was build, which was registered on the Belgian civil aircraft register in 1967, with registration marks OO-SRS.

   This aircraft is currently at display in the Brussels Air Museum.

   Certification Application Date – Reference Application Date for determining the Applicable Requirements:

   Referring to the registration date of the SV 4D aircraft on the Belgian civil aircraft register, the Certification Application Date and the Reference Application Date for determining the Applicable Requirements are both set to 1967.

3. Placards and Markings:

   All placards specified in the Flight Manual | Manual for Operation must be displayed.

   The following instrument markings must be applied:

   Oil pressure indicators:

RED line (minimum)	10 psi
YELLOW arc (caution)	10 — 30 psi
GREEN arc (normal operating)	30 — 60 psi
YELLOW arc (caution)	60 — 100 psi
RED line (maximum)	100 psi

   RPM indicators:

GREEN arc (normal operating)	500 — 2700
RED line (maximum)	2700

On aircraft that are required to have an accelerometer (G-meter) installed:

RED line (maximum positive)	+6
RED line (maximum negative)	-3

6. Airworthiness Requirements:

The structural resistance of the Engine Mount and the Main Landing Gear has been shown to be in compliance with the appropriate requirements of FAR 23.

SECTION E: SV 4L 150 Type Design

E.I. General

2. a) Type: SV 4
   b) Model: SV 4L 150
   c) Variant: —

See Note 2.

E.II. Certification Basis

See Note 2.

E.III. Technical Characteristics and Operational Limitations

See Note 2.

E.IV. Operating and Service Instructions

See Note 2.

E.V. Notes

1. Applicable Manufacturer's Serial Numbers: 330.
   The SV 4L 150 Type Design is identical to the SV 4C Type Design, except for the propulsion system.
   The aircraft is equipped with a Lycoming AEIO-320-D2B engine, and an EVRA 91-77-34 propeller.
2. For specific data, refer to:
   - Fiche de Navigabilité N° 6 A, Édition n° 2, Mars 1988, issued by the Direction Générale de l'Aviation Civile, République Française.

SECTION F: SV 4E Type Design

F.I. General

1.	Data Sheet No.:	BCAA.A.02 – Issue 01 Date: 30 September 2016
2.	a) Type: b) Model: c) Variant:	SV 4 SV 4E —
3.	Airworthiness Category:	Normal and Aerobatic Categories
6.	Certification Application Date:	1982 (See also Note 1)

See Note 1.

F.II. Certification Basis

1.	Reference Application Date for determining the Applicable Requirements:	1982 (See also Note 1)
2.	Airworthiness Requirements:	FAR 23 (See Note 6)
3.	Special Conditions:	None
4.	Exemptions:	None
5.	Deviations:	None
6.	Equivalent Safety Findings:	None
7.	Requirements elected to comply:	None
8.	Environmental Standards:	Exempt from compliance with the standards of ICAO Annex 16, Volume I, by virtue of being specifically build for aerobatic purposes. (See also Note 7)

See Note 1.

F.III. Technical Characteristics and Operational Limitations

1.	Type Design Definition:	Drawings by Michel Baar, reference: Avion SV 4E Moteur Lycoming IO-360-B2F Bâti-Moteur Détails, Plan N°1 (26 janvier 1981); Avion SV 4E Moteur Lycoming IO-360-B2F Bâti-Moteur, Plan N°2; Avion SV 4E Moteur Lycoming IO-360-B2F Renforcement

fuselage faces gauche et droite vu coté moteur, Plan N°2 (05 septembre 1981).

5. Engine:

5.1.1. Model:	Lycoming AEIO-360-A1A	
5.1.2. Type Certificate:	Type Certificate Data Sheet EASA.IM.E.032, Issue 01, 27 September 2012, Lycoming Engines IO-360 Series Engines; FAA Type Certificate Data Sheet No. 1E10 Revision No. 25 Lycoming Engines IO-360, LIO-360, AIO-360, AEIO-360, HIO-360, LHIO-360 February 25, 2016.	
5.1.3. Limitations:	Take-Off Power: (5 min.)	149 kW (200 HP) at 2700 RPM
	Max. Continuous Power:	149 kW (200 HP) at 2700 RPM
5.2.1. Model:	Lycoming AEIO-360-B2F	
5.2.2. Type Certificate:	Type Certificate Data Sheet EASA.IM.E.032, Issue 01, 27 September 2012, Lycoming Engines IO-360 Series Engines; FAA Type Certificate Data Sheet No. 1E10 Revision No. 25 Lycoming Engines IO-360, LIO-360, AIO-360, AEIO-360, HIO-360, LHIO-360 February 25, 2016	
5.2.3. Limitations:	Max.Take-Off Power: (5 min.)	134 kW (180 HP) at 2700 RPM
	Max. Continuous Power:	134 kW (180 HP) at 2700 RPM
6. Load factors:	Normal category:	+3.8 / -1.5
	Aerobatic category:	+6 / -3

7. Propeller:

7.1.1. Model:	Poncelet Lycoming 180 CV D186 P138
7.1.2. Type Certificate:	—
7.1.3. Number of blades:	2
7.1.4. Diameter:	1.860 m
7.1.5. Sense of Rotation:	Right-hand tractor (viewed in direction of flight)
7.2.1. Model:	Hoffmann HO27 HM-186 135 Hoffmann HO27 HM-186 140
7.2.2. Type Certificate:	Luftfahrt-BundesAmt Geräte-Kennblatt Nr. 32.110/1, Ausgabe 7, 9. Mai 2005, HO Propeller
7.2.3. Number of blades:	2
7.2.4. Diameter:	1.860 m
7.2.5. Sense of Rotation:	Right-hand tractor (viewed in direction of flight)

7.3.1. Model:	Hoffmann HO29 HM-180 170
7.3.2. Type Certificate:	Luftfahrt-BundesAmt Geräte-Kennblatt Nr. 32.110/1, Ausgabe 7, 9. Mai 2005, HO Propeller
7.3.3. Number of blades:	2
7.3.4. Diameter:	1.800 m
7.3.5. Sense of Rotation:	Right-hand tractor (viewed in direction of flight)
7.4.1. Model:	EVRA 180-170H5
7.4.2. Type Certificate:	Type Certificate Data Sheet EASA.P.110, Issue 01, 20 April 2007, Helice EVRA Series Propellers
7.4.3. Number of blades:	2
7.4.4. Diameter:	1.800 m
7.4.5. Sense of Rotation:	Right-hand tractor (viewed in direction of flight)

8. Fluids:

8.5. Fuel:	100 / 100LL octane minimum grade aviation gasoline For alternate fuel grades, see the latest revision of Lycoming Service Instruction 1070.
8.6. Oil:	J-1899 or J-1966 SAE Grades, conform to the specifications in the latest revision of Lycoming Spec. No. 301 and Lycoming Service Instruction 1014.
8.7. Coolant:	Not Applicable
8.8. Smoke Oil:	Not Applicable

See Note 1.

F.IV. Operating and Service Instructions

1.	Flight Manual:	—
2.	Technical Manual:	Notice Technique pour Avions Stampe SV 4C et SV 4B, Édition Juin 1948; Lycoming O-360 | IO-360 Installation and Operation Manual, Part No. 60297-12, 8th Edition, Rev. 5, December 2009; Lycoming AEIO-360 Installation and Operation Manual, Part No. 60297-21, 2nd Edition, Rev. 1, November 2009; Lycoming O-360 | IO-360 | AEIO-360 Maintenance and Overhaul Manual, Part. No. 60294-7, Rev. 14, July 2011; Hoffmann Propeller Betriebs- und Wartungshandbuch Nr. 0207.71, 9. Ausgabe, Juni 1989 | Operation and Maintenance Manual No. E 0110.74, 8. Edition, February 2002;
3.	Repair Manual:	Notice Technique d'Entretien et de Réparation Avion Type S.V.-4 B, Édition 1948
4.	Manual for Operation:	—
5.	Spare Parts Catalogue:	Nomenclature illustrée de l'Avion Stampe SV 4, Édition de Septembre 1948

6. Table of Dimensions, Limits and Clearances: None
7. Instruments and aggregates: None

See Note 1.

F.V. Notes

1. The SV 4E Type Design comprises a modification approved by the Belgian Civil Aviation Authority, with reference Certificat d'Homologation No. 94-01, dated November 30, 1994.
   The modification allows for the installation of a Lycoming O-360, IO-360 or AEIO-360 Series Engine on SV 4A, SV 4B and SV 4C Aircraft Models.

   Only pertinent data with regard to the modification are shown in this Section.
   For additional and | or specific data, refer to the appropriate Aircraft Model Section or referenced data sheets.

   Certification Application Date – Reference Application Date for determining the Applicable Requirements:
   Referring to the design drawings pertaining to this modification, which are dated 1981, the test flights that have been performed on 5 July 1982, and the technical file for showing compliance with the pertinent requirements, which is dated 30 November 1982, the Certification Application Date and the Reference Application Date for determining the Applicable Requirements are both set to 1982.

3. Placards and Markings:
   All placards specified in the Flight Manual | Manual for Operation must be displayed.
   In addition, the following placards must be displayed:

   (in the rear cockpit)

   Aircraft Modified with Lycoming *AEIO-360-B2F Engine, in accordance with Belgian CAA Certificat d' Homologation No. 94-01**

   * The AEIO-360-B2F Engine Model is given as an example; the precise Engine Model installed should be indicated on the subject placard.

   (near the filler cap)

   Minimum Grade Aviation Gasoline 100 or 100LL

The following instrument markings must be applied:

Oil pressure indicators:

RED line (minimum)	25 psi
YELLOW arc (caution)	25 — 55 psi
GREEN arc (normal operating)	55 — 95 psi
YELLOW arc (caution)	95 — 115 psi
RED line (maximum)	115 psi

RPM indicators:

GREEN arc (normal operating)	500 — 2700
RED line (maximum)	2700

On aircraft that are required to have an accelerometer (G-meter) installed:

RED line (maximum positive)	+6
RED line (maximum negative)	-3

6. Airworthiness Requirements:
   The structural resistance of the Engine Mount has been shown to be in compliance with the appropriate requirements of FAR 23.

7. Individual aircraft may be issued with a noise certificate.

   A Noise Level measurement was performed, showing compliance with the standards of ICAO Annex 16, Volume I, Chapter 6 for the following aircraft configuration:

Aircraft Model:	SV 4E
Engine Model:	Lycoming IO-360-A1A (low compression) – 180 HP max. continuous power at 2700 RPM
Propeller Model:	Poncelet Lycoming 180 CV D186 P138
Take-Off Weight:	825 kg
Noise Level:	65,9 dB(A) at 2500 RPM (high speed cruise power)
Max. Noise Level:	71,0 dB(A).

SECTION G: Common to all SV 4 Models

G.V. Notes

2. Weight and Balance:

   A current weight and balance report including list of equipment included in the certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

   The certificated empty weight and corresponding centre of gravity location must include full oil and unusable fuel.

3. Placards and Markings:

   All placards specified in the Flight Manual | Manual for Operation must be displayed.

   In addition, the following placards must be displayed:

   (on both rear and front instrument panels)

   AEROBATICS AT 770 KG MAXIMUM

   (in both rear and front cockpits)

   NO SMOKING

   (on the front instrument panel)

   WARNING:
   SOLO FLYING FROM REAR SEAT ONLY!

   The following instrument markings must be applied:

   Speed Indicators:

GREEN arc (normal operating)	70 — 200 km/h (38 — 108 KIAS)
YELLOW arc (caution – only in smooth air)	200 — 275 km/h (108 — 148 KIAS)
RED line (maximum)	275 km/h (148 KIAS)

4. Approved Aerobatic Flights:

   Aerobatic flights are only permitted for aircraft:

   - with lower wing fore tie-rods conforming to the specifications, and installed in accordance with the instructions in Aérospatiale Service Bulletin Stampe N° 1 of 1 March 1971; and,
   - with structural modifications and Ceconite polyester fabric covering applied in accordance with the instructions in Aérospatiale Service Bulletin N° 2 - Stampe SV 4 (all types) of 8 November 1978.

   For aerobatic flights the installation of an accelerometer (G-meter) is required.

Only the following Aerobatic Flight manoeuvres are permitted:

enter inverted flight
return from inverted flight
inverted turn
inverted stall
slow roll to right and left, roll time less than 15 seconds
super slow roll to right and left, roll time more than 15 seconds
flick roll from positive or inverted flight
hesitation roll
rolls in turns, right and left
loop
inverted loop
half loop and half roll to the right and to the left (Immelmann)
outside half loop and half roll to the right and to the left
split S to the right and to the left
inverted split S to the right and to the left
Cuban eight
inverted full Cuban eight
loop and flick roll (at the top) to the right and to the left
stall turn to the right and to the left

5. Replacement life of lower wing fore tie-rods:

Tie-rods conforming to the specifications in Aérospatiale Service Bulletin Stame N °1 of 1 March 1971 | Nord Aviation drawings 'Dessin n° 1501 modifié b' and 'Dessin n° 1502 modifié a' of 12 March 1970, and whose threads can be seen to be in good undamaged condition over the whole of their lengths, may remain in service for a total life of 500 flying hours.

Tie-rods that cannot be positively identified as conforming to the aforementioned specifications, or whose threads show any signs of damage (see below), or whose lives cannot be determined, must be replaced before further flight.

Upon any occurrence that might impact their reliability, the tie-rods and nuts must be removed and cleaned, visually inspected for any deformations, dents, corrosion, or any other dimension or surface defect, and magnetic particle inspected for any cracks.

Tie-rods must be installed and tightened in accordance with the instructions in Aérospatiale Service Bulletin Stampe N° 1 of 1 March 1971.

ADMINISTRATIVE SECTION

I. Acronyms

BCAA — Belgian Civil Aviation Authority
EASA — European Aviation Safety Agency
FAA — United States Federal Aviation Administration
ICAO — International Civil Aviation Organization
KIAS — Knots Indicated Air Speed
TCDS — Type Certificate Data Sheet
VFR — Visual Flight Rules

II. Type Certificate Holder Record

Stampe en Vertongen
Drakenhofstraat 141
2100 Deurne – Antwerpen
Belgium

As of 8 October 2016, the Belgian Civil Aviation Authority assumes the responsibilities of 'Type Certificate Holder', as per Article 6.2.4 of Chapter 6, Part V of ICAO Airworthiness Manual (Doc 9760).

Belgium Civil Aviation Authority
Technical Directorate
City Atrium, 6th floor
Rue du Progrès 56
1210 Brussels
Belgium

III. Manufacturer Record

Stampe en Vertongen (1933 – 1939)
Stampe et Renard (1947 – 1970)

IV. Change Record

Issue	Date	Changes
Issue 01	30 September 2016	Initial issue (replaces Fiche de Navigabilité N° 2); change of Authority designation, addition of SV 4A, SV 4C, SV 4C1, SV 4D, SV 4L 150 and SV 4E models | variants.