



TYPE CERTIFICATE DATA SHEET

No. EASA.IM.R.113

for
S-76 Series

Type Certificate Holder
Sikorsky Aircraft Corporation

6900 Main Street
Stratford, Connecticut 06497-9129
U.S.A.

For Models: S-76A, S-76B, S-76C, S-76D



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SECTION 1: S-76A

I. General

- | | |
|--|--|
| 1. Type/ Model/ Variant | |
| 1.1 Type | S-76 |
| 1.2 Model | S-76A |
| 1.3 Variant | --- |
| 2. Airworthiness Category | Large Rotorcraft, Category A and B |
| 3. Manufacturer | Sikorsky Aircraft Corporation
6900 Main Street
Stratford, Connecticut 06497-9129
U.S.A. |
| 4. Type Certification Application Date | to FAA: 17 January 1975 |
| 5. State of Design Authority | Federal Aviation Administration (FAA), USA |
| 6. Type Certificate Date | by FAA: 21 November 1978
by CAA UK: 26 April 1979 |
| 7. Type Certificate n° | by FAA: H1NE
by CAA UK: FR 10 |
| 8. Type Certificate Data Sheet n° | by FAA: H1NE
by CAA UK: FR 10 |
| 9. EASA Type Certification Date | 28 September 2003,
in accordance with CR (EU) 1702/2003, Article 2, 3., (a),
(i), 2 nd bullet, 2 nd indented bullet. |

II. Certification Basis

- | | |
|---|--|
| 1. Reference Date for determining the applicable requirements | 17 January 1975 |
| 2. Airworthiness Requirements | <p>FAR Part 29, dated 1 February 1965, Amdt. 29-1 through 29-11; in addition, portions of Amdts. 29-12, specifically, 29.67, 29.71, 29.75, 29.141, 29.173, 29.175, 29.931, 29.1189(a)(2), 29.1555(c)(2), 29.1557(c), portions of Amdt. 29-13, specifically 29.965, and portions of Amdt. 29-21, specifically 29.1, 29.79, 29.1517, and 29.1587.</p> <p>Instrument flight criteria (interim) for S-76, dated 10 February 1977.</p> <p>Compliance with the following optional requirements has been established:
Ditching provisions FAR 29.563 including 29.801 and 29.807(d) of Amdt. 29-12 and excluding 29.1411, 29.1415, and 29.1561 when emergency flotation gear p/n 76076-02002 is installed.
For ditching approval compliance with the operating rules and FAR 29.1411, 29.1415, and 29.1561 must be shown.</p> <p>Cargo hook FAR 29.865 including 29.25 of amendment 29-12, when cargo hook system, p/n 76255-02000, is installed. For external load operations, FAR 133, including Amdts. 1-4</p> |
| 3. Special Conditions | 29-82-NE-3 (Docket No. 17721), dated 27 March 1978 |
| 4. Exemptions | Partial Grant of Exemption from FAR 29.811(h),
Exemption n° 2542 (Docket n° 17403), dated 9 January 1979, for the Model S-76A |
| 5. Deviations | none |
| 6. Equivalent Safety Findings | FAR 29.173(b) |
| 7. Requirements elected to comply | none |
| 8. Environmental Protection Requirements | |
| 8.1 Noise Requirements | See TCDSN EASA.IM.R.113 |



- 8.2 Emission Requirements n/a
9. Operational Suitability Data (OSD) see SECTION 5 below

III. Technical Characteristics and Operational Limitations

1. Type Design Definition Sikorsky drawings 76000-00001-041 and (modified) 76000-00001-041 as modified by 76070-00100-011 (Arriel 1S), or 76070-30600-011 (Arriel 1S1)
2. Description Twin gas turbine engine; four-bladed single main rotor, four-bladed tail rotor; helicopter with tricycle-type landing gear; designed to carry up to 13 passengers and a pilot.
3. Equipment Refer to Equipment List in approved RFM
4. Dimensions
- 4.1 Fuselage Length: 13.22 m
Width hull: 2.13 m
Width stabilizer: 3.05 m
Height: 3.58 m
- 4.2 Main Rotor Diameter: 13.41 m
- 4.3 Tail Rotor Diameter: 2.44 m
5. Engine
- 5.1 Model Allison Engine Company
2 x Model 250-C30, or,
2 x Model 250-C30S, or,
1 each Model 250-C30 and Model 250-C30S
(see Note 1.)
- 5.2 Type Certificate FAA TC/TCDS n°: E1GL
EASA TC/TCDS n°: n/a

5.3 Limitations

5.3.1 Installed Engine Limitations Sea level static / standard day

	TQ limits [%]	Gas generator speed limits (N ₁) [rpm (%)]	PWR turbine inlet (T _s) [°C]
TKOF (5 min)	104.6	53 550 (105.0)	768
Max Continuous	104.6	53 550 (105.0)	768
OEI (30 min)	104.6	53 550 (105.0)	798
OEI (2-½-min)	111.2	53 550 (105.0)	826
16 sec transient (OEI)	111.2 to 155.0	---	---
10 sec transient (starting)	---	53 550 (105.0) to 54 060 (106.0)	826 to 927

5.3.2 Output shaft (N₂)

- Normal Range 95% to 107%
- Max Continuous Varies linearly from 114% at flight autorotation to 107.1% at 2-½-min power
- Max 15-sec Varies linearly from 119% at flight autorotation to 109% at 2½-min power
- Engine torque 100% = 764.7 Nm (564 lb-ft)
- See Rotorcraft Flight Manual for T_s (power turbine inlet temperature) limits and power turbine (N₂) speed limits

5.3.3 Transmission Torque Limits Refer to approved RFM



6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

Primary:
JP-4/JP-5**/JP-8/Jet A**/Jet A1**/Jet B/GB6537-94(RP-3)**

Alternate:

** AVGAS/Jet A, A1, or JP5 mixture.

Do not use above 4°C (40°F), (see Note 2.). For operations below 4°C (40°F), anti-ice additive required (see Note 3.)

6.2 Oil

Refer to approved RFM

6.3 Additives

See Note 3.

7. Fluid capacities

7.1 Fuel

Fuel tank capacity: 1 084 litres (286.4 US gal)

Usable fuel: 1 064 litres (281.2 US gal)

7.2 Oil

4.8 litres (1.27 US gal) per engine

7.3 Coolant System Capacity

n/a

8. Air Speed Limitations

V_{NE PWR ON}: 155 KIAS,

see RFM for variations of V_{NE} with gross weight and density altitude.

V_{LE}/V_{LO}: 130 KIAS.

V_{NE PWR OFF}: 141 KIAS.

Below 36.3 kg (80 lb) fuel remaining per tank, reduce airspeed to 126 KIAS or less.

9. Rotor Speed Limitations

Power on:

Maximum 107% N_r (313 rpm)

Minimum 100% N_r (AEO)

Minimum 96% N_r (OEI)

Power off:

Maximum 115% N_r (336 rpm)

Minimum 87% N_r (255 rpm)

Transient:

Refer to approved RFM

10. Maximum Operating Altitude and Temperature

10.1 Altitude

Enroute: 15 000 ft (4 572 m)

Take-off and landing: 6 900 ft (2 103 m), or,

11 000 ft (3 353 m), (for helicopters incorporating Sikorsky Kit p/n 76070-30005)

10.2 Temperature

-34.4°C (-30°F) to ISA+36.7°C, not to exceed +48.9°C (120°F)

11. Operating Limitations

Category A and B

VFR day and night,

IFR,

Non-icing conditions

12. Maximum Mass

4 763 kg (10 500 lb)

13. Centre of Gravity Range

Refer to approved RFM

14. Datum

The datum line (STA 0) is located at 5 080 mm (200.0 in) forward of main rotor centroid

15. Levelling Means

Levelling plate at STA 176, BL 35, L.H. and plumb line from upper frame of the aft doorway



- | | |
|--|--|
| 16. Minimum Flight Crew | 2 pilots (IFR)
1 pilot (IFR) when appropriately equipped and operating to approved RFM or RFMS (see Note 6.)
1 pilot (VFR) |
| 17. Maximum Passenger Seating Capacity | 1 cockpit, 12 cabin |
| 18. Passenger Emergency Exit | 2, one on each side of the passenger cabin |
| 19. Maximum Baggage/ Cargo Loads | Baggage compartments:
272 kg (600 lb)
Cabin compartment:
Cargo floor loading 366 kg/m ² (75 lb/ft ²) |
| 20. Rotor Blade Control Movement | For rigging information refer to Maintenance Manual |
| 21. Auxiliary Power Unit (APU) | n/a |
| 22. Life-limited Parts | See Chapter 4 of the Maintenance Manual |
| 23. Wheels and Tyres | See Illustrated Parts Catalogue (IPC) |

IV. Operating and Service Instructions

- | | |
|--|--|
| 1. Flight Manual | Rotorcraft Flight Manual, Model S-76A Helicopter (Publication SA 4047-76-1), EASA-approved |
| 2. Maintenance Manual | SA 4047-76-2 (see Note 7.) |
| 3. Structural Repair Manual | SA 4047-76-12 |
| 4. Weight and Balance Manual | n/a |
| 5. Illustrated Parts Catalogue | SA 4047-76-4 |
| 6. Service Letters and Service Bulletins | As published by Sikorsky and EASA-approved |
| 7. Required Equipment | |

The basic required equipment, as prescribed in the applicable airworthiness regulations (see Certification Basis), must be installed in the helicopter for certification.

In addition, the following items of equipment are required.

Special airspeed indicator approved for use on S-76A only:

- Aero Mechanism Part No. 8502C-S20LW, or,
- Aerosonic Part No. 20020-11190, or,
- Aerosonic Part No. 20020-11293.

V. Notes (Model S-76A only)

1. Alternate engine installations with Turboméca Arriel 1S or 1S1 engines are approved under STC SH568NE (not in mixed engine configurations).
2. Mixture ratio: 1 part AVGAS, Grade 80/87, to 2 parts Jet Fuel (Jet A, Jet 1, or JP-5) by volume may be used for unrestricted periods of time. AVGAS, Grade 100/130 (100LL) with a maximum of 2.0 ml/gal lead content may be used in place of Grade 80/87 in the same proportions with jet fuel for not over 300 hours during any overhaul period. Do not use above 4°C (40°F). Do not use AVGAS containing Tri-Cresyl-Phosphate (TCP).
3. MIL-T-5624 Grade JP-5 with anti-ice additive conforming to MIL-I-27686 (Philips Petroleum Company MB-55 or equivalent) in concentration of 0.035% to 0.15% by volume.
ASTM D-1655 Jet A, A1, or GB6537-94 (RP3) with anti-ice additive conforming to MIL-I-27686 (Philips Petroleum Company MB-55 or equivalent) in concentration of 0.035% to 0.15% by volume.
If the AVGAS/Jet Fuel mixture is added to JP-4 or Jet B, add anti-ice additive in concentration of 0.035% to 0.15% based only on the AVGAS/Jet Fuel volume added.
If the jet fuel to be mixed with AVGAS is JP-5, Jet A, or Jet A1, to which anti-ice additive has not been added, add anti-ice additive in concentration of 0.035% to 0.15% based on entire volume.



V. Notes (Model S-76A only)

4. Current weight and balance report, including list of equipment included in certificated empty weight, and loading instructions, when necessary, must be provided for each helicopter at the time of original certification. See RFM loading section for variations of fuel weight and moment-arm with variations of fuel and fuel quantity.
5. When operated at gross weights above 4 672 kg (10 300 lb), the helicopter must comply with Revision 14 of the Airworthiness Limitations Section (ALS), dated 14 May 1985, or subsequent EASA-approved revisions of the Airworthiness Limitations and Inspection Requirements Manual SA 4047-76-2-1.
6. 1-pilot IFR is approved for Models S-76A when appropriately equipped and operating in accordance with a RFM or RFMS that allows such operation. For 1-pilot IFR operation requirements include installation of an SPZ 7000 Digital Automatic Flight Control System by STC or an SPZ 7600 Digital Automatic Flight Control System by STC or as optional equipment.
The following Honeywell RFMSs relate to 1-pilot IFR operations with the SPZ 7000:
 - Model S-76A SA 4047-76-1 Honeywell Supp No. 27-5130-14-03
 - Model S-76A SA 4047-76-1 Honeywell Supp No. 27-5120-19-01 (S-76A Arriel)The following Sikorsky RFMS relate to 1-pilot IFR operations with the SPZ 7600:
 - Model S-76A SA 4047-76-1 Supp S-38
7. Information essential to the proper maintenance of the helicopter is contained in the Sikorsky S-76A Maintenance Manual, publication SA 4047-76-2, and the Airworthiness Limitations and Inspection Requirements Manual SA 4047-76-2-1 provided with each helicopter. The values of retirement (service) life contained in Chapter 4 of the Airworthiness Limitations and Inspection Requirements Manual SA 4047-76-2-1 or inspection intervals cannot be increased without EASA approval (see Note 5.)
For Model S-76A serial numbers 760295, 760296, 760297, 760298, 760300, and 760301:
Information essential to proper maintenance of the helicopter is contained in the Sikorsky S-76A Maintenance Manual SA 4047-76AA-2 and the Airworthiness Limitations and Inspection Requirements Manual SA 4047-76-2-1 provided with each helicopter. The values of retirement (service) life contained in Chapter 4 of the Airworthiness Limitations and Inspection Requirements Manual SA 4047-76-2-1 or inspection intervals cannot be increased without EASA approval (see Note 5.)
8. Manufacturer's serial numbers:
76006, 76007, 760001 through 760122, 760130 through 760261, 760263 through 760268, 760270 through 760298, 760300 through 760302, 760304, 760364, 760366, 760369 through 760371, 760373, 760374 are eligible.

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SECTION 2: S-76B

I. General

- | | |
|--|--|
| 1. Type/ Model/ Variant | |
| 1.1 Type | S-76 |
| 1.2 Model | S-76B |
| 1.3 Variant | --- |
| 2. Airworthiness Category | Large Rotorcraft, Category A and B |
| 3. Manufacturer | Sikorsky Aircraft Corporation
6900 Main Street
Stratford, Connecticut 06497-9129
U.S.A. |
| 4. Type Certification Application Date | to FAA: 1 June 1982 |
| 5. State of Design Authority | Federal Aviation Administration (FAA), USA |
| 6. Type Certificate Date | by FAA: 31 October 1985
by LBA: 7 July 1986 |
| 7. Type Certificate n° | by FAA: H1NE
by LBA: 3050 |
| 8. Type Certificate Data Sheet n° | by FAA: H1NE
by LBA: 3050 |
| 9. EASA Type Certification Date | 28 September 2003,
in accordance with CR (EU) 1702/2003, Article 2, 3., (a),
(i), 2 nd bullet, 2 nd indented bullet. |

II. Certification Basis

- | | |
|---|--|
| 1. Reference Date for determining the applicable requirements | 1 June 1982 |
| 2. Airworthiness Requirements | FAR Part 29, dated 1 February 1965, Amdts. 29-1 through 29-11; in addition, portions of Amdt. 29-12, specifically, 29.67, 29.71, 29.75, 29.141, 29.173, 29.175, 29.931, 29.1189(a)(2), 29.1555(c)(2), 29.1557(c), portions of Amdt. 29-13, specifically 29.965, and portions of Amdt. 29-21, specifically 29.1, 29.79, 29.1517, and 29.1587. Portions of Amdt. 29-24, specifically 29.1325(f)
Compliance with the following optional requirements has been established:
Ditching provisions FAR 29.563 including 29.801 and 29.807(d) of Amdt. 29-12 and excluding 29.1411, 29.1415, and 29.1561 when emergency flotation gear, p/n 76076-02002, is installed. For ditching approval compliance with the operating rules and FAR 29.1411, 29.1415, and 29.1561 must be shown.
Cargo hook FAR 29.865 including 29.25 of Amdt. 29-12, when cargo hook system, p/n 76255-02000, is installed. For external load operations, FAR 133, including Amdts. 1-4. |
| 3. Special Conditions | 29-82-NE-3 (Docket No. 17721), dated 27 March 1978 |
| 4. Exemptions | Partial Grant of Exemption from FAR 29.811(h),
Exemption No. 2542 (Docket No. 17403),
dated 3 July 1985. |
| 5. Deviations | none |
| 6. Equivalent Safety Findings | Equivalent safety finding for FAR 29.173(b), 29.1013(e),
29.1203(a), 29.1181(a)(6) and 29.1189(a) |
| 7. Requirements elected to comply | none |
| 8. Environmental Protection Requirements | |
| 8.1 Noise Requirements | See TCDSN EASA.IM.R.113 |



- 8.2 Emission Requirements n/a
9. Operational Suitability Data (OSD) see SECTION 5 below

III. Technical Characteristics and Operational Limitations

1. Type Design Definition Sikorsky drawings 76076-10500-011 (up to and including s/n 760382), 76076-10700-041 (s/n 760387 and subsequent)
2. Description Twin gas turbine engine; four-bladed single main rotor, four-bladed tail rotor; helicopter with tricycle-type landing gear; designed to carry up to 13 passengers and a pilot.
3. Equipment Refer to Equipment List in approved RFM
4. Dimensions
 - 4.1 Fuselage

Length:	13.22 m
Width hull:	2.13 m
Width stabilizer:	3.05 m
Height:	3.58 m
 - 4.2 Main Rotor Diameter: 13.41 m
 - 4.3 Tail Rotor Diameter: 2.44 m
5. Engine
 - 5.1 Model Pratt & Whitney Canada (PWC)
2 x PWC Model PT6B-36 (Category B only, reference S-76B Flight Manual, Supp No. 2), or,
2 x PWC Model PT6B-36A, or,
2 x PWC Model PT6B-36B (reference S-76B Flight Manual, Supp No. 11)
 - 5.2 Type Certificate FAA TC/TCDS n°: E21NE
EASA TC/TCDS n°: EASA.IM.E.039
 - 5.3 Limitations
 - 5.3.1 Installed Engine Limitations Sea level static / standard day

for model PWC PT6B-36	Engine TQ limits [%]	Transmission TQ limits [%]	Gas generator speed limits (N ₁) [%]	PWR turbine inlet (T ₅) [°C]
TKOF (5 min)	133.0	100.0	100.0	816
Max continuous	120.0	100.0	100.0	776
OEI (30 min)	133.0	128.0	100.0	816
OEI (2-½-min)	141.0 *	136.0	101.6	850
15 sec transient	---	---	---	870
10 sec transient	152.0 *	105.0	101.8	---
5 sec transient (OEI)	---	150.0*	---	---
5 sec transient (starting)	---	---	---	940
2 sec transient (starting)	---	---	---	1 090

* EEC will limit available single-engine torque to 136%.



for model PWC PT6B-36A	Engine TQ limits [%]	Transmission TQ limits [%]	Gas generator speed limits (N ₁) [%]	PWR turbine inlet (T ₅)[°C]
TKOF (5 min)	133.0	100.0 **	100.0	816
Max continuous	120.0	100.0 **	100.0	776
OEI (30 min)	141.0 *	128.0	101.6	844
OEI (2-½- min)	---	136.0 *	---	---
10 sec transient	152.0 *	115.0 **	101.8	870
5 sec transient (OEI)	---	150.0 *	---	---
5 sec transient (starting)	---	---	---	940
2 sec transient (starting)	---	---	---	1 090
* EEC will limit available single-engine torque to 136%				
** EEC will limit available dual-engine torque to total of 202%				

for model PWC PT6B-36B	Engine TQ limits [%]	Transmission TQ limits [%]	Gas generator speed limits (N ₁) [%]	PWR turbine inlet (T ₅) [°C]
TKOF (5 min)	133.0	100.0 **	102.6	816
Max continuous	120.0	100.0 **	102.6	776
OEI (30 min)	141.0 *	128.0	104.2	844
OEI (2-½-min)	---	136.0 *	---	---
15 sec transient	---	---	---	870
10 sec transient	152.0 *	115.0 **	104.7	---
5 sec transient (OEI)	---	150.0 *	---	---
5 sec transient (starting)	---	---	---	940
2 sec transient (starting)	---	---	---	1 090
* EEC will limit available single-engine torque to 136%				
** EEC will limit available dual-engine torque to total of 202%				

5.3.2 Transmission Torque Limits refer to approved Rotorcraft Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

JP-4***/JP-5**/JP-8/Jet A*/Jet A1*/GB6537-94(RP-3)*
fuels with anti-ice additive can be used without
temperature limitation.

* fuels without anti-ice additive shall be mixed with
appropriate additive below +4°C (40°F) (see Note 1.)

** not to be used below -26°C (-15°F).

*** not to be used above 10 000 ft PA (3 048 m)

6.2 Oil

PWA 521, Type I or II

Low temperature limits for starting:

Type I oil usable to -54°C (-65°F)

Type II oil usable to -40°C (-40°F)

For approved oil brands, see PWC Service Bulletin
n° 11001

6.3 Additives

See Note 1.



7. Fluid capacities
- 7.1 Fuel Fuel tank capacity: 1 084 litres (286.4 US gal)
Usable fuel: 1 064 litres (281.2 US gal)
See Note 2.
- 7.2 Oil 7.6 litres (2.0 US gal) per engine
- 7.3 Coolant System Capacity n/a
8. Air Speed Limitations $V_{NE\ PWR\ ON}$: 155 KIAS,
see Flight Manual for variations of V_{NE} with gross weight and density altitude.
With PT6B-36A, or PT6B-36B, V_{NE} above 10 000 ft DA (3 048 m) at actual gross weights greater than 4 990 kg (11 000 lb) is V_{BROC}
 V_{LE}/V_{LO} : 130 KIAS
 $V_{NE\ PWR\ OFF}$: 136 KIAS.
Below 36.3 kg (80 lb) fuel remaining per tank, avoid sustained pitch down attitudes in excess of 5° nose down.
9. Rotor Speed Limitations
- Power on:
- | | | |
|---------|------------|-------------------|
| Maximum | 108% N_r | (316 rpm) |
| Maximum | 110% N_r | with TQ below 26% |
| Minimum | 106% N_r | (AEO) |
| Minimum | 100% N_r | (OEI) |
- Power off:
- | | | |
|---------|------------|-----------|
| Maximum | 115% N_r | (336 rpm) |
| Minimum | 91% N_r | (266 rpm) |
- Transient:
Refer to approved RFM
10. Maximum Operating Altitude and Temperature
- 10.1 Altitude DA
- with PT6B-36:
- | | |
|-----------------------|---------------------------|
| Enroute: | 10 000 ft (3 048 m) |
| Take-off and landing: | Cat B 10 000 ft (3 048 m) |
| | Cat A n/a |
- with PT6B-36A or PT6B-36B:
- | | |
|-----------------------|---------------------------|
| Enroute: | 15 000 ft (4 572 m) |
| Take-off and landing: | Cat B 15 000 ft (4 572 m) |
| | Cat A 5 000 ft (1 524 m) |
- 10.2 Temperature 34.4°C (-30°F) to ISA+38°C, not to exceed +49°C (120°F) with bleed air Environmental Control Unit (ECU) 'OFF', or not installed.
-34.4°C (-30°F) to ISA+35°C, not to exceed +43°C (109°F) with bleed air ECU 'ON'.
11. Operating Limitations Category A and B
VFR day and night,
IFR,
Non-icing conditions
12. Maximum Mass
- With:
- | | | |
|---------------|----------|-------------|
| PWC PT6B-36: | 5 171 kg | (11 400 lb) |
| PWC PT6B-36A: | 5 307 kg | (11 700 lb) |
| PWC PT6B-36B: | 5 307 kg | (11 700 lb) |
13. Centre of Gravity Range Refer to approved RFM
14. Datum The datum line (STA 0) is located at 5 080 mm (200.0 in)



	forward of main rotor centroid
15. Levelling Means	Levelling plate at STA 176, BL 35, L.H. and plumb line from upper frame of the aft doorway.
16. Minimum Flight Crew	2 pilots (IFR) 1 pilot (IFR) when appropriately equipped and operating to approved RFM or RFMS (see Note 3.) 1 pilot (VFR)
17. Maximum Passenger Seating Capacity	1 cockpit, 12 cabin
18. Passenger Emergency Exit	2, one on each side of the passenger cabin
19. Maximum Baggage/ Cargo Loads	Baggage compartments: 272 kg (600 lb) Cabin compartment: Cargo floor loading 366 kg/m ² (75 lb/ft ²)
20. Rotor Blade Control Movement	For rigging information refer to Maintenance Manual
21. Auxiliary Power Unit (APU)	n/a
22. Life-limited Parts	see Chapter 4 of the Maintenance Manual
23. Wheels and Tyres	see Illustrated Parts Catalogue (IPC)

IV. Operating and Service Instructions

1. Flight Manual
Rotorcraft Flight Manual, Model S-76B Helicopter (Publication SA 4047-76B-1), EASA-approved.
In addition,
for aircraft equipped with PT6B-36 engines:
Supplement n° 2 (Publication SA 4047-76B-1).
For aircraft equipped with PT6B-36B engines:
Supplement n° 11 (Publication SA 4047-76B-1).
2. Maintenance Manual
SA 4047-76B-2 (see Note 4.)
3. Structural Repair Manual
SA 4047-76-12
4. Weight and Balance Manual
n/a
5. Illustrated Parts Catalogue
SA 4047-76B-4
6. Service Letters and Service Bulletins
As published by Sikorsky and EASA-approved
7. Required Equipment
The basic required equipment, as prescribed in the applicable airworthiness regulations (see Certification Basis), must be installed in the helicopter for certification.
In addition, the following items of equipment are required. Special airspeed indicator approved for use on S-76B only: - Aerosonic Part No. 20020-11293

V. Notes (Model S-76B only)

1. Anti-icing protection additives meeting MIL-D-27686 or equivalent must be present in concentrations of 0.035% to 0.15% by volume.
2. Current weight and balance report, including list of equipment included in certificated empty weight, and loading instructions, when necessary, must be provided for each helicopter at the time of original certification.
See Flight Manual loading section for variations of fuel weight and moment-arm with variations of fuel and fuel quantity.
3. 1-pilot IFR is approved for Model S-76B when appropriately equipped and operating in accordance with a RFM or RFMS that allows such operation.
For Model S-76B, 1-pilot IFR operation requirements include installation of an SPZ 7000 Digital Automatic Flight Control System by STC or an SPZ 7600 Digital Automatic Flight Control System by STC, or as



V. Notes (Model S-76B only)

optional equipment.

The following Honeywell RFMS relates to 1-pilot IFR operations with the SPZ 7000:

- Model S-76B SA 4047-76B-1 Honeywell Supp No. 27-5120-10-01

4. Information essential to the proper maintenance of the helicopter is contained in the Sikorsky S-76B Maintenance Manual, Publication SA 4047-76B-2, and the Airworthiness Limitations and Inspection Requirements Manual SA 4047-76B-2-1 provided with each helicopter. The values of retirement (service) life contained in Chapter 4 of the Airworthiness Limitations and Inspection Requirements Manual SA 4047-76B-2-1 or inspection intervals cannot be increased without EASA approval (see Note 5.)
5. All helicopters must comply with Airworthiness Limitations section, dated 7 June 1988, or subsequent EASA-approved revisions of Airworthiness Limitations and Inspection Requirements Manual SA 4047-76B-2-1.
6. The Model S-76B with Pratt & Whitney Canada engines PT6B-36, PT6B-36A or PT6-36B engines, without modification precludes the intentional discharge into the atmosphere of liquid fuel from the nozzle manifolds resulting from the process of engine shutdown.
7. The Model S-76B (with PT6B-36) rotorcraft installations employ electronic engine controls commonly named Full-Authority Digital Electronic Controls (FADEC), and are recognized to be potentially more susceptible to electromagnetic interference (EMI) than rotorcraft containing non-electronic controls. EMI may be the result of radiated or conducted interference. For this reason, aircraft modifications that add or change systems that have the potential for EMI must be either qualified to an EASA acceptable standard or tested at the time of installation for interference to the FADEC. This type of testing must employ the particular FADEC's internal diagnostic monitoring equipment as well as external diagnostic monitoring equipment, and must be EASA-approved.
8. Manufacturer's serial numbers:
76005, 760262, 760299, 760303, 760310 through 760363, 760365, 760367, 760368, 760372, 760379 through 760382, 760387, 760391, 760393, 760395, 760399, 760403, 760404, 760409, 760410, 760413, 760414, 760416, 760425, 760427 through 760430, 760433, 760437, 760439, 760441 through 760445, 760447 through 760452, 760454, 760455, 760458, 760462, 760465, 760507, 762976 are eligible.

* * *



SECTION 3: S-76C

I. General

- | | |
|---|--|
| 1. Type/ Model/ Variant | |
| 1.1 Type | S-76 |
| 1.2 Model | S-76C |
| 1.3 Variant | --- |
| 2. Airworthiness Category | Large Rotorcraft, Category A and B |
| 3. Manufacturer | Sikorsky Aircraft Corporation
6900 Main Street
Stratford, Connecticut 06497-9129
U.S.A. |
| 4. Type Certification Application Date | to FAA: 15 June 1989 |
| 5. State of Design Authority | Federal Aviation Administration (FAA), USA |
| 6. State of Design Type Certificate Date | by FAA: 15 March 1991
by CAA UK: 27 September 1991 |
| 7. State of Design Type Certificate n° | by FAA: H1NE
by CAA UK: FR 10 |
| 8. State of Design Type Certificate Data Sheet n° | by FAA: H1NE
by CAA UK: FR 10 |
| 9. EASA Type Certification Date | 28 September 2003,
in accordance with CR (EU) 1702/2003, Article 2, 3., (a),
(i), 2 nd bullet, 2 nd indented bullet. |

II. Certification Basis

- Reference Date for determining the applicable requirements 15 June 1989
- Airworthiness Requirements

FAR Part 29, 1 February 1965, Amdts. 29-1 through 29-11; in addition, portions of Amdt. 29-12, specifically, 29.67, 29.71, 29.75, 29.141, 29.173, 29.175, 29.931, 29.1189(a)(2), 29.1555(c)(2), 29.1557(c), portions of Amdt. 29-13, specifically 29.965, and portions of Amdt. 29-21, specifically 29.1, 29.79, 29.1517, and 29.1587

Compliance with the following optional requirements has been established:
Ditching provisions FAR 29.563 including 29.801 and 29.807(d) of Amdt. 29-12 and excluding 29.1411, 29.1415, and 29.1561 when emergency flotation gear, p/n 76076-02002, is installed. For ditching approval compliance with the operating rules and FAR 29.1411, 29.1415, and 29.1561 must be shown.
Cargo hook FAR 29.865 including 29.25 of Amdt. 29-12, when cargo hook system, p/n 76255-02000, is installed. For external load operations, FAR 133, including Amdts. 1-4.

With Arriel 1S1 Engine Configuration:
29.1325 of Amdt. 29-24, Amdt. 29-26, specifically 29.67(a)(2)&(3)(b), 29.923(k), 29.1045(c), 29.1047(a)(4) and 29.1521(h); 29.811 of Amdt. 29-30, and Amdt. 36-14 of FAR 36, Appendix H.

With Arriel 2S1 Engine Configuration:
29.1325 of Amdt. 29-24, Amdt. 29-26, specifically 29.67(a)(2)&(3)(b), 29.923(k), 29.1045(c), 29.1047(a)(4) and 29.1521(h); 29.811 of Amdt. 29-30, Amdt. 29-34, specifically 29.67(a)(1)(i), 29.923(a),(b)(1)&(3), 29.1143(f), 29.1305(a)(24)&(25), 29.1521(i)&(j) and 29.1549(e) and Amdt. 36-20 of FAR 36, Appendix H.

With Arriel 2S2 Engine Configuration:
29.1325 of Amdt. 29-24, Amdt. 29-26, specifically 29.67(a)(2)&(3)(b), 29.923(k), 29.1045(c), 29.1047(a)(4) and 29.1521(h); 29.811 of Amdt. 29-30, Amdt. 29-34, specifically 29.67(a)(1)(i), 29.923(a),(b)(1)&(3), 29.1143(f), 29.1305(a)(24)&(25), 29.1521(i)&(j) and 29.1549(e) and Amdt. 36-20 of FAR 36, Appendix H



- | | |
|--|--|
| 3. Special Conditions | 29-82-NE-3 (Docket No. 17721),
dated 27 March 1978.
29-ASW-3 (Docket No. 91-ASW-1),
dated 30 January 1992
29-ASW-16 (Docket No. 96-ASW-2),
dated 26 August 1996
29-004-SC (Docket No. SW004),
dated 17 June 1998. |
| 4. Exemptions | none |
| 5. Deviations | none |
| 6. Equivalent Safety Findings | FAR 29.173(b) |
| 7. Requirements elected to comply | none |
| 8. Environmental Protection Requirements | |
| 8.1 Noise Requirements | See TCDSN EASA.IM.R.113 |
| 8.2 Emission Requirements | n/a |
| 9. Operational Suitability Data (OSD) | see SECTION 5 below |

III. Technical Characteristics and Operational Limitations

- | | |
|------------------------------------|--|
| 1. Type Design Definition | Sikorsky Drawings:
76076-10600-041, Arriel 1S1.
76076-10660-011 (modified), Arriel 2S1 up to s/n 760493.
76076-20660-041, Arriel 2S1 s/n 760494 and subsequent.
Note: Arriel 1S1 engines may be replaced with 2S1
engines in accordance with Sikorsky kit 76070-30662-011 |
| 2. Description | Twin gas turbine engine; four-bladed single main rotor,
four-bladed tail rotor; helicopter with tricycle-type
landing gear; designed to carry up to 13 passengers and a
pilot. |
| 3. Equipment | Refer to Equipment List in approved RFM |
| 4. Dimensions | |
| 4.1 Fuselage | Length: 13.22 m
Width hull: 2.13 m
Width stabilizer: 3.05 m
Height: 3.58 m |
| 4.2 Main Rotor | Diameter: 13.41 m |
| 4.3 Tail Rotor | Diameter: 2.44 m |
| 5. Engine | |
| 5.1 Model | Safran Helicopter Engines (former: Turboméca)
2 x Model Arriel 1S1, or
2 x Model Arriel 2S1, or
2 x Model Arriel 2S2 (see Note 1.) |
| 5.2 Type Certificate | Arriel 1 Series:
EASA TC/TCDS n°: EASA.E.073
FAA TC/TCDS n°: E19EU
Arriel 2 Series:
EASA TC/TCDS n°: EASA.E.001
FAA TC/TCDS n°: E00054EN |
| 5.3 Limitations | |
| 5.3.1 Installed Engine Limitations | Sea level static / standard day |



for model Arriel 1S1	Engine TQ limits [%]	Transmission TQ limits [%]	Gas generator speed limits (N ₁) [%]	PWR turbine inlet (T ₅) [°C]
TKOF (5min)	104.0	100.0	100.0	845
Max continuous	104.0	100.0	100.0	845
OEI (max cons)	110.0	128.0	102.2 *	868
OEI (2-½-min)	127.0	136.0	102.7 **	885
20 sec transient (OEI)	148.0	---	105.35 ***	920
20 sec transient	---	---	105.35 ***	---
10 sec transient	---	115.0	---	---
5 sec transient (OEI)	---	150.0	---	---
5 sec transient (starting)	---	---	---	865
* Cockpit gauge biased to read 101.2%				
** Cockpit gauge biased to read 101.7%				
*** Cockpit gauge biased to read 104.35%				

for model Arriel 2S1	Engine TQ limits [%]	Transmission TQ limits [%]	Gas generator speed limits (N ₁) [%]	PWR turbine inlet (T ₅) [°C]
TKOF (5 min)	103.7	100.0	101.2 *	912
30 min (see Note 8.)	103.7	100.0	101.2 *	912
Max continuous	103.7	100.0	99.0 **	877
OEI (30 sec)	134.6	136.0	105.8 ****	1 000
OEI (2 min)	126.7	136.0	102.4 ***	941
OEI (max cons)	116.7	128.0	101.2 *	912
20 sec transient	160.4	---	102.3 ***	---
10 sec transient	---	115.0	---	---
10 sec transient (starting)	---	---	---	865
5 sec transient (OEI)	---	150.0	---	---
* Cockpit gauge biased to read 100.0%				
** Cockpit gauge biased to read 97.8%				
*** Cockpit gauge biased to read 101.2%				
**** Cockpit gauge biased to read 104.6%				

for model Arriel 2S2	Engine TQ limits [%]	Transmission TQ limits [%]	Gas generator speed limits (N ₁) [%]	PWR turbine inlet (T ₅) [°C]
TKOF (5 min)	103.7	100.0	101.88 *	930
30 min (see Note 8.)	103.7	100.0	101.88 *	930
Max continuous	103.7	100.0	99.71 **	893
OEI (30 sec)	134.9	136.0	105.89 ***	996
OEI (2 min)	127.0	136.0	102.38 ****	944
OEI (max cons)	115.0	128.0	101.28 *****	926
20 sec transient	160.4	---	102.98 *****	---
10 sec transient	---	115.0	---	---
10 sec transient (starting)	---	---	---	840



5 sec transient OEI	---	150.0	---	---
*	Cockpit gauge biased to read 100.0%			
**	Cockpit gauge biased to read 97.8%			
***	Cockpit gauge biased to read 103.9%			
****	Cockpit gauge biased to read 100.5%			
*****	Cockpit gauge biased to read 99.4%			
*****	Cockpit gauge biased to read 101.1%			

Note: Engine TQ 100% = 891.6 Nm (657.6 lb-ft)

5.3.2 Transmission Torque Limits Refer to approved RFM

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

JP-4***/JP-5**/JP-8/Jet A*/Jet A1*/Jet B*/
GB6537-94(RP-3)*

Fuels with anti-ice additive can be used without temperature limitation.

- * Fuels without anti-ice additive shall be mixed with appropriate additive below +4°C (40°F), see Note 2.
- ** Not to be used below -26°C (-15°F).
- *** Applicable to Arriel 1S1 only.

6.2 Oil

5 cst synthetic oil for normal use.

For approved types and brands, refer to:
S-76C Flight Manual, Sikorsky p/n SA 4047-76C-1 (W/Arriel 1S1 engine configuration), or,
S-76C Flight Manual, Sikorsky p/n SA 4047-76C-10 and SA 4047-76C-14 (W/Arriel 2S1 engine configuration), or,
SA 4047-76C-15 (W/Arriel 2S2 engine configuration).

6.3 Additives

See Note 2.

7. Fluid capacities

7.1 Fuel

Fuel tank capacity: 1 084 litres (286.4 US gal)
Usable fuel: 1 064 litres (281.2 US gal)
see Note 3.

7.2 Oil

4.8 litres (1.27 US gal) per engine

7.3 Coolant System Capacity

n/a

8. Air Speed Limitations

$V_{NE PWR ON}$: 155 KIAS, see RFM for variations of V_{NE} with temperature and PA.

V_{LE}/V_{LO} : 130 KIAS

$V_{NE pwr off}$: 136 KIAS

Below 36.3 kg (80 lb) fuel remaining per tank, avoid sustained pitch down attitudes in excess of 5° nose down. Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations.

9. Rotor Speed Limitations

Power on:

Maximum 108% N_r (316 rpm),
except 109% N_r
for less than 20 sec with 2S1 only.

Maximum 108% N_r (316 rpm),
except with TQ below 26%, then
110% N_r with 1S1 only.

Minimum 106% N_r (AEO)

Minimum 100% N_r (OEI)

Power off:

Maximum 115% N_r (336 rpm)

Minimum 91% N_r (266 rpm)

Transient:



Refer to approved RFM

10. Maximum Operating Altitude and Temperature

10.1 Altitude DA

with Arriel 1S1:

Enroute: 15 000 ft (4 572 m)

Take-off and landing: Cat B 11 000 ft (3 353 m)

Cat A 5 000 ft (1 524 m)

with Arriel 2S1 or 2S2:

Enroute: 15 000 ft (4 572 m)

Take-off and landing: Cat B 15 000 ft (4 572 m)

Cat A 5 000 ft (1 524 m)

10.2 Temperature

-34.4°C (-30°F) to ISA+37°C, not to exceed +49°C (120°F)

11. Operating Limitations

Category A and B
VFR day and night,
IFR,
Non-icing conditions

12. Maximum Mass

5 307 kg (11 700 lb)

13. Centre of Gravity Range

Refer to approved RFM

14. Datum

The datum line (STA 0) is located at 5 080 mm (200.0 in) forward of main rotor centroid.

15. Levelling Means

Levelling plate at STA 176, BL 35, L.H. and plumb line from upper frame of the aft doorway.

16. Minimum Flight Crew

2 pilots (IFR)

1 pilot (IFR) when appropriately equipped and operating to approved RFM or RFMS (see Note 4.).

1 pilot (VFR).

17. Maximum Passenger Seating Capacity

1 cockpit, 12 cabin

18. Passenger Emergency Exit

2, one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

Baggage compartments:

272 kg (600 lb)

Cabin compartment:

Cargo floor loading 366 kg/m² (75 lb/ft²)

20. Rotor Blade Control Movement

For rigging information refer to Maintenance Manual

21. Auxiliary Power Unit (APU)

n/a

22. Life-limited Parts

See Chapter 4 of the Maintenance Manual

23. Wheels and Tyres

See Illustrated Parts Catalogue (IPC)

IV. Operating and Service Instructions

1. Flight Manual

with Arriel 1S1 engines:

Rotorcraft Flight Manual, Model S-76C Helicopter (Publication SA 4047-76C-1), EASA-approved.

with Arriel 2S1 engines:

Rotorcraft Flight Manual, Model S-76C Helicopter (Publication SA 4047-76C-10) for aircraft serial numbers prior to 760511, EASA-approved.

For aircraft s/n 760511 and subsequent Rotorcraft Flight Manual (Publication SA 4047-76C-14), EASA-approved.

with Arriel 2S2 engines:

Rotorcraft Flight Manual, Model S-76C Helicopter



(Publication SA 4047-76C-15) for aircraft s/n 760607 and subsequent, EASA-approved.

- | | | |
|----|---------------------------------------|--|
| 2. | Maintenance Manual | SA 4047-76C-2 (see Note 5.) |
| 3. | Structural Repair Manual | SA 4047-76-12 |
| 4. | Weight and Balance Manual | n/a |
| 5. | Illustrated Parts Catalogue | SA 4047-76C-4 |
| 6. | Service Letters and Service Bulletins | As published by Sikorsky and EASA-approved |
| 7. | Required Equipment | |

The basic required equipment, as prescribed in the applicable airworthiness regulations (see Certification Basis), must be installed in the helicopter for certification.

In addition, the following items of equipment are required.

Special airspeed indicator approved for use on S-76C:

Aerosonic Part No. 20020-11293.

V. Notes (Model S-76C only)

1. Installation of Turboméca Arriel 2S2 engines requires barrier filter p/n 76302-07800 or EASA-approved alternate.
2. Anti-icing protection additives meeting MIL-D-27686 or equivalent must be present in concentrations of 0.10% to 0.15% by volume.
3. Current weight and balance report, including list of equipment included in certificated empty weight, and loading instructions, when necessary, must be provided for each helicopter at the time of original certification.
See Flight Manual loading section for variations of fuel weight and moment-arm with variations of fuel and fuel quantity
4. 1-pilot IFR is approved for Models S-76C when appropriately equipped and operating in accordance with a Rotorcraft Flight Manual or Rotorcraft Flight Manual Supplement that allows such operation. For Models S-76C, 1-pilot IFR operation requirements include installation of an SPZ-7600 Digital Automatic Flight Control System by STC or as optional equipment. The following Sikorsky Rotorcraft Flight Manuals and Supplements relate to 1-pilot IFR operations with the SPZ-7600:
 - Model S-76C Rotorcraft Flight Manual document no. SA 4047-76C-14
 - Model S-76C Rotorcraft Flight Manual document no. SA 4047-76C-15
 - Model S-76C SA 4047-76C-1 Supp S-15
 - Model S-76C+ SA 4047-76C-10 Supp S-15
 - Model S-76C+ SA 4047-76C-10 Supp 88
5. Information essential to the proper maintenance of the helicopter is contained in the S-76C Maintenance Manual, Publication SA 4047-76C-2, and the Airworthiness Limitations and Inspection Requirements Sections, Chapters 4 and 5, of SA 4047-76C-2-1, provided with each helicopter. The values of retirement (service) life contained in Chapter 4 of the Maintenance Manual or inspection intervals cannot be increased without EASA approval (see Note 6.)
6. All helicopters must comply with the Airworthiness Limitations Section, Chapter 4, dated 19 March 1991, of Maintenance Manual SA 4047-76C-2-1, or subsequent EASA-approved revisions.
7. Emissions control device Kit Part Number 76070-30603-011, installed in accordance with CSN 76-192, is approved for installation on the Model S-76C helicopter with the Turboméca Arriel 1S1 engine installation. This device prevents the intentional discharge into the atmosphere of liquid fuel from the fuel nozzle manifolds resulting from the process of engine shutdown following normal flight or ground operations. The Model S-76C helicopter with Turboméca Arriel 2S1 and 2S2 engines, without modification preclude the intentional discharge into the atmosphere of liquid fuel from the nozzle manifolds resulting from the process of engine shutdown.
8. The use of the 30-minute power rating requires Supplement No. 12 to the Model S-76C Rotorcraft Flight Manual, document no. SA 4047-76C-10, or document no. SA 4047-76C-14 or Supplement No. 46 to the Model S-76C RFM, document no. SA 4047-76C-15.



V. Notes (Model S-76C only)

Engine Airworthiness Limitations requirements are as specified in Type Certificate Data Sheet No. E00054EN.

9. The Model S-76C (Turboméca Arriel 2S1 and Arriel 2S2 engines) rotorcraft installations employ electronic engine controls commonly named Full-Authority Digital Electronic Controls (FADEC), and are recognized to be potentially more susceptible to electromagnetic interference (EMI) than rotorcraft containing non-electronic controls. EMI may be the result of radiated or conducted interference. For this reason, aircraft modifications that add or change systems that have the potential for EMI must be either qualified to an EASA acceptable standard or tested at the time of installation for interference to the FADEC. This type of testing must employ the particular FADEC's internal diagnostic monitoring equipment as well as external diagnostic monitoring equipment, and must be EASA-approved.
10. Manufacturer's serial numbers:
- Sikorsky Aircraft Corporation under production certificate n° 105:
760269, 760375 through 760378, 760383 through 760386, 760388 through 760390, 760392, 760394, 760396 through 760398, 760400 through 760402, 760405 through 760408, 760411, 760412, 760415, 760417 through 760424, 760426, 760431, 760432, 760434 through 760436, 760438, 760440, 760446, 760453, 760456, 760457, 760459 through 760461, 760463, 760464, 760466 through 760506, 760508 through 760634, 760636, 760637, 760639, 760641, 760643, 760645, 760647 through 760652, 760654 through 760657, 760659 through 760685, 760687 through 760689, 760691 through 760693, 760695 through 760700, 760702, 760703, 760705 through 760707, 760709, 760710, 760712, 760713, 760715, 760716, 760718, 760719, 760721, 760722, 760724, 760725, 760727, 760728, 760730, 760732, 760733, 760735, 760736, 760738, 760742, 760744, 760749, 760752, 760761, 760769, 760794, 760797, 760805 through 760822 are eligible.
- Keystone Helicopter Corporation for production under type certificate only:
760635, 760638, 760640, 760642, 760644, 760646, 760653 and 760658 are eligible.
- Keystone Helicopter Corporation under production certificate n° 121NE:
760686*, 760690, 760694, 760701, 760704, 760708, 760711, 760714, 760717, 760720, 760723, 760726, 760729, 760731, 760734, 760737, 760739 through 760741, 760743, 760745 through 760748, 760750, 760751, 760753 through 760760, 760762 through 760768, 760770 through 760793, 760795, 760796, 760798 through 760804 are eligible.
- * 760686 originally designated as eligible for production by Keystone Helicopter Corporation under type certificate only and re-designated upon issuance of production certificate n° 121NE.

* * *



SECTION 4: S-76D

I. General

- | | |
|---|--|
| 1. Type/ Model/ Variant | |
| 1.1 Type | S-76 |
| 1.2 Model | S-76D |
| 1.3 Variant | --- |
| 2. Airworthiness Category | Large Rotorcraft, Category A and B |
| 3. Manufacturer | Sikorsky Aircraft Corporation
6900 Main Street
Stratford, Connecticut 06497-9129
U.S.A. |
| 4. Type Certification Application Date | to FAA: 4 June 2003
to EASA: 22 January 2009 |
| 5. State of Design Authority | Federal Aviation Administration (FAA), USA |
| 6. State of Design Type Certificate Date | 12 October 2012 |
| 7. State of Design Type Certificate n° | H1NE |
| 8. State of Design Type Certificate Data Sheet n° | H1NE |
| 9. EASA Type Certification Date | 25 February 2015 |

II. Certification Basis

- | | |
|---|-------------|
| 1. Reference Date for determining the applicable requirements | 4 June 2003 |
| 2. Airworthiness Requirements | |

CS-29 Amdt. 2 as follows:

29.21, 29.25, 29.27, 29.29, 29.31, 29.33, 29.45, 29.49, 29.51, 29.53, 29.55, 29.59, 29.60, 29.61, 29.62, 29.63, 29.64, 29.65, 29.67, 29.71, 29.75, 29.77, 29.79, 29.81, 29.83, 29.85, 29.87, 29.141, 29.143, 29.151, 29.161, 29.171, 29.173, 29.175, 29.177, 29.181, 29.231, 29.235, 29.239, 29.241, 29.251, 29.301, 29.303, 29.305, 29.307 (main and tail rotor blades only), 29.309, 29.321, 29.337, 29.339, 29.341, 29.351, 29.361, 29.395, 29.397, 29.399, 29.411, 29.471, 29.473, 29.475, 29.477, 29.479, 29.481, 29.483, 29.485, 29.493, 29.547, 29.549, 29.551, 29.561(a)(d), 29.563, 29.571 (main and tail rotor blades only), 29.601, 29.602, 29.603, 29.605, 29.607, 29.609, 29.610, 29.611, 29.613, 29.619, 29.621, 29.623, 29.629, 29.653, 29.659, 29.661, 29.663, 29.672, 29.673, 29.674, 29.675, 29.681, 29.683, 29.685, 29.687, 29.691, 29.695, 29.723, 29.725, 29.727, 29.729, 29.731, 29.733, 29.735, 29.771, 29.773, 29.775, 29.777, 29.779, 29.783, 29.801, 29.803, 29.805, 29.807, 29.809, 29.811, 29.812(a)(c)(d)(e)(f), 29.813, 29.831, 29.851, 29.853, 29.855, 29.861, 29.863, 29.871, 29.873, 29.901, 29.903, 29.907, 29.917, 29.921, 29.931, 29.939, 29.951, 29.953, 29.954, 29.955, 29.959, 29.961, 29.965, 29.969, 29.971, 29.977, 29.993, 29.995, 29.997, 29.999, 29.1011, 29.1013, 29.1015, 29.1017, 29.1019, 29.1021, 29.1023, 29.1027, 29.1041, 29.1043, 29.1045, 29.1047, 29.1049, 29.1091, 29.1093, 29.1103, 29.1121, 29.1123, 29.1141, 29.1143, 29.1145, 29.1151, 29.1163, 29.1165, 29.1181, 29.1183, 29.1185, 29.1187, 29.1189, 29.1191, 29.1193, 29.1194, 29.1195, 29.1197, 29.1199, 29.1201, 29.1203, 29.1301, 29.1303, 29.1305, 29.1307, 29.1309 (new avionics, AFCS, and Electrical Power Generation and Distribution System only), 29.1321, 29.1322, 29.1323, 29.1325, 29.1327, 29.1329, 29.1331, 29.1333, 29.1335, 29.1337, 29.1351, 29.1353, 29.1355, 29.1357, 29.1359, 29.1363, 29.1381, 29.1383, 29.1385, 29.1387, 29.1389, 29.1391, 29.1393, 29.1395, 29.1397, 29.1401, 29.1411, 29.1413, 29.1415, 29.1431, 29.1435, 29.1461, 29.1501, 29.1503, 29.1505, 29.1509, 29.1517, 29.1519, 29.1521, 29.1523, 29.1525, 29.1527, 29.1529, 29.1541, 29.1543, 29.1545, 29.1547, 29.1549, 29.1551, 29.1553, 29.1555, 29.1557, 29.1559, 29.1561, 29.1565, 29.1581, 29.1583, 29.1585, 29.1587, 29.1589, A29.1, A29.2, A29.3, A29.4, B29.1, B29.2, B29.3, B29.4, B29.5, B29.6, B29.7, B29.8, B29.9, C29.

Except 14 CFR FAR Part 29 Amdts.:

29.1 at 29-21, 29.2 at 29-32, 29.307 at 29-4 (all but main and tail rotor blades), 29.391 at 29-0, 29.561(b)(c) at 29-0, 29.561(c) at 29-29 (for engine installation only), 29.571 at 29-20 (all but main and



tail rotor blades only), 29.625 at 29-0, 29.671 at 29-0, 29.785 at 29-0, 29.787 at 29-12, 29.865 at 29-12 (for External Cargo Hook ODA-TC-76-193, option 76255-02000 only), 29.908 at 29-13, 29.923(a)(b) at 29-34, 29.923(c) - (o) at 29-26, 29.927 at 29-3, 29.963 at 29-26, 29.967 at 29-0, 29.973 at 29-0, 29.975 at 29-26, 29.1309 at 29-14 (all but new avionics, AFCS, and Electrical Power Generation and Distribution System), 29.1317 at 29-49, 29.1457 at 29-52, 29.1459 at 29-52, E29.1 at 29-49.

CS-29 Regulations not adopted or not applicable for initial TC:

29.427, 29.497, 29.501, 29.505, 29.511, 29.519, 29.521, 29.562, 29.631, 29.679, 29.737, 29.751, 29.753, 29.755, 29.757, 29.812(b), 29.815, 29.833, 29.859, 29.865 for HEC, 29.935, 29.952, 29.957, 29.979, 29.991, 29.1001, 29.1025, 29.1101, 29.1105, 29.1107, 29.1109, 29.1125, 29.1142, 29.1147, 29.1157, 29.1159, 29.1399, 29.1419, 29.1433, 29.1439, 29.1522, D29.

Ditching: see Note 7.

- | | |
|--|---|
| 3. Special Conditions | 29-004-SC (Docket No. SW004),
dated 17 June 1998
(see FAA Issue Paper P02, dated 5 September 2012) |
| 4. Exemptions | none |
| 5. Deviations | none |
| 6. Equivalent Safety Findings | TD1509BO-R-S-1 for 14CFR Part 29.1401(d) at Amdt. 29-11; Anti-collision light system installed in accordance with Sikorsky Drawing 33776-92603.

AT01847BO-R-P-1 for 14CFR Part 29.1305 at Amdt. 29-40 and 14CFR Part 29.1549 at Amdt. 29-34; Use of a Power Limit Indicator (PLI) as the primary means for indicating/setting power. |
| 7. Requirements elected to comply | CS 29 Amdt. 2 (see II.2.) |
| 8. Environmental Protection Requirements | |
| 8.1 Noise Requirements | See TCDSN EASA.IM.R.113 |
| 8.2 Emission Requirements | n/a |
| 9. Operational Suitability Data (OSD) | see SECTION 5 below |

III. Technical Characteristics and Operational Limitations

- | | |
|---------------------------|---|
| 1. Type Design Definition | Sikorsky drawings
76000-00003 Air Vehicle
76076-00000 Top Option Collector
12076-00D000 Type Certification Option Collector
76000-70060 General CEO Collector
76080-70002 EIS Mods/Installation Collector
S-76D Configuration, EASA-approved:
EASA Familiarization and Validation Summary, Doc. n° SER-76040409, Rev. 2, dated 22 January 2015, or later approved revisions. |
| 2. Description | Twin gas turbine engine; four-bladed single main rotor, four-bladed tail rotor; helicopter with tricycle-type landing gear; designed to carry a pilot and up to 14 passengers. |
| 3. Equipment | Refer to Equipment List in approved RFM |
| 4. Dimensions | |
| 4.1 Fuselage | Length: 13.22 m
Width hull: 2.13 m
Width stabilizer: 3.05 m
Height: 3.58 m |



- 4.2 Main Rotor Diameter: 13.43 m
- 4.3 Tail Rotor Diameter: 2.44 m
- 5. Engine
 - 5.1 Model Pratt & Whitney Canada
2 x Model PW210S
 - 5.2 Type Certificate FAA TC/TCDS n°: E00083EN
EASA TC/TCDS n°: EASA.IM.E.126
 - 5.3 Limitations

5.3.1 Installed Engine Limitations

Operating condition	Time	Engine TQ limits[%]	ITT [°C]	N _G [%]	N _P [%]
TKOF AEO	5 min	100 ^(1.)	932-924 ^{(1.)(2.)}	100.0 ^(1.)	108
HIP AEO ^(3.)	30 min	100 ^(1.)	924 ^(1.)	100.0 ^(1.)	108
Max cons AEO	---	100 ^(1.)	886	98.8	108
Transient AEO	20 sec	136	980	101.8	118
30 sec OEI	30 sec	140 ^(1.)	1 006 ^(1.)	102.7 ^(1.)	108
2 min OEI	2 min	136 ^(1.)	980 ^(1.)	101.8 ^(1.)	108
Max cons OEI	---	128 ^(1.)	924 ^(1.)	100.0 ^(1.)	108
Transient OEI	5 sec	145 (30 sec OEI)	1 015 (30 sec OEI)	103.3 (30 sec OEI)	115
		141 (2 min OEI)	989 (2 min OEI)	102.3 (2 min OEI)	
Transient OEI	20 sec	136 (max cons OEI)	980 (max cons OEI)	101.8 (max cons OEI)	118
GND idle	20 sec	---	790	---	---
	---	---	760	---	---
Starting	2 sec	---	825	---	---
	60 sec	---	750 ^(4.)	---	---

Notes:

1. Boxes with bold borders and numbers denote EEC controlled limiter values.
2. When the ITT increases above 886°C, the Take-off and maximum continuous OEI ITT limits will decrease from 932°C to 924°C over a 3-minute period. The limits increase back to 932°C when the ITT decreases below 886°C.
3. Hovering at Increased Power (HIP):
Use of Take-off limits during hover operations in excess of 5 minutes.
4. ITT limiting occurs at 740°C. An automatic abort will be commanded (on ground only) if the ITT reaches 765°C.
5. Limit in parentheses refers to currently selected OEI limit.

Note: Engine TQ 100% = 891.6 Nm (657.6 lb-ft)

5.3.2 Transmission Torque Limits Refer to approved RFM



6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

Issuing Authority	Type ^(1.)	Specification	Fuel temperature range ^(2.)
Commercial	Jet A	ASTM D1655	-40°C (-40°F) to 45°C (113°F)
	Jet A-1	ASTM D1655	
	No. 3 Jet Fuel	PRC GB6537	
Military	JP-5	MIL-DTL-5624	
	JP-8	MIL-DTL-83133	

Notes:

- Any approved fuel or mixture of approved fuels may be used. Refer to the Pratt & Whitney Canada PW210S Maintenance Manual for a complete list of acceptable and alternate/emergency fuels.
- Fuel anti-icing additive must be used below 4°C (40°F) for fuels supplied without anti-icing additive (see Note 1.).

6.2 Oil

Brand	Supplier
AeroShell Turbine Oil 500 AeroShell Turbine Oil 560	Shell Oil Company
BP Turbo Oil 2380	Air BP
Castrol 5000	Castrol Ltd.
Mobil Jet Oil II	Exxon Mobil Chemical Company
Turbonycoil 600 II	Nyco S.A.

6.3 Additives

see Note 1.

7. Fluid capacities

7.1 Fuel

Helicopter s/n 761004 through 761036:
 Fuel tank capacity: 1 128 litres (298 US gal)
 Usable fuel: 1 097 litres (290 US gal)
 Helicopter s/n 761037 and subsequent:
 Fuel tank capacity: 1 105 litres (292 US gal)
 Usable fuel: 1 075 litres (284 US gal)
 See Note 2.

7.2 Oil

4.85 litres (1.28 US gal) per engine

7.3 Coolant System Capacity

n/a

8. Air Speed Limitations

$V_{NE\ PWR\ ON}$: 155 KIAS
 see RFM for variations of $V_{NE\ PWR\ ON}$ with DA.
 $V_{LE\ V_{LO}}$: 130 KIAS
 $V_{NE\ PWR\ OFF}$: 136 KIAS
 see RFM for variations of $V_{NE\ PWR\ OFF}$ with DA.
 Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations.

9. Rotor Speed Limitations

Power on:
 Maximum: 115% N_r (336.95 rpm)
 Cautionary: 108-115% N_r
 Normal operation
 rotor speed (AEO): 106-108% N_r
 Cautionary (AEO): 91-106% N_r
 Normal operation



rotor speed (OEI above V_{BROC}):	106% to 108% N_r
Normal operation rotor speed (OEI up to V_{BROC}):	100% to 108% N_r
Cautionary (OEI):	91% to 100% N_r
Transient minimum:	91% N_r
Transient minimum at touchdown during OEI landing:	68% N_r
Power off: Maximum:	115% N_r
Normal:	91-115% N_r
Minimum:	91% N_r
Transient minimum:	74% N_r
Transient minimum at touchdown while executing autorotation landing:	68% N_r

10. Maximum Operating Altitude and Temperature

10.1 Altitude DA

Enroute:	15 000 ft (4 570 m) DA
Take-off and landing:	Cat B 13 000 ft (3 960 m) DA Cat A 3 000 ft (914 m) horizontal, Cat A 5 000 ft (1 524 m) vertical, For Cat A see Note 8.

10.2 Temperature

-35°C (-31°F) to ISA+34°C, not to exceed +45°C (113°F),
see Note 10.

11. Operating Limitations

Category A (see Note 8), 'elevated helipads' excluded
Category B
VFR day and night,
IFR,
Non-icing conditions

12. Maximum Mass

5 386 kg (11 875 lb) take-off
5 443 kg (12 000 lb) for ground operations only

13. Centre of Gravity Range

Refer to approved RFM
Max. lateral C.G. limit for ground operations only:
5 386 kg to 5 443 kg 48 mm
(11 875 lb to 12 000 lb ±1.9 in)

14. Datum

The datum line (STA 0) is located at 5 080 mm (200.0 in)
forward of main rotor centroid

15. Levelling Means

Levelling plate at STA 176, B.L. 35, L.H. and plumb line
from upper frame of the aft doorway

16. Minimum Flight Crew

1 pilot (VFR)
1 pilot (IFR) with V400
2 pilots (IFR)
2 pilots for Category A operation

17. Maximum Passenger Seating Capacity

9, see Note 3.

18. Passenger Emergency Exit

2, one on each side of the cockpit
2, one Type IV on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

Baggage compartments:
272 kg (600 lb)



- Cabin compartment:
Cargo floor loading 976 kg/m² (200 lb/ft²)
- 20. Rotor Blade Control Movement For rigging information refer to Maintenance Manual
 - 21. Auxiliary Power Unit (APU) n/a
 - 22. Life-limited Parts See Chapter 4 of the Maintenance Manual
 - 23. Wheels and Tyres See Illustrated Parts Catalogue (IPC)

IV. Operating and Service Instructions

- 1. Flight Manual Rotorcraft Flight Manual, Model S-76D Helicopter, Publication SA S76D-RFM-000, Part 1, Revision 2, EASA-approved, or later approved revisions. EASA-approved RFMS are listed in SER 76040409, Rev 2, or later approved revision (see III.1. Type Design Definition).
- 2. Maintenance Manual Airworthiness Limitations and Inspection Requirements: SA S76D-AWL-000, Rev. 4, EASA-approved, or later approved revisions. Maintenance Manual: SA S76D-AMM-000, or later accepted revisions EASA-accepted MMS are listed in SER 76040409, Rev. 2, or later approved revision (see III.1. Type Design Definition).
- 3. Structural Repair Manual SA 4047-76-12
- 4. Weight and Balance Manual n/a
- 5. Illustrated Parts Catalogue SA S76D-IPC-000
- 6. Service Letters and Service Bulletins As published by Sikorsky and EASA-approved
- 7. Required Equipment The basic required equipment, as prescribed in the applicable airworthiness regulations (see Certification Basis), must be installed in the helicopter for certification.

V. Notes (Model S-76D only)

- 1. The following additives and concentrations are applicable:

Anti-Icing Additives	
Additive (Trade Name)	Max concentration allowed [% by volume]
Diethylene Glycol Monomethyl Ether as defined in MIL-DTL-85470, or ASTM D4171 Type III	0.15%
Ethylene Glycol Monoethyl Ether (Fluid I) as defined in GOST 8313	0.15%
Mixture of 50% Ethylene Glycol Monoethyl Ether (Fluid I) and 50% Methyl Alcohol (Fluid I-M) as defined in TU 6-10-1458	0.3%

- 2. Current weight and balance report, including list of equipment included in certificated empty weight, and loading instructions, when necessary, must be provided for each helicopter at the time of original certification.
See Rotorcraft Flight Manual loading section for variations of fuel weight and moment-arm with variations of fuel and fuel quantity.
- 3. Seating arrangements:
 - for 7 passengers maximum (1 in cockpit, 6 in cabin) defined by Sikorsky drawing 12076-00D000 have



been approved by EASA. These arrangements are shown in the loading information section of the approved RFM. Additional seating arrangements or related passenger provisions may be approved in accordance with the Certification Basis.

- for 9 passengers maximum (1 in cockpit, 8 in cabin) defined by ODA-TC-76-222 (DeLuxe VIP Interior) have been approved by EASA. These arrangements are shown in the loading information section of the approved RFMS.

Additional seating arrangements or related passenger provisions may be approved in accordance with the Certification Basis.

4. The Model S-76D with Pratt & Whitney Canada PW210S engines, without modification preclude the intentional discharge into the atmosphere of liquid fuel from the nozzle manifolds resulting from the process of engine shutdown.
5. For the Model S-76D, use of the 30-minute power rating is addressed in RFM SA S76D-RFM-000. Engine Airworthiness Limitations requirements are as specified in Type Certificate Data Sheet No. EASA.IM.E.126.
6. The Model S-76D (Pratt & Whitney Canada PW210S engines) employs electronic engine controls that are recognized to be more susceptible to Electromagnetic Interference (EMI) than manual (non-electronic) controls used on other rotorcraft. EMI may be the result of radiated or conducted interference. For this reason, modifications that add or change systems that have the potential for EMI, must either be qualified to an EASA-acceptable standard or tested at the time of installation for interference to the engine controls. This type of testing must employ the particular engine control's diagnostic techniques and external diagnostic techniques. This testing must be accomplished in accordance with an EASA approved alternate test plan.
7. Ditching: If emergency flotation gear, p/n 33776-92709, is installed, then compliance has also been shown to CS-29 Amendment 2 of 29.563, 29.801 (b), (c), (d) and (e) and 29.807 (b) and (d). For ditching approval, compliance with the operating rules and 29.1411, 29.1415, and 29.1561 must be shown.
8. Model S-76D is approved for Category A horizontal operations as defined within RFM publication SA 76D-RFM-00, Part 1, Rev. 2, or later EASA approved revision.
Model S-76D is approved for Category A vertical operations as defined within RFM Supplement No. DO5, Part 1, Rev. 1, dated 23 April 2015 with EASA specific pages B.1, B.2, 1-3 / (1-4 blank), 2-3, all Rev. 'Basic', or later EASA approved revision.
9. Manufacturer's serial numbers:
Sikorsky Aircraft Corporation under Production Certificate Number 105:
761004 and up are eligible
10. Refer to RFM SA S76D-RFM-000 Revision 5, or later approved revision, Part 1, Section 2 for Cold Weather Procedures.

* * *



SECTION 5: OPERATIONAL SUITABILITY DATA (OSD)

The OSD elements listed below are approved by the European Aviation Safety Agency as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

I. OSD Certification Basis

- I.1 Reference Date for determining the applicable OSD requirements
For S-76A, S-76B, S-76C: n/a
For S-76D: 22 July 2013
- I.2 MMEL - Certification Basis
For S-76A, S-76B, S-76C: n/a
For S-76D: JAR-MMEL, Section 1, Subpart A and B, Amdt. 1, dated 1 August 2005
- I.3 Flight Crew Data - Certification Basis
For S-76A, S-76B, S-76C: n/a
For S-76D: Common Procedure Document (CPD), dated 10 June 2004 for conducting Operational Evaluation Boards
- I.4 SIM Data - Certification Basis
reserved
- I.5 Maintenance Certifying Staff Data - Certification Basis
reserved

II. OSD Elements

- II.1 MMEL
For S-76A, S-76B, S-76C: n/a
For S-76D: European Aviation Safety Agency, Master Minimum Equipment List, Sikorsky Aircraft Corporation, S-76D (H1NE), SA S76D-MMEL-000, Revision –, dated 11 November 2015, or later approved revisions.
- II.2 Flight Crew Data
For S-76A, S-76B, S-76C: n/a
For S-76D: EASA Operational Suitability Data (OSD), Flight Crew, Sikorsky Aircraft Corporation S-76D, Revision 'OSD Report', dated 8 December 2015, or later approved revisions.
- II.3 SIM Data
reserved
- II.4 Maintenance Certifying Staff Data
reserved



SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

AEO	All Engines Operating	MMS	Maintenance Manual Supplement
AMDT.	Amendment	OEI	One Engine Inoperative
AMM	Aircraft Maintenance Manual	p/n	Part Number
AMM	Aircraft Maintenance Manual	PA	Pressure Altitude
AWL	Airworthiness Limitations	PWR	Power
B.L.	Butt Line	RFM	Rotorcraft Flight Manual
cons	Continuous	RFMS	Rotorcraft Flight Manual Supplement
CR	(European) Commission Regulation	s/n	Serial Number
DA	Density Altitude	sec	Seconds
EEC	Electronic Engine Control	STA	Station
FAA	Federal Aviation Administration	TCDSN	Type Certificate Data Sheet for Noise
HIP	Hovering at Increased Power	TKOF	Take-Off
IFR	Instrument Flight Rules	TQ	Torque
IPC	Illustrated Parts Catalogue	V _{BROC}	Best Rate of Climb Speed
ITT	Inter-Turbine Temperature	VFR	Visual Flight Rules
L.H.	Left Hand	V _{LE/LO}	Gear Extended/Gear Operating Speed
LDG	Landing	V _{NE}	Never Exceed Speed
max	Maximum		
min	Minute		

II. Type Certificate Holder Record

Type Certificate Holder	Period
Sikorsky Aircraft Corporation 6900 Main Street Stratford, CT 06497-9129 U.S.A.	Since 18 November 1969

III. Change Record

Issue	Date	Changes	TC issue
Issue 1	25 Feb 2015	For S-76D: Initial EASA Issue; For S-76A, B, C: transfer of grandfathered FAA TCDS H1NE into EASA format	Initial EASA Issue 25 Feb 2015
Issue 2	16 Dec 2015	OSD elements added	---
Issue 3	25 May 2016	For S-76D: V400 and LPV added; extended max. operating altitude and temperature; vertical Cat A added	---
Issue 4	20 Jan 2020	For S-76D: increased 'Maximum Mass for ground operations only' added; For all: lb-kg conversion checked/corrected in accordance with ICAO Annex 5; Noise reference updated	---

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