

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

H7EU  
Revision 30

AGUSTA  
Model A109  
Model A109A  
Model A109A II  
Model A109C  
Model A109K2  
Model A109E  
Model A119  
Model A109S  
Model AW119 MKII  
Model AW109SP

June 14, 2021

**TYPE CERTIFICATE DATA SHEET NO. H7EU**

This data sheet, which is part of Type Certificate No. **H7EU**, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: Leonardo S.p.a.  
Helicopter Division  
Piazza Monte Grappa, 4  
00195 – Rome, Italy

Type Certificate Holder Record: Agusta S.p.A. was previous name of TC holder. The company name change history is presented below.

Type Certificate Holder	Period
Costruzioni Aeronautiche Giovanni Agusta Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	28 May 1975 – 29 November 1988
Agusta S.p.A. Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	30 November 1988 - 19 December 1996
Agusta un’azienda di Finmeccanica S.p.A. Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	20 December 1996 - 27 December 1999
Agusta S.p.A. Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	28 December 1999 - 31 May 2011
AgustaWestland S.p.A. Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	1 June 2011 - 30 July 2014
AgustaWestland S.p.A. Piazza Monte Grappa, 4; 00195 Roma - Italy	31 July 2014 - 31 December 2015
Finmeccanica S.p.A., Helicopter Division Piazza Monte Grappa, 4; 00195 Roma - Italy	1 January 2016 - 14 July 2016
Leonardo S.p.A., Helicopters Piazza Monte Grappa, 4; 00195 Roma - Italy	since 15 July 2016

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**I. Model A109 (Normal Category Helicopter) approved June 1, 1975.**

Engines. Two (2) Detroit Diesel Allison Division of General Motors Corporation Model 250-C20 turboshaft engines.

Bendix gas producer fuel control DP-N1.  
Bendix power turbine governor AL-AA1.

Fuel. For all temperatures:  
MIL-T-5624 grade JP-4  
ASTM D-1655 Jet B

For temperature above -18°C (0°F):  
MIL-T-5624 grade JP-5  
ASTM D-1655 Jet A  
ASTM D-1655 Jet A1  
See Note 4

Engine Limits. All-engine operation

Takeoff (5 minutes)

Torque	113% (302 lb.ft) (346 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	102 % (52000 rpm)
Gas temperature	793°C (1460°F)

Maximum Continuous

Torque	113% (302 lb.ft)(346 shp)
Output shaft speed (N2)	95-100% (5716-6016)
Gas producer speed (N1)	101% (51490 rpm)
Gas temperature	737°C (1358°F)

Single-engine operation (emergency)

Takeoff (5 minutes)

Torque	131% (350 lb.ft)(400 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	102% (52000 rpm)
Gas temperature	793°C (1460°F)

Maximum Continuous

Torque	126% (336 lb.ft)(385 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	101% (51490 rpm)
Gas temperature	777°C (1430°F)

(See FAA-approved Helicopter Flight Manual for rpm and temperature transient limits).

Rotor Limits.

Power Off

Maximum	110 % (424 rpm)
Minimum	90 % (346 rpm)

Power On

Maximum	100 % (385 rpm)
Minimum	95 % (365 rpm)

Rotor Speed Warning.

Low Speed	95 % (365 rpm)
High Speed	105 % (404 rpm)

Airspeed Limits. Never Exceed Speed ( $V_{NE}$ ) 168 kts IAS

For reduction of  $V_{NE}$  with altitude and OAT, see RAI-approved Helicopter Flight Manual.

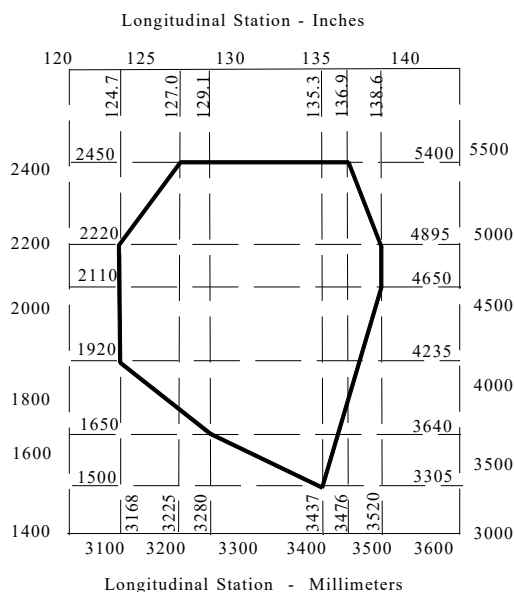
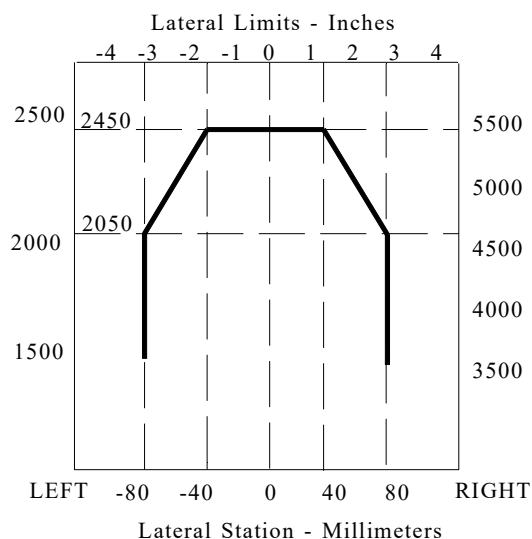
Maximum Gear Operating Speed ( $V_{LO}$ )	120 kts	IAS
Maximum Gear Extended Speed ( $V_{LE}$ )	120 kts	IAS
Maximum Forward Touchdown Speed	40 kts	IAS

## I. Model A109 (cont'd)

C.G. Range (Gear Down).

## Longitudinal Limits

(Gear retraction moment is a 4 kgm (347 lb. in) moving CG forward).

CG Range (Gear Down).Empty Weight & CG Range.

(None)

Maximum Weight.

2450 Kg. (5400 lb)

Minimum Crew.

One pilot

Maximum Passenger.

- 7: For aircraft conforming with Agusta Report 109-06-01.
- 1 at sta 1650 mm (65 in)
  - 3 at sta 2485 mm (98 in)
  - 3 at sta 3265 mm (129 in)
- 0: For aircraft in "green" delivery configuration conforming with Agusta Report 109-06-03.

<u>Maximum Baggage.</u>	150 Kg. (330 lb) at sta 4920 mm (194 in) Maximum floor loading for baggage compartment: 500 Kg/m <sup>2</sup> (102 lb/ft <sup>2</sup> ) Maximum load per tie-down fitting: 91 Kg. (200 lb.)
<u>Fuel Capacity.</u>	Total : 148.4 U.S. Gal. (559 lit.) in two tanks of 74.2 U.S. Gal. (279.5 lit.) each, at sta. 3650 mm (144.0 in.)  Usable : 146 U.S. Gal. (550 lit.) <i>See NOTE 1 for unusable fuel.</i>
<u>Oil Capacity Engines.</u>	2 U.S. Gal. (7.7 lit.) each engine, at sta. 3053 mm (136 in) <i>See NOTE 1 for undrainable oil.</i>
<u>Maximum Operating Altitude.</u>	4,560 m (15,000 ft)
<u>Rotor Blade and Control Movements.</u>	For rigging information refer to the Model A109 Maintenance Manual.

## II. Model A109A (Normal Category Helicopter), approved April 2, 1976.

<u>Engines.</u>	Two (2) Detroit Diesel Allison Division of General Motors Corporation Model 250-C20B turboshaft engines.  Bendix gas producer fuel control DP-N2.  Bendix power turbine governor AL-AA1.
<u>Fuel.</u>	For all temperatures: MIL-T-5624 grade JP-4 ASTM D-1655 Jet B  For temperatures above -18°C (0°F): MIL-T-5624 grade JP-5 ASTM D-1655 Jet A ASTM D-1655 Jet A1 See NOTE 4
<u>Engine Limits.</u>	All engine operation Takeoff (5 minutes) Torque 113% (302 lb.ft) (346 shp) Output shaft speed (N2) 95-100% (5715-6016 rpm) Gas producer speed (N1) 105% (53518 rpm) Gas temperature 810°C (1490°F) Maximum continuous Torque 113% (302 lb.ft) (346 shp) Output shaft speed (N2) 95-100% (5715-6016 rpm) Gas producer speed (N1) 105% (53518 rpm) Gas temperature 738°C (1360°F)  Single-engine operation (emergency) Takeoff (5 minutes) Torque 131% (350 lb. ft) (400 shp) Output shaft speed (N2) 95-100% (5715-6016 rpm) Gas producer speed (N1) 105% (53518 rpm) Gas temperature 810°C (1490°F)  Maximum continuous Torque 126% (336 lb.ft) (385 shp) Output shaft speed (N2) 95-100% (5715-6016 rpm) Gas producer speed (N1) 105% (53518 rpm) Gas temperature 810°C (1490°F) <i>(See FAA-approved Helicopter Flight Manual for rpm and temperature transient limits).</i>
II. Model A109A (Normal Category Helicopter) (cont'd).	

Rotor Limits.

Power off:

Maximum	110%	(424 rpm)
Minimum	90%	(346 rpm)

Power on:

Maximum	100%	(385 rpm)
Minimum	95%	(365 rpm)

Rotor Speed Warning.

Low speed	95%	(365 rpm)
High speed	105%	(404 rpm)

Airspeed Limits.Never exceed speed ( $V_{NE}$ ) 158 knots IAS (See NOTE 7)For reduction of  $V_{NE}$  with altitude and OAT, see RAI-approved

Helicopter Flight Manual.

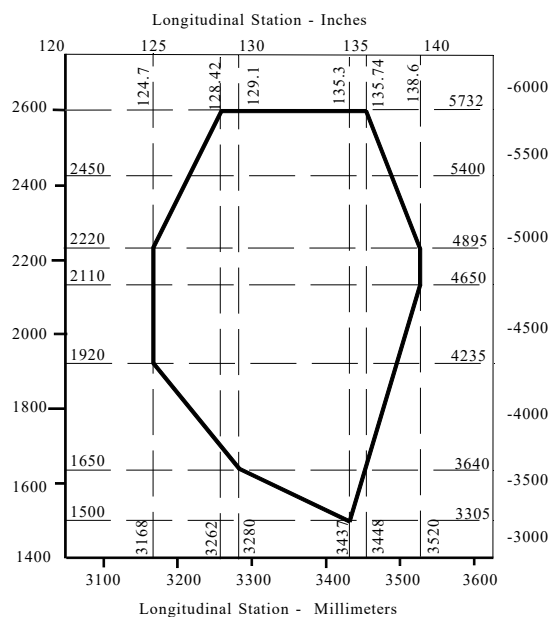
Maximum Gear Operating Speed ( $V_{LO}$ ) 120 kts IASMaximum Gear Extended Speed ( $V_{LE}$ ) 120 kts IAS

Maximum Forward Touchdown Speed 40 kts IAS

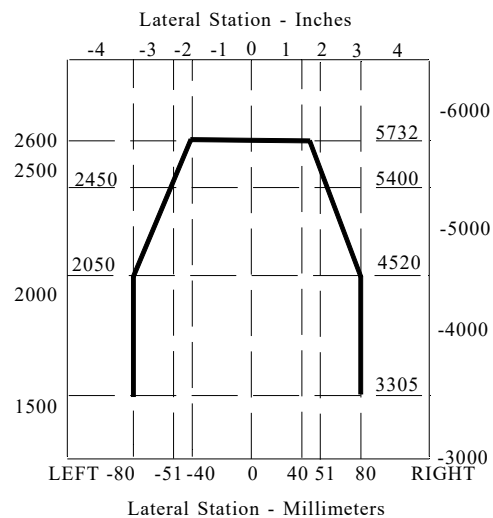
CG Range (Gear Down).

Longitudinal Limits

(Gear retraction moment is 4 kgm (347 lb.in) moving CG forward)

CG Range (Gear Down).

Lateral Limits



**II. Model A109A (Normal Category Helicopter) (cont'd).**

<u>Empty Weight &amp; CG Range.</u>	(None)
<u>Maximum Weight.</u>	2600 kg (5732 lb.) (See NOTE 7)
<u>Minimum Crew.</u>	One pilot at Sta. 1630 mm (64 in.) to 1695 mm (67 in.) See NOTE 5.
<u>Maximum Passengers.</u>	<p>7: For aircraft conforming with Agusta Report: 109-06-02.  1 at Sta. 1630 mm (64 in) to 1695 mm (67 in) (See NOTE 4).  3 at Sta. 2485 mm (98 in)  3 at Sta. 3265 mm (129 in)</p> <p>0: For aircraft in "green" delivery configuration conforming with Agusta Report 109-06-07</p>
<u>Maximum Baggage.</u>	<p>150 kg. (330 lb.) at sta 4920 mm (194 in)</p> <p>Maximum floor loading for baggage compartment:  500 kg/m<sup>2</sup> (102 lb/ft<sup>2</sup>)</p> <p>Maximum load per tie-down fitting:  91 kg (200 lb.)</p>
<u>Fuel Capacity.</u>	<p>Total: 148 U.S. Gal. (559 lit.) in two tanks of 74.2 U.S. Gal. (279.5 lit.) each,  at sta 3652 mm (144.0 in.)</p> <p>Usable: 146 U.S. Gal. (550 lit.)</p> <p><i>See NOTE 1 for unusable fuel.</i></p>
<u>Oil Capacity Engines.</u>	<p>2 U.S. Gal. (7.7 lit.) each engine, at sta 3053 mm (120 in).  <i>See NOTE 1 for undrainable oil.</i></p>
<u>Oil Capacity Transmission.</u>	<p>3.2 U.S. Gal. (12 lit.) at sta 3460 mm (136 in)  <i>See NOTE 1 for undrainable oil.</i></p>
<u>Maximum Operating Altitude.</u>	2,432 m. (8,000 ft.) <i>See NOTE 7.</i>
<u>Rotor Blade and Control Movements.</u>	For rigging information refer to the Model A109A/A109AII/A109C Maintenance Manual.

**III. Model A109A II (Normal Category Helicopter), approved December 4, 1981.**

<u>Engines.</u>	<p>Two (2) Detroit Diesel Allison Division of General Motors Corporation Model 250-C20B or 250-C20R/1 turboshaft engines.</p> <p>Bendix gas producer fuel control DP-N2.  Bendix power turbine governor AL-AA1.</p>
<u>Fuel.</u>	<p>For all temperatures:  MIL-T-5624 grade JP-4  ASTM D-1655 Jet B</p> <p>For temperatures above -18°C (0°F):  MIL-T-5624 grade JP-5  ASTM D-1655 Jet A  ASTM D-1655 Jet A1  <i>See NOTE 4</i></p>

## III. Model A109A II (Normal Category Helicopter) (cont'd)

Engine Limits.

## All Engine Operation

## Takeoff (5 minutes)

Torque	97% (323 lb.ft) (370 shp) (-C20R/1 engine)
Torque	121% (323 lb.ft) (370 shp) (-C20B engine)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	810°C (1490°F)

## Maximum continuous

Torque	97% (323 lb.ft) (370 shp) (-C20R/1 engine)
Torque	121% (323 lb.ft) (370 shp) (-C20B engine)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	738°C (1360 °F) (-C20B engine)
Gas temperature	752°C (1358°F) (-C20R/1 engine)

## Single-engine operation (emergency)

Torque	118% (400 lb.ft) (450 shp) (-C20R/1 engine)
Torque	137% (350 lb.ft) (420 shp) (-C20B engine)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	810°C (1490°F)

(See the A109AII Helicopter Flight Manual for rpm and temperature transient limits).

Rotor Limits.

## Power off

Maximum	110%	(424 rpm)
Minimum	90%	(346 rpm)

## Power on

Maximum	100%	(385 rpm)
Minimum	95%	(365 rpm)

Rotor Speed Warning.

Low speed	95%	(365 rpm)
High speed	105%	(404 rpm)

Airspeed Limits.Never exceed speed ( $V_{NE}$ ) 168 knots IAS

For reduction of  $V_{NE}$  with altitude and OAT, see the A109AII Helicopter Flight Manual.

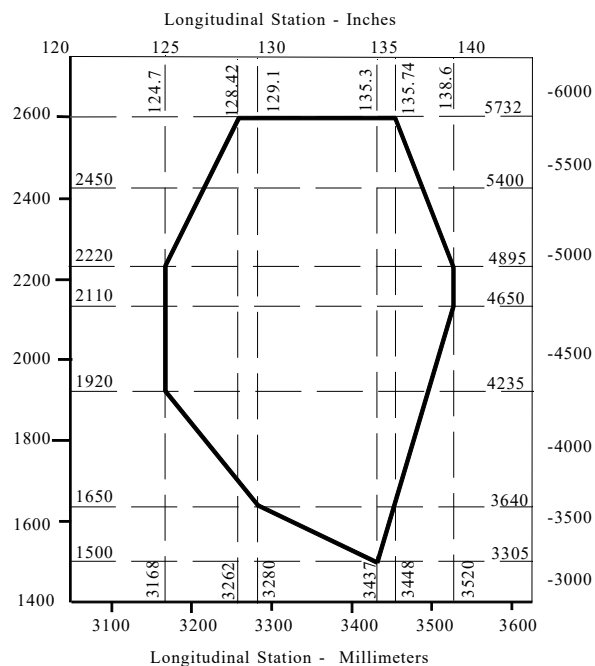
Maximum Gear Operating Speed ( $V_{LO}$ )	120 kts	IAS
Maximum Gear Extended Speed ( $V_{LE}$ )	120 kts	IAS
Maximum Forward Touchdown Speed	40 kts	IAS

## III. Model A109A II (Normal Category Helicopter) (cont'd)

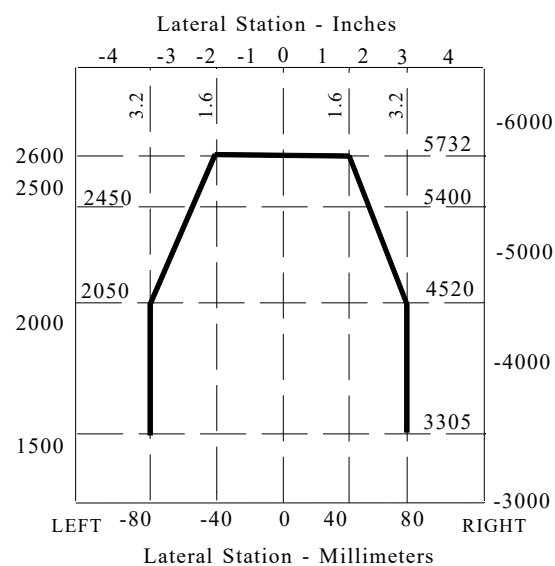
CG Range (Gear Down).

## Longitudinal Limits

Gear retraction moment is 4 kgm (347 lb.in.) moving CG forward)

CG Range (Gear Down).

## Lateral Limits

Empty Weight & CG Range

(None)

Maximum Weight.

2600 kg (5732 lb.)

Minimum Crew.

One pilot at Sta. 1565 mm (62 in.) to 1630 mm (64 in.)



**III. Model A109A II (Normal Category Helicopter) (cont'd)**

<u>Maximum Passengers.</u>	<p>7: For aircraft conforming with Agusta Report 109-06-29.  1 at sta. 1565 mm (62 in) to 1630 mm (64 in)  3 at sta. 2420 mm (95 in) Facing FWD or 3 at sta 2455 (97 in) Facing AFT  3 at sta. 3200 mm (126 in)</p> <p>0: For aircraft in "green" delivery configuration conforming with Agusta Report 109-06-07. See Appendix 15 of required flight manual.</p>
<u>Maximum Baggage.</u>	<p>150 kg. (330 lb.) at sta 4920 mm (194 in)  Maximum floor loading for baggage compartment:  500 kg/m<sup>2</sup> (102 lb/ft<sup>2</sup>)  Maximum load per tie-down fitting:  91 kg (200 lb.)</p>
<u>Fuel Capacity.</u>	<p>Total: 148.4 U.S. Gal. (559 lit.) in two tanks of 74.2 U.S. Gal. (279.5 lit.) each, at sta 3652 mm (144.0 in.)</p> <p>Usable: 146 U.S. Gal. (550 lit.)  <i>See NOTE 1 for unusable fuel</i>  <i>See NOTE 9 for fuel capacity with auxiliary fuel tank installation.</i></p>
<u>Oil Capacity Engines.</u>	<p>2 U.S. Gal. (7.7 lit.) each engine, at sta 3053 mm (120 in)  <i>See NOTE 1 for undrainable oil.</i></p>
<u>Oil Capacity Altitude.</u>	<p>3.2 U.S. Gal. (12 lit.) at sta 3460 mm (136 in)  <i>See NOTE 1 for undrainable oil.</i></p>
<u>Maximum Operating Altitude.</u>	4,560 m. (15,000 ft.)
<u>Rotor Blade Control Movements.</u>	For rigging information refer to the Model A109A/A109AII/A109C Maintenance Manual.

**IV. Model A109C (Normal Category Helicopter), approved August 10, 1989.**

<u>Engines.</u>	<p>Two (2) Detroit Diesel Allison Division of General Motors Corporation Model 250-C20R/1 turboshaft engines.</p> <p>Bendix gas producer fuel control DP-N2.</p> <p>Bendix power turbine governor AL-AA1.</p>
<u>Fuel.</u>	<p>For all temperatures:  MIL-T-5624 grade JP-4  ASTM D-1655 Jet B</p> <p>For temperature above -18°C (0°F):  MIL-T-5624 grade JP-5  ASTM D-1655 Jet A  ASTM D-1655 Jet A1  See NOTE 4</p>

## IV. Model A109C (Normal Category Helicopter) (cont'd)

Engine Limits.

## All Engine Operation

## Takeoff (5 minutes)

Torque	104% (345 lb.ft) (395 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	810°C (1490°F)

## Maximum Continuous

Torque	100% (332 lb.ft) (380 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	752°C (1385°F)

## Single-engine operation (emergency)

Torque	118% (400 lb.ft) (450 shp)
Output shaft speed (N2)	95-100% (5715-6015 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	810°C (1490°F)

(See the A109C Helicopter Flight Manual for rpm and temperature transient limits).

Rotor Limits.

## Power off

Maximum	110%	(424 rpm)
Minimum	90%	(346 rpm)

## Power on

Maximum	100%	(385 rpm)
Minimum	95%	(365 rpm)

Rotor Speed Limits.

Low speed	95%	(365 rpm)
High speed	105%	(404 rpm)

Airspeed Limits.

Never exceed speed ( $V_{NE}$ ) 168 knots IAS

For reduction of  $V_{NE}$  with altitude and OAT, see the A109C Helicopter Flight Manual.

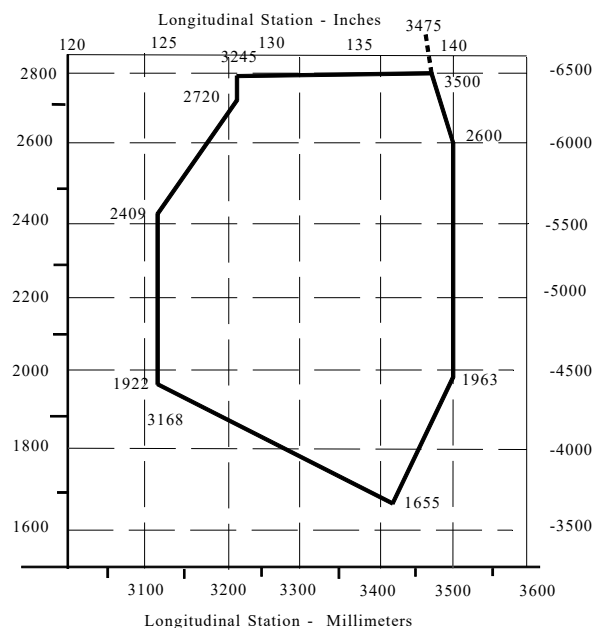
Maximum Gear Operating Speed ( $V_{LO}$ )	120 kts	IAS
Maximum Gear Extended Speed ( $V_{LE}$ )	120 kts	IAS
Maximum Forward Touchdown Speed	40 kts	IAS

## IV. Model A109C (Normal Category Helicopter) (cont'd)

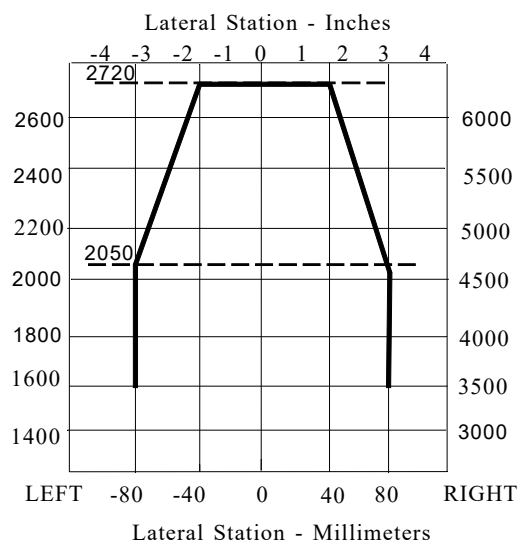
CG Range (Gear Down).

## Longitudinal Limits

Gear retraction moment is 4 kgm (347 lb. in.) moving CG forward

CG Range (Gear Down).

## Lateral Limits

Empty Weight & CG Range.

(None)

Maximum Weight.

2720 Kg (5997 lb)

Minimum Crew.

One pilot at Sta. 1565 mm (62 in.) to 1630 mm (64 in.)

**IV. Model A109C (Normal Category Helicopter) (cont'd)**

<u>Maximum Passengers.</u>	<p>7: For aircraft conforming with Agusta Report 109-06-67 1 at Sta. 1565 mm (62 in) to 1630 mm (64 in) <i>See NOTE 5.</i> 3 at Sta. 2420 mm (95 in) Facing FWD or 3 at Sta 2455 (97 in) Facing AFT 3 at Sta. 3200 mm (126 in)</p> <p>0: For aircraft in "green" delivery configuration conforming with Agusta Report 109-06-07. See Appendix 15 of required flight manual.</p>
<u>Maximum Baggage.</u>	<p>150 kg. (330 lb.) at Sta 4920 mm (194 in)</p> <p>Maximum floor loading for baggage compartment: 500 kg/m2 (102 lb/ft2)</p> <p>Maximum load per tie-down fitting: 91 kg (200 lb.)</p>
<u>Fuel Capacity.</u>	<p>Total: 148.4 U.S. Gal. (559 lit.) in two tanks of 74.2 U.S. Gal. (279.5 lit.) each, at sta 3652 mm (144.0 in.)</p> <p>Usable: 146 U.S. Gal (550 lit.) <i>See NOTE 1 for unusable fuel.</i> <i>See NOTE 9 for fuel capacity with auxiliary fuel tank installation.</i></p>
<u>Oil Capacity Engines.</u>	<p>2 U.S. Gal. (7.7 lit.) each engine, at sta 3053 mm (120 in) <i>See NOTE 1 for undrainable oil.</i></p>
<u>Oil Capacity Transmission.</u>	<p>3.2 U.S. Gal. (12 lit.) at sta 3460 mm (136 in) <i>See NOTE 1 for undrainable oil.</i></p>
<u>Maximum Operating Altitude.</u>	4,560 m. (15,000 ft.)
<u>Rotor Blade Control Movements.</u>	For rigging information refer to the Model A109A/A109AII/A109C Maintenance Manual.

**V. Model A109K2 (Normal Category Helicopter), approved January 15, 1993.**

<u>Engines.</u>	Two (2) Turbomeca Model Arriel 1K1 turboshaft engines.										
	Turbomeca Fuel Control Unit 0164348390.										
<u>Fuel.</u>	<p>For all temperatures: MIL-T-5624 grade JP-4, JP-5, ASTM D-1655 Jet A, A1, Jet B, MIL-T-83133 grade JP-8, AIR 3404-F43 (AVCAT)</p> <p>For detailed information see Section 1 of the A109K2 Flight Manual FAA approved.</p>										
<u>Engine/Xmsn Limits.</u>	<p>All Engine Operation</p> <table> <tr> <td>Takeoff</td><td></td></tr> <tr> <td>Torque</td><td>100% (900 SHP at N2 100%)</td></tr> <tr> <td>Output shaft speed (N2)</td><td>100% (6,000 rpm)</td></tr> <tr> <td>Gas producer speed (N1) (5 min.)</td><td>102% (52,836 rpm)</td></tr> <tr> <td>Gas temperature (5 min.) TOT</td><td>845°C (1,553°F)</td></tr> </table>	Takeoff		Torque	100% (900 SHP at N2 100%)	Output shaft speed (N2)	100% (6,000 rpm)	Gas producer speed (N1) (5 min.)	102% (52,836 rpm)	Gas temperature (5 min.) TOT	845°C (1,553°F)
Takeoff											
Torque	100% (900 SHP at N2 100%)										
Output shaft speed (N2)	100% (6,000 rpm)										
Gas producer speed (N1) (5 min.)	102% (52,836 rpm)										
Gas temperature (5 min.) TOT	845°C (1,553°F)										

## V. Model A109K2 (Normal Category Helicopter) (cont'd)

## Engine Limits (cont'd)

Maximum Continuous	
Torque	100% (900 SHP at N2 100%)
Output shaft speed (N2)	100% (6,000 rpm)
Gas producer speed (N1)	98.2% (50,868 rpm)
Gas temperature	775°C (1,427°F)

Single-engine operation (emergency)  
(2½ min.)

Torque:	71.1% (640 SHP at N2 100%)
Output Shaft Speed (N2)	100% (6000 rpm)
Gas Producer Speed (N1)	103.1% (53406 rpm)
Gas Temperature (TOT)	885°C (1625°F)
(30 min.)	
Gas Temperature (TOT)	845°C (1553°F)
Gas Producer Speed (N1)	102% (52,836 rpm)

Maximum Continuous	
Torque	62.2 (560 SHP at N2 100%)
Output Shaft Speed (N2)	100% (6000 rpm)
Gas Temperature	775°C (1,427°F)

(See the A109K2 Helicopter Flight Manual for rpm and temperature transient limits).

Rotor Limits.

Power off	
Maximum	110% (422 rpm)
Minimum	90% (346 rpm)
Power on	
Maximum	100% (384 rpm)
Minimum	97% (372 rpm)

Rotor Speed Warning.

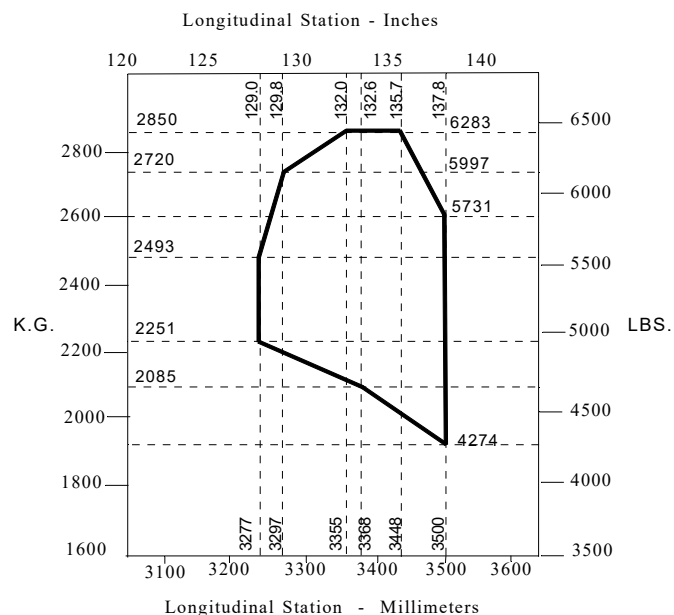
Low speed	95% (365 rpm)
High speed	105% (403 rpm)

Airspeed Limits.

Never exceed speed (Vne) 152 knots IAS  
 For reduction of Vne with altitude and OAT, see the A109K2 Helicopter Flight Manual.  
 Maximum Forward Touchdown Speed 40 Kts IAS to 2720 Kg  
 30 Kts IAS over 2720 Kg

CG Range.

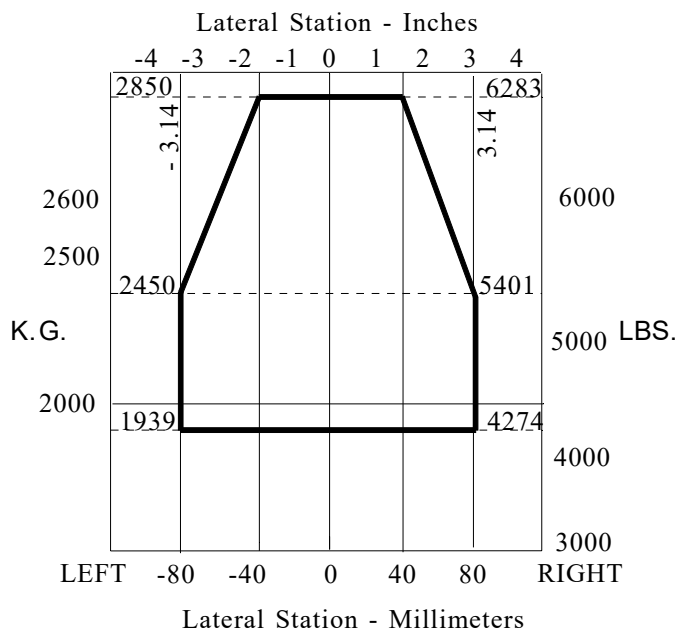
## Longitudinal Limits



## V. Model A109K2 (Normal Category Helicopter) (cont'd)

CG Range. (Cont'd)

## Lateral Limits

Empty Weight & CG Range.

(None)

Maximum Weight.

2,850 Kg (6,283 lb)

Minimum Crew.

One pilot at Sta 1,565 mm (62 in) to 1,630 mm (64 in)

Maximum Passengers.

7

Maximum Baggage.

150 Kg (330 lb) at Sta 4,920 mm (194 in)

Maximum floor loading for baggage compartment:

500 Kg/m<sup>2</sup> (102 lb/ft<sup>2</sup>)

Maximum load per tie-down fitting:

91 Kg (200 lb)

Fuel Capacity.

Total Usable: 123.6 US Gal (468 lt) at Sta 3,824 mm (150.56 in)

*See NOTE 1 for unusable fuel.**See NOTE 8 for fuel capacity with auxiliary fuel tank installation.*Oil Capacity Engines.

2 US Gal (7.7 lt) each engine, at Sta 3,311 mm (130 in)

*See NOTE 1 for undrainable oil.*Oil Capacity Transmission.

3.2 US Gal (12 lt) at sta 3,441 mm (135 in)

*See NOTE 1 for undrainable oil.*Maximum Operating Altitude.

4,560 m (15,000 ft)

Rotor Blade Control Movements

For rigging information refer to the Model A109K2 Maintenance Manual.

**VI. Model A109E (Normal Category Helicopter), approved August 26, 1996.**

Engines.

Two (2) Pratt & Whitney Canada Inc. PW206C turboshaft engines.  
FADEC control engines  
Two (2) Turbomeca Arrius 2K1: TM 2K1 turboshaft engines.  
FADEC control engines P/N 70 EMK 00520

Fuel PW 206C.

For all temperatures:  
ASTM D-1655 Jet A, A1, A2 Jet B.

Fuel TM 2K1.

ASTM D-1655 Jet A, A1  
Military specification (only for reference)  
MIL-T-5624 grade JP-4, JP-5,  
MIL-T-83133 grade JP-8,  
For detailed information see Section I of the applicable FAA approved A109E  
Flight Manual.

Engine/Xmsn Limits.  
(PW206C engine)

All Engine Operation  
Takeoff

Torque	122% (549 SHP at N2 100%)
Output shaft speed (N2)	102% (6120 rpm)
Gas producer speed (N1)	98.7% (57250 rpm)
Gas temperature (5 min.) TOT	863°C (1585.4°F)

Maximum Continuous

Torque	122% (549 SHP at N2 100%)
Output shaft speed (N2)	100% (6060 rpm)
Gas producer speed (N1)	97.4% (56500 rpm)
Gas temperature	820°C (1508°F)

Single-engine operation (emergency)  
2½ min.

Torque	142% (640 SHP at N2 100%)
Output Shaft Speed (N2)	102% (6120 rpm)
Gas Producer Speed (N1)	102.4% (59400 rpm)
Gas Temperature (TOT)	930°C (1706°F)

Maximum Continuous

Torque	138% (622 SHP at N2 100%)
Output shaft speed (N2)	100% (6060 rpm)
Gas producer speed (N1)	100.4% (58250 rpm)
Gas temperature	885°C (1625°F)

A109E helicopters that entered service prior to January 29, 1998 have a torque meter  
scale defined in Appendix 13 of the Rotorcraft Flight Manual.

(TM 2K1 engine)

All Engine Operation  
Takeoff

Torque	142% (640 SHP at N2 100%)
Output shaft speed (N2)	102% (6120 rpm)
Gas producer (ΔN1)	0%
Gas producer speed (N1)	54706 rpm
Gas temperature (5 min.)	TOT905°C (1661.4°F)

Maximum Continuous

Torque	127% (573 SHP at N2 100%)
Output shaft speed (N2)	100% (6060 rpm)
Gas producer (ΔN1)	-2.4%
Gas producer speed (N1)	53406 rpm
Gas temperature	866°C (1521°F)

## VI. Model A109E (Normal Category Helicopter) (cont'd)

Engine/Xmsn Limits. (cont'd)

Single-engine operation (emergency)		
2½ min.		
Torque		155% (700 SHP at N2 100%)
Output shaft speed (N2)		102% (6120 rpm)
Gas producer (ΔN1)		+2.6%
Gas producer speed (N1)		56113 rpm
Gas temperature		957°C (1521°F)
Maximum Continuous		
Torque		142% (640 SHP at N2 100%)
Output shaft speed (N2)		100% (6060 rpm)
Gas producer (ΔN1)		0%
Gas producer speed (N1)		54706 rpm
Gas temperature		905°C (1521°F)

Transmission Limits.

All Engine Operation (torque Tq)		
Maximum Continuous		100% (450 SHP)
Transient (6 second)		110% (495 SHP)
Single Engine Operation (torque Tq)		
Maximum Continuous		124% (558 SHP)
2 ½ minute		142% (640 SHP)
Transient (6 seconds)		156% (702 SHP)

Rotor Limits.

Power off		
Maximum		110% (422 rpm)
Minimum		90% (346 rpm)
Power on all engine operative		
Maximum		102% (394 rpm)
Minimum		99% (380 rpm)
Power on single engine (OEI)		
Maximum		102% (394 rpm)
Minimum		90% (346 rpm)

Rotor Speed Warning.

Low speed		
Power On - Maximum		95.5% (367 rpm)
Power Off - Minimum		89.5% (344 rpm)
High speed		105.5% (405 rpm)

Airspeed Limits.

Never exceed speed (Vne)		168 knots IAS power on
		128 knots IAS power off/OEI

For reduction of Vne with altitude and OAT, see the applicable FAA approved A109E Helicopter Flight Manual.

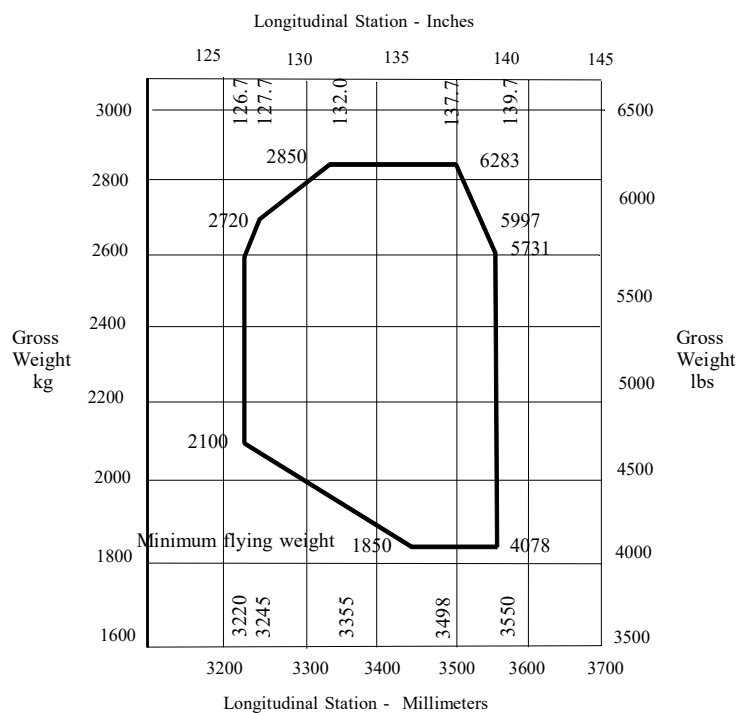
Maximum Forward Touchdown Speed	40 Kts	IAS
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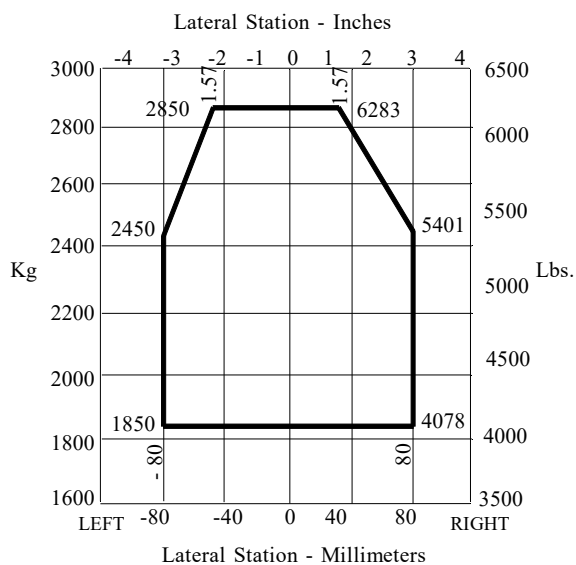
## VI. Model A109E (Normal Category Helicopter) (cont'd)

C.G. Range

## Longitudinal limits



## Lateral limits



**VI. Model A109E (Normal Category Helicopter) (cont'd)**

<u>Empty Weight &amp; CG Range.</u>	(None)
<u>Maximum Weight.</u>	2,850 Kg (6,283 lb)
<u>Minimum Crew.</u>	One pilot at Sta 1,565 mm (62 in) to 1,630 mm (64 in)
<u>Maximum Passengers.</u>	7
<u>Maximum Baggage.</u>	150 Kg (330 lb) at Sta 5,300 mm (209 in) Maximum floor loading for baggage compartment: 500 Kg/m <sup>2</sup> (102 lb/ft <sup>2</sup> ) Maximum load per tie-down fitting: 91 Kg (200 lb)
<u>Fuel Capacity.</u>	Total Usable: 157 US Gal (595 lt) <i>See NOTE 1 for unusable fuel.</i>
<u>Oil Capacity Engines. PW 206C</u>	1.35 US Gal (5.12 lt) each engine <i>See NOTE 1 for undrainable oil.</i>
<u>Oil Capacity Engines. TM 2K1</u>	1.13 US Gal (4.3 lt) each engine <i>See NOTE 1 for undrainable oil.</i>
<u>Oil Capacity Transmission.</u>	2.9 US Gal (11 lt) <i>See NOTE 1 for undrainable oil.</i>
<u>Maximum Operating Altitude.</u>	PW 206C 15,000 ft (4,560 m) TM 2K1 20,000 ft (6,096 m)
<u>Rotor Blade Control Movements</u>	For rigging information refer to the Model A109E Maintenance Manual.

**VII. Model A119 (Normal Category Helicopter), approved April 28, 2000.**

<u>Engine.</u>	One (1) Pratt & Whitney Canada Inc. PT6B-37A Turboshaft engine Build Specification No. 1017 (for helicopters not equipped with Integrated Display System) or Build Specification No. 1142 (for helicopters equipped with Integrated Display System) Electronic Engine Control (EEC)		
<u>Fuel.</u>	For all temperatures: ASTM D-1655 Jet A, Jet A-1, <del>Jet A-2</del> Military specification (only for reference): MIL-T-5624 grade JP-5, MIL-T-83133 grade JP-8 For detailed information: see Section 1 of the A119 Flight Manual - FAA approved		
<u>Engine/Xmsn Limits.</u>	Takeoff		
	Torque	108.5%	(900 SHP at N2 100%)
	Output Shaft Speed (N2)	101%	(4416 rpm)
	Gas Producer Speed (N1)	103.2%	(39300 rpm)
	Gas Temperature 5 min. (ITT)	810°C	(1490.4 °F)
	Maximum Continuous		
	Torque	100%	(830 SHP at N2 102%)
	Output Shaft Speed (N2)	101%	(4416 rpm)
	Gas Producer Speed (N1)	100.1%	(38100 rpm)
	Gas Temperature (ITT)	755°C	(1391 °F)

## VII. Model A119 (Normal Category Helicopter) (cont'd)

Rotor Limits.

Power off			
Maximum	110%	(422 rpm)	
Minimum	90%	(346 rpm)	
Power on			
Maximum	101%	(388 rpm)	
	103%	(396 rpm) with torque <50%	
Minimum	95%	(365 rpm)	

Rotor Speed Warning.

Low speed	96%	(369 rpm)
High speed	108%	(415 rpm)

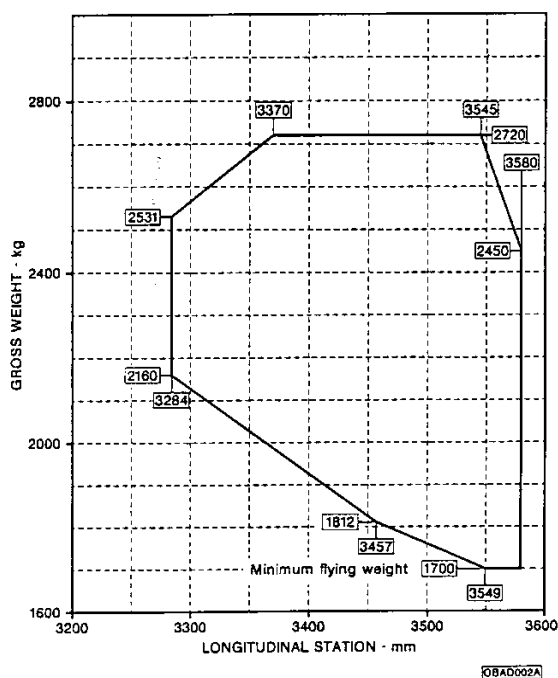
Airspeed Limits.

Never exceed speed (Vne) 152 knots IAS power on

For reduction of the Vne with altitude and OAT, see the A119 Rotorcraft Flight Manual.

C.G. Range.

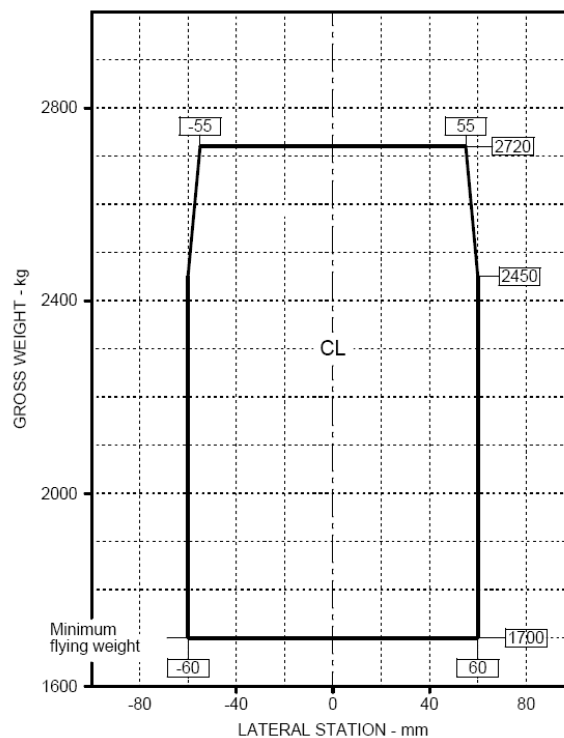
## Longitudinal Limits.



## VII. Model A119 (Normal Category Helicopter) Cont'd

CG Range.

## Lateral Limits

Empty Weight & CG Range.

(None)

Maximum Weight.

2,720 Kg (5,997 lb)

Minimum Crew.

One pilot between STA 1,565 mm (62 in) and STA 1,630 mm (64 in)

Maximum Passengers.

7

Maximum Baggage.150 Kg (330 lb) between STA 4,880 (192 in) and STA 6,430 mm (253 in)  
Maximum floor loading for baggage compartment: 500 Kg/m<sup>2</sup> (102 lb/ft<sup>2</sup>).Fuel Capacity.Total Usable: 157 US Gal (595 lt)  
*See NOTE 1 for unusable fuel*  
*See NOTE 8 for fuel capacity with supplementary fuel tank installation.*Oil Capacity Engine.2.76 US Gal (10.45 lt)  
*See NOTE 1 for undrainable oil.*Oil Capacity Transmission.2.72 US Gal (10.3 lt)  
*See NOTE 1 for undrainable oil.*Maximum Operating Altitude.

4,572 m (15,000 ft)

Rotor Blade Control Movements.

For rigging information refer to the Model A119 Maintenance Manual.

**VIII. Model A109S (Normal Category Helicopter), approved July 20, 2006.**

<u>Engines.</u>	Two (2) Pratt & Whitney Canada Inc. PW207C turboshaft engines. FADEC control engines	
<u>Fuel PW 207C.</u>	For all temperatures: ASTM D-1655 Jet A, A1 Military specification (only for reference) MIL-T-5624 grade , JP-5, MIL-T-83133 grade JP-8, For detailed information see Section I of the applicable FAA approved A109S / A109S Trekker Rotorcraft Flight Manual.	
Emergency Fuel	Refer to FAA approved RFM Section 1, for detailed information	
<u>Engine/Xmsn Limits.</u> PW207C engine)	All Engine Operation Takeoff Torque 125% (562 SHP at N2 100%) Output shaft speed (N2) 102% (6120 rpm) Gas producer speed (N1) 99.7% (57826 rpm) Gas temperature (5 min.) TOT 900°C (1652°F)  Maximum Continuous Torque 125% (562 SHP at N2 100%) Output shaft speed (N2) 101% (6060 rpm) Gas producer speed (N1) 97.1% (56318 rpm) Gas temperature (TOT) 840°C (1544°F)  Single-engine operation (emergency)  2½ min Torque 162% (730 SHP at N2 100%) Output Shaft Speed (N2) 102% (6120 rpm) Gas Producer Speed (N1) 103% (59740 rpm) Gas Temperature (TOT) 970°C (1778°F)  Maximum Continuous Torque 141% (633 SHP at N2 100%) Output shaft speed (N2) 101% (6060 rpm) Gas producer speed (N1) 99.7% (57826 rpm) Gas temperature (TOT) 900°C (1652°F)	
<u>Transmission Limits.</u>	All Engine Operation (torque Tq) Maximum Continuous 100% (900 SHP) Take off (5 minutes) 107% (960 SHP) Transient (6 second) 110% (990 SHP)  Single Engine Operation (torque Tq) Maximum Continuous 133% (600 SHP) 2 ½ minute 162% (730 SHP) Transient (6 seconds) 173% (780 SHP)	
<u>Rotor Limits.</u>	Power off Maximum 110% (422 rpm) Minimum 95% (365 rpm)  Power on all engine operative Maximum 102% (394 pm) Minimum 99% (380 rpm)  Power on single engine (OEI) Maximum 102% (394 rpm) Minimum 90% (346 rpm)	

## VIII. Model A109S (Normal Category Helicopter) (cont'd)

Rotor Speed Warning.

## Low speed

Power On – Maximum

95.5% (367 rpm)

Power Off – Minimum

94.5% (344 rpm)

## High speed

Power On

105.5% (405 rpm)

Power Off

111% (428 rpm)

A109S Airspeed Limits.

## Never exceed speed (Vne)

168 knots IAS power on

128 knots IAS power off/OEI

For reduction of Vne with altitude and OAT, see the applicable FAA approved A109S Rotorcraft Flight Manual.

Refer to FAA approved RFM Section 1, for detailed information on other VNE limits and other speed limitations

A109S Trekker Airspeed Limits.

## Never exceed speed (Vne)

160 knots IAS power on

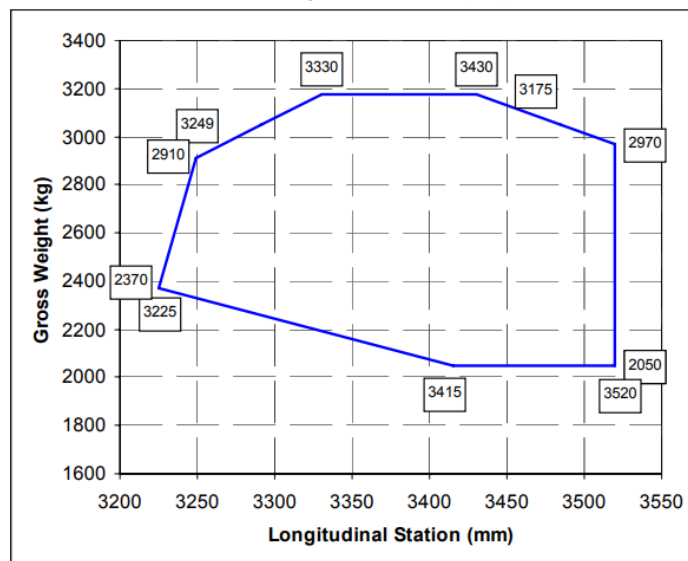
120 knots IAS power off/OEI

For reduction of Vne with altitude and OAT, see the applicable FAA approved A109S Trekker Rotorcraft Flight Manual.

Refer to FAA approved RFM Section 1, for detailed information on other VNE limits and other speed limitations

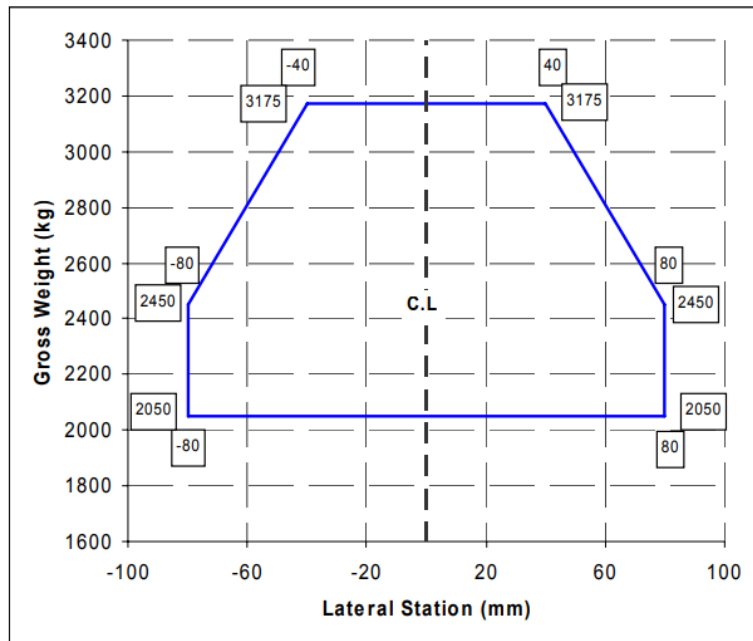
C.G. Range

A109S Longitudinal limits (mm)

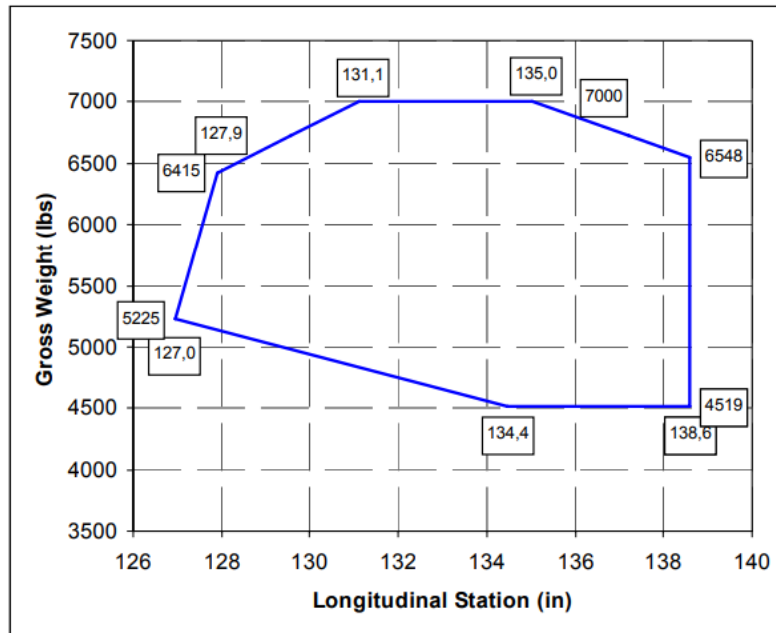


## VIII. Model A109S (Normal Category Helicopter) (cont'd)

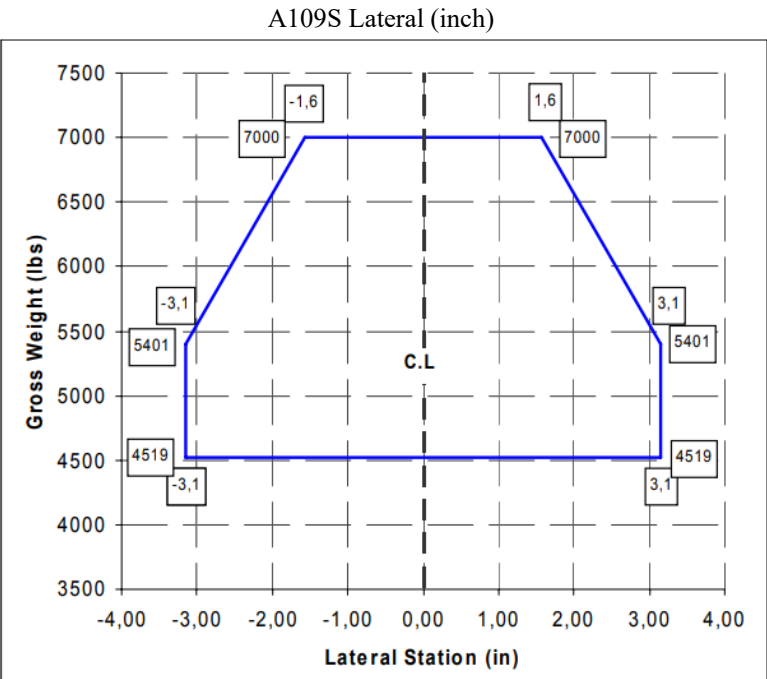
A109S Lateral (mm)



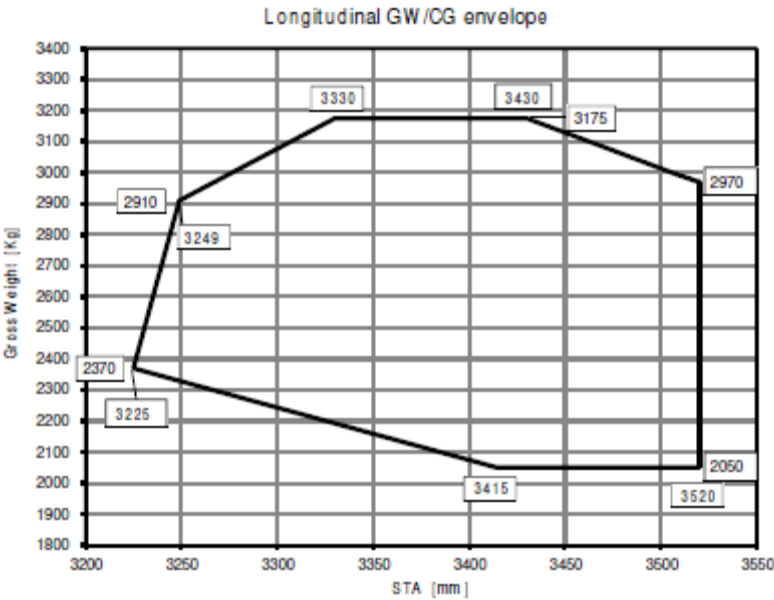
A109S Longitudinal limits (inch)



VIII. Model A109S (Normal Category Helicopter) (cont'd)

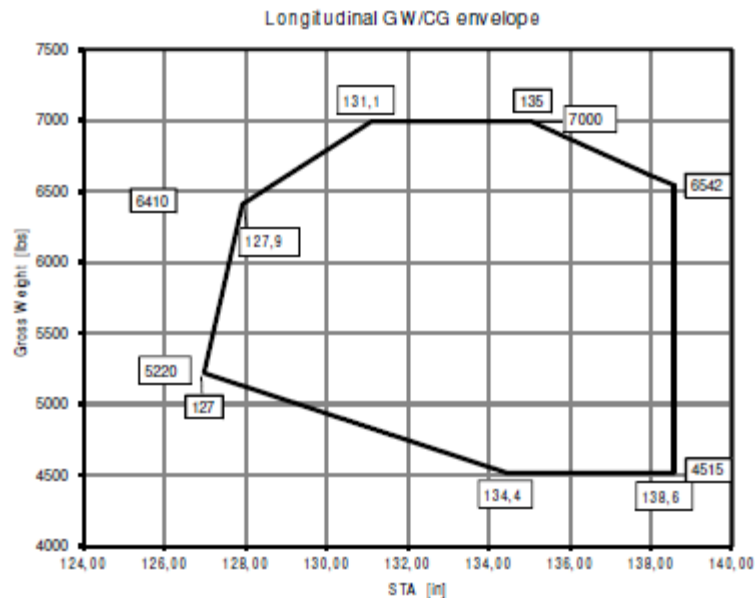


A109S with Trekker Kit P/N 109G0000F01 Longitudinal (mm)

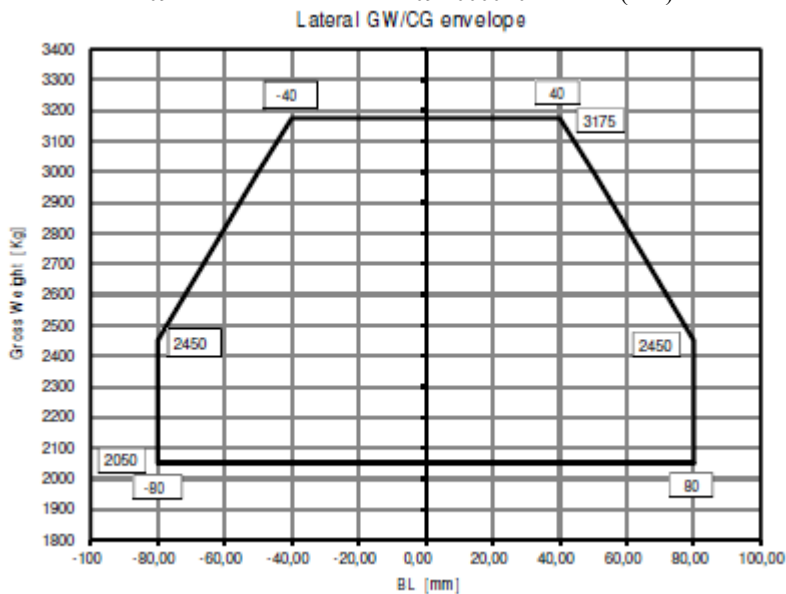




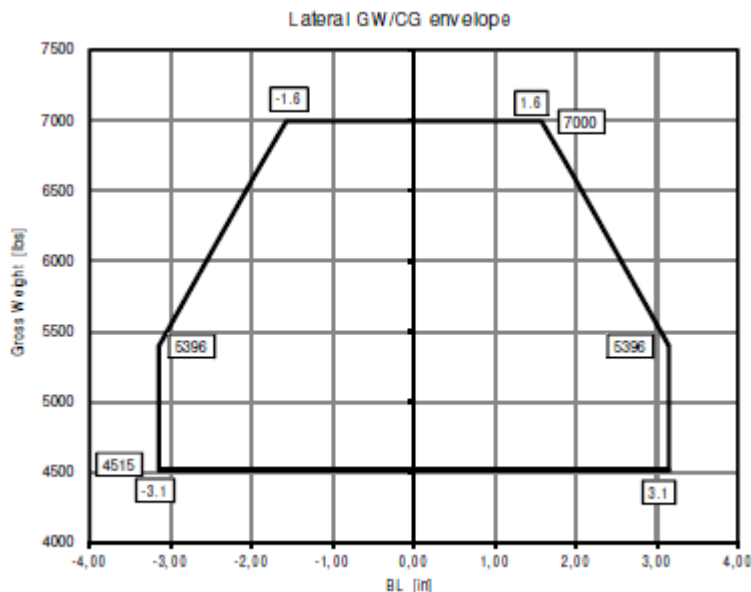
A109S with Trekker Kit P/N 109G0000F01 Longitudinal (in)



A109S with Trekker Kit P/N 109G0000F01 Lateral (mm)



## A109S with Trekker Kit P/N 109G0000F01 Lateral (in)



<u>Empty Weight &amp; CG Range.</u>	(None)
<u>Maximum Take Off Weight.</u>	3,175 Kg (7,000 lb)
<u>Minimum Crew.</u>	One pilot at Sta 1,328 mm (52,3 in) to 1,404 mm (55,3 in) The pilot must be seated in the right seat
<u>Maximum Passengers.</u>	7
<u>Maximum Baggage.</u>	120 Kg (264 lb) at Sta 4,880 mm to 6430 mm ref.RFM for baggage load distribution  Maximum floor loading for baggage compartment: 500 Kg/m <sup>2</sup> (102 b/ft <sup>2</sup> )  Maximum load per tie-down fitting: 91 Kg (200 lb)
<u>Fuel Capacity.</u>	Total Usable: 148.5 US Gal (562 lt) <i>See NOTE 1 for unusable fuel.</i>
<u>Oil Capacity Engines. PW 207C</u>	1.38 US Gal (5.25 lt) for each engine <i>See NOTE 1 for undrainable oil.</i>
<u>Oil Capacity Transmission.</u>	3,09 US Gal (11,7 lt) <i>See NOTE 1 for undrainable oil.</i>
<u>Maximum Operating Altitude.</u> PW 207C	20,000 ft (6,096 m)
<u>Blade Control Movements</u>	Main -1° / +12° Tail RH pedal -7° LH pedal + 24° For rigging information refer to the Maintenance Manual

**IX. Model AW119 MKII (Normal Category Helicopter), approved October 22, 2007.**

Engine. One (1) Pratt & Whitney Canada Inc. PT6B-37A Turboshift engine Build Specification No. 1242  
Electronic Engine Control (EEC)

Fuel. For all temperatures:  
ASTM D-1655 Jet A, Jet A-1  
Military specification (only for reference):  
MIL-T-5624 grade JP-5,  
MIL-T-83133 grade JP-8  
For detailed information: see Section 1 of the AW119 MKII RFM - FAA approved

<u>Engine/Xmsn Limits.</u>	Takeoff (5 min)		
	Torque	108.5%	(917 SHP at N2 102%)
	Output Shaft Speed (N2)	102%	(4460 rpm)
		Note: Operation up to N2 103% is permitted	
	Gas Producer Speed (N1)	103.2%	(39300 rpm)
	Gas Temperature (ITT)	810°C	(1490.4 °F)
	Maximum Continuous		
	Torque	100%	(847 SHP at N2 102%)
	Output Shaft Speed (N2)	102%	(4460 rpm)
		Note: Operation up to N2 103% is permitted	
	Gas Producer Speed (N1)	100.1%	(38100 rpm)
	Gas Temperature (ITT)	755°C	(1391 °F)

<u>Rotor Limits.</u>	Power off		
	Maximum	110%	(422 rpm)
	Minimum	90%	(346 rpm)
	Power on		
	Maximum	103%	(396 rpm)
	Minimum	95%	(365 rpm)

<u>Rotor Speed Warning.</u>	Low speed	96%	(369 rpm)
	High speed	108%	(415 rpm)

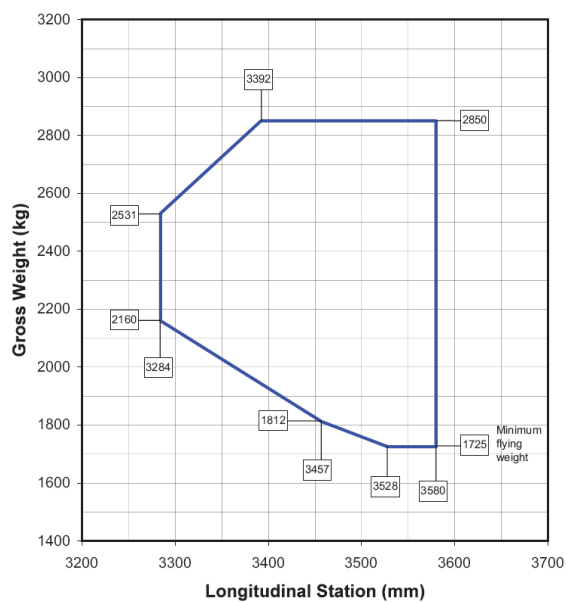
<u>Airspeed Limits.</u>	Never exceed speed (Vne)	152 knots IAS power on
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For reduction of the Vne with altitude and OAT, see the AW119 MKII Rotorcraft Flight Manual.

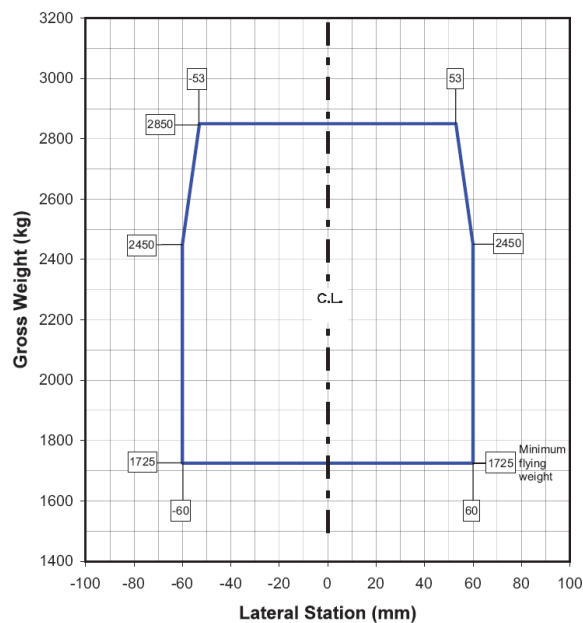
## IX. Model AW119 MKII (Normal Category Helicopter) Cont'd

C.G. Range.

## Longitudinal Limits.

CG Range.

## Lateral Limits

Empty Weight & CG Range.

(None)

Maximum Weight.

2,850 Kg (6283 lb)

Minimum Crew.

One pilot between STA 1,565 mm (62 in) and STA 1,630 mm (64 in)

Maximum Passengers.

7

**IX. Model AW119 MKII (Normal Category Helicopter) Cont'd**

<u>Maximum Baggage.</u>	150 Kg (330 lb) between STA 4,880 (192 in) and STA 6,430 mm (253 in) Maximum floor loading for baggage compartment: 500 Kg/m <sup>2</sup> (102 lb/ft <sup>2</sup> ).
<u>Fuel Capacity.</u>	Total Usable: 157 US Gal (595 lt) <i>See NOTE 1 for unusable fuel</i> <i>See NOTE 8 for fuel capacity with supplementary fuel tank installation.</i>
<u>Oil Capacity Engine.</u>	2.76 US Gal (10.45 lt) <i>See NOTE 1 for undrainable oil.</i>
<u>Oil Capacity Transmission.</u>	2.72 US Gal (10.3 lt) <i>See NOTE 1 for undrainable oil.</i>
<u>Maximum Operating Altitude.</u>	4,572 m (15,000 ft)
<u>Rotor Blade Control Movements.</u>	For rigging information refer to the A119/AW119 MKII Maintenance Manual.

**X. Model AW109SP (Normal Category Helicopter), approved October 14, 2010.**

<u>Engines.</u>	Two (2) Pratt & Whitney Canada Inc. PW207C turboshaft engines. FADEC control engines																																
<u>Fuel PW 207C.</u>	For all temperatures: ASTM D-1655 Jet A, A1 Military specification (only for reference) MIL-T-5624 grade , JP-5, MIL-T-83133 grade JP-8, For detailed information see Section I of the applicable FAA approved AW109SP Rotorcraft Flight Manual.																																
Emergency Fuel	Refer to FAA approved RFM Section 1, for detailed information																																
<u>Engine/Xmsn Limits.</u> PW207C engine)	<p>All Engine Operation</p> <p>Takeoff</p> <table> <tr> <td>Torque</td><td>125% (562 SHP at N2 100%)</td></tr> <tr> <td>Output shaft speed (N2)</td><td>102% (6120 rpm)</td></tr> <tr> <td>Gas producer speed (N1)</td><td>99.7% (57826 rpm)</td></tr> <tr> <td>Gas temperature (5 min.) TOT</td><td>900°C (1652°F)</td></tr> </table> <p>Maximum Continuous</p> <table> <tr> <td>Torque</td><td>125% (562 SHP at N2 100%)</td></tr> <tr> <td>Output shaft speed (N2)</td><td>101% (6060 rpm)</td></tr> <tr> <td>Gas producer speed (N1)</td><td>97.1% (56318 rpm)</td></tr> <tr> <td>Gas temperature (TOT)</td><td>840°C (1544°F)</td></tr> </table> <p>Single-engine operation (emergency)</p> <p>2½ min</p> <table> <tr> <td>Torque</td><td>162% (730 SHP at N2 100%)</td></tr> <tr> <td>Output Shaft Speed (N2)</td><td>102% (6120 rpm)</td></tr> <tr> <td>Gas Producer Speed (N1)</td><td>103% (59740 rpm)</td></tr> <tr> <td>Gas Temperature (TOT)</td><td>970°C (1778°F)</td></tr> </table> <p>Maximum Continuous</p> <table> <tr> <td>Torque</td><td>141% (633 SHP at N2 100%)</td></tr> <tr> <td>Output shaft speed (N2)</td><td>101% (6060 rpm)</td></tr> <tr> <td>Gas producer speed (N1)</td><td>99.7% (57826 rpm)</td></tr> <tr> <td>Gas temperature (TOT)</td><td>900°C (1652°F)</td></tr> </table>	Torque	125% (562 SHP at N2 100%)	Output shaft speed (N2)	102% (6120 rpm)	Gas producer speed (N1)	99.7% (57826 rpm)	Gas temperature (5 min.) TOT	900°C (1652°F)	Torque	125% (562 SHP at N2 100%)	Output shaft speed (N2)	101% (6060 rpm)	Gas producer speed (N1)	97.1% (56318 rpm)	Gas temperature (TOT)	840°C (1544°F)	Torque	162% (730 SHP at N2 100%)	Output Shaft Speed (N2)	102% (6120 rpm)	Gas Producer Speed (N1)	103% (59740 rpm)	Gas Temperature (TOT)	970°C (1778°F)	Torque	141% (633 SHP at N2 100%)	Output shaft speed (N2)	101% (6060 rpm)	Gas producer speed (N1)	99.7% (57826 rpm)	Gas temperature (TOT)	900°C (1652°F)
Torque	125% (562 SHP at N2 100%)																																
Output shaft speed (N2)	102% (6120 rpm)																																
Gas producer speed (N1)	99.7% (57826 rpm)																																
Gas temperature (5 min.) TOT	900°C (1652°F)																																
Torque	125% (562 SHP at N2 100%)																																
Output shaft speed (N2)	101% (6060 rpm)																																
Gas producer speed (N1)	97.1% (56318 rpm)																																
Gas temperature (TOT)	840°C (1544°F)																																
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Gas Producer Speed (N1)	103% (59740 rpm)																																
Gas Temperature (TOT)	970°C (1778°F)																																
Torque	141% (633 SHP at N2 100%)																																
Output shaft speed (N2)	101% (6060 rpm)																																
Gas producer speed (N1)	99.7% (57826 rpm)																																
Gas temperature (TOT)	900°C (1652°F)																																

## X. Model AW109SP (Normal Category Helicopter) (cont'd)

Transmission Limits.

All Engine Operation (torque Tq)	
Maximum Continuous	100% (900 SHP)
Take off (5 minutes)	107% (960 SHP)
Transient (6 second)	110% (990 SHP)
Single Engine Operation (torque Tq)	
Maximum Continuous	133% (600 SHP)
2 ½ minute	162% (730 SHP)
Transient (6 seconds)	173% (780 SHP)

Rotor Limits.

Power off	
Maximum	110% (422 rpm)
Minimum	95% (365 rpm)
Power on all engine operative	
Maximum	102% (394 pm)
Minimum	99% (380 rpm)
Power on single engine (OEI)	
Maximum	102% (394 rpm)
Minimum	90% (346 rpm)

Rotor Speed Warning.

Low speed	
Power On – Maximum	95.5% (367 rpm)
Power Off – Minimum	94.5% (344 rpm)
High speed	
Power On	105.5% (405 rpm)
Power Off	111% (428 rpm)

Airspeed Limits.

Never exceed speed (Vne)	168 knots IAS power on 128 knots IAS power off/OEI
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For reduction of Vne with altitude and OAT, see the applicable FAA approved AW109SP Rotorcraft Flight Manual.

Refer to FAA approved RFM Section 1 for detailed information on other VNE limits

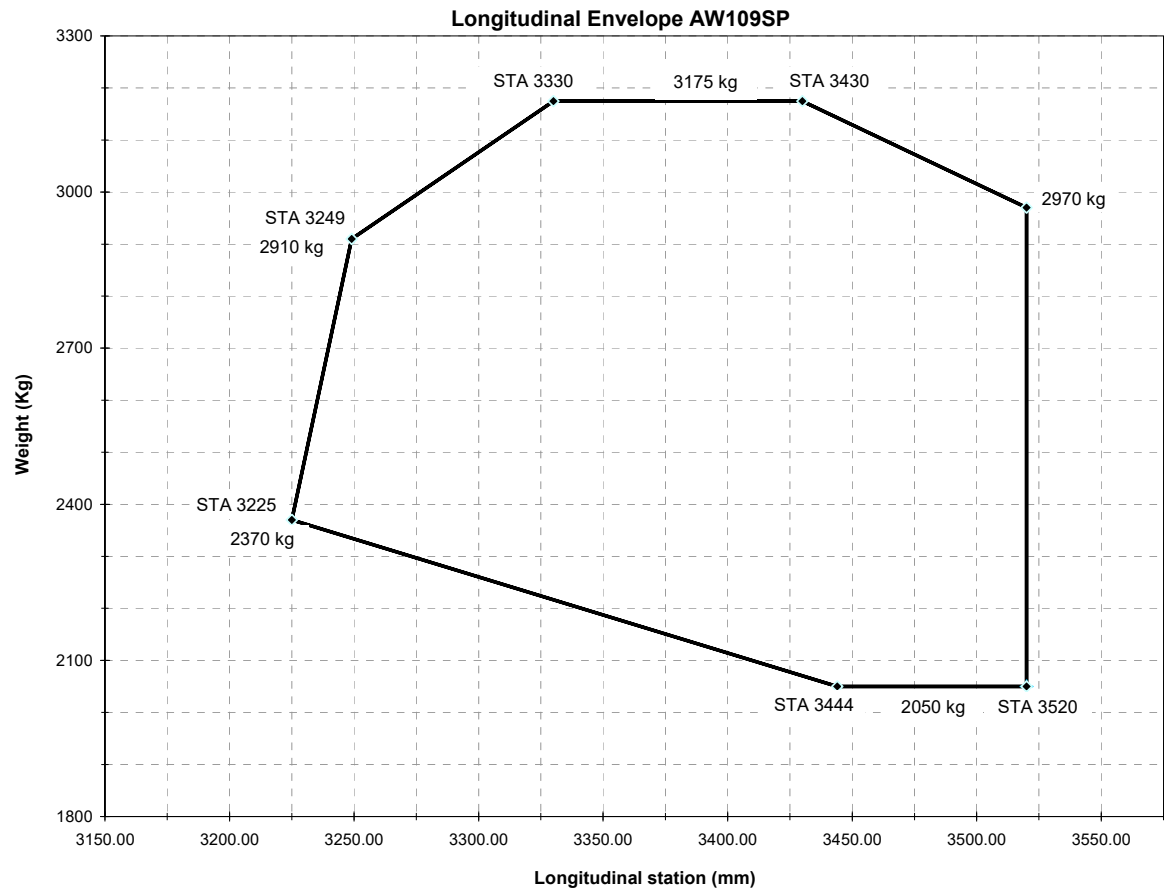
## Ground Speed Limits

Maximum take off and Touchdown Speed on concrete or even surfaces: 40 Kts IAS  
Maximum take off and Touchdown Speed on unprepared or uneven surfaces: 20 Kts IAS

Refer to FAA approved RFM Section 1 for detailed information

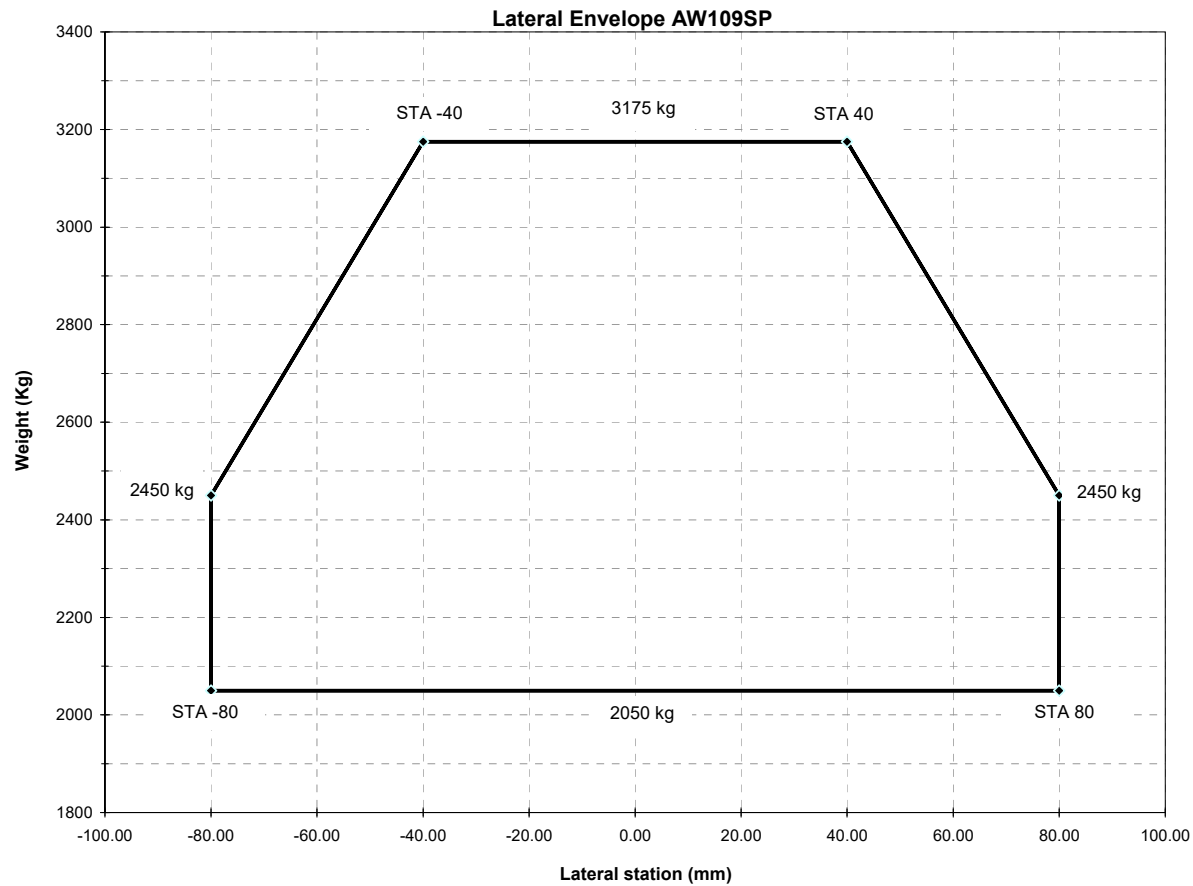
X. Model AW109SP (Normal Category Helicopter) (cont'd)

C.G. Range Longitudinal limits (mm)



X. Model AW109SP (Normal Category Helicopter) (cont'd)

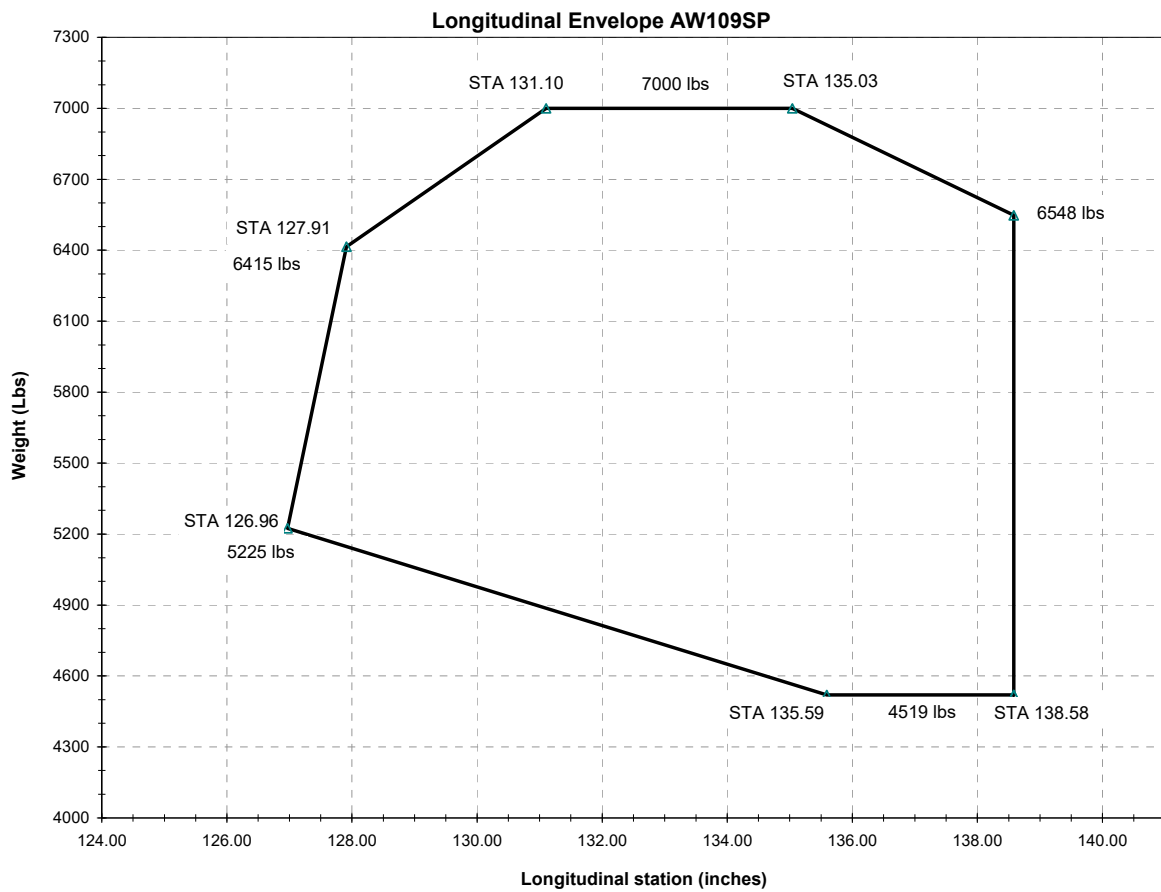
Lateral (mm)





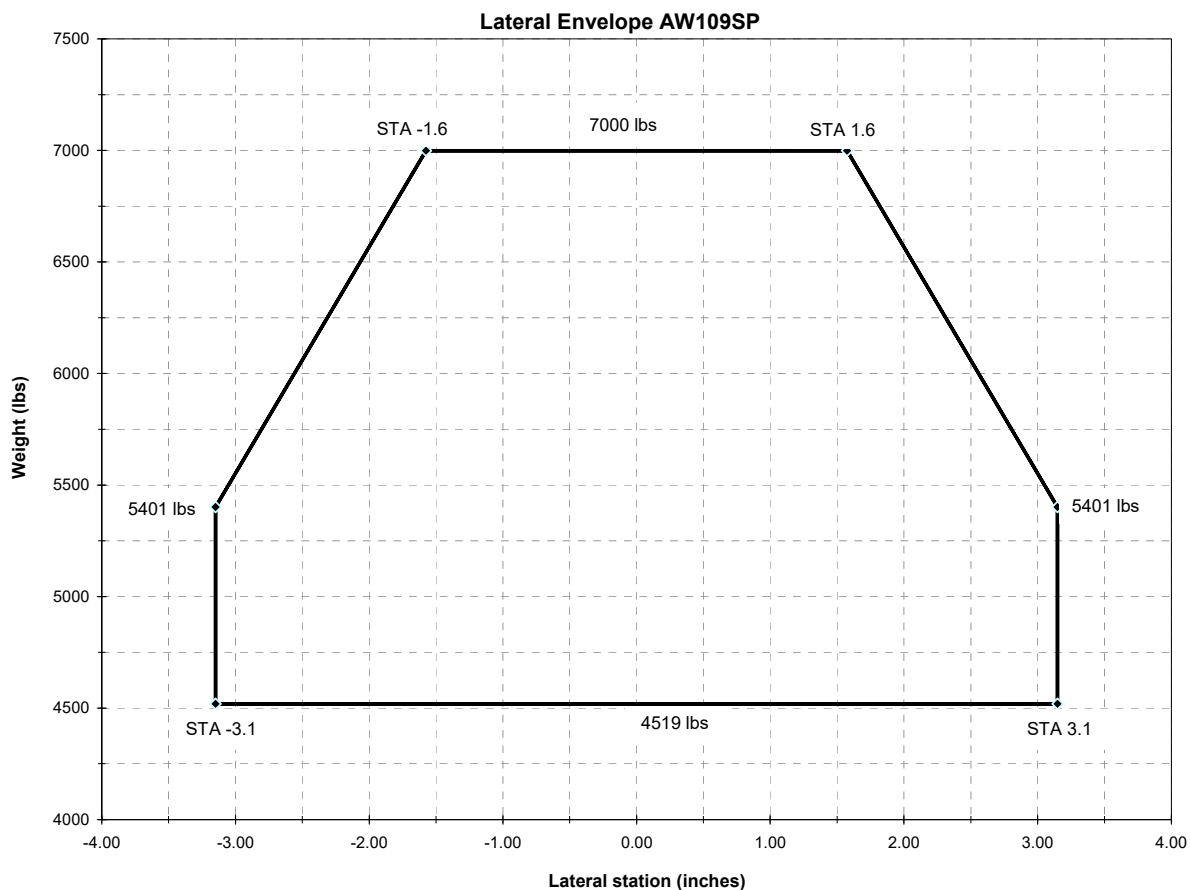
## X. Model AW109SP (Normal Category Helicopter) (cont'd)

Longitudinal limits (inch)



## X. Model AW109SP (Normal Category Helicopter) (cont'd)

Lateral (inch)

Empty Weight & CG Range.

(None)

Maximum Take Off Weight.

3,175 Kg (7,000 lb)

Minimum Crew.

One pilot at Sta 1,328 mm (52,3 in) to 1,404 mm (55,3 in)  
 The pilot must be seated in the right seat

Maximum Passengers.

7

Maximum Baggage.

120 Kg (264 lb) at Sta 4,880 mm to 6430 mm ref .RFM for baggage load distribution

Maximum floor loading for baggage compartment: 500 Kg/m<sup>2</sup> (102 b/ft<sup>2</sup>)

Maximum load per tie-down fitting: 91 Kg (200 lb)

Fuel Capacity.Total Usable: 148.5 US Gal (562 lt). *See NOTE 1 for unusable fuel.*Oil Capacity Engines. PW 207C1.38 US Gal (5.25 lt) for each engine. *See NOTE 1 for undrainable oil.*Oil Capacity Transmission.3,09 US Gal (11,7 lt). *See NOTE 1 for undrainable oil.*Maximum Operating Altitude.

PW 207C

20,000 ft (6,096 m)

Blade Control Movements

Main -1° / +12°

Tail RH pedal -7° LH pedal + 24°

For rigging information refer to the Model AW109SP Maintenance Manual

**DATA PERTINENT TO ALL MODELS****Datum.**

Longitudinal station 0 (datum) is 1835 mm (72 in) forward of the front jack point.  
 For the A119 and AW119 MKII, longitudinal station 0 (datum) is 1785 mm (70.3 in) forward of the front jack point.  
 For the A109S and AW109SP, longitudinal station 0 (datum) is 1635 mm (64,37 in) forward of the front jack point.  
 For the A109S equipped with Trekker Kit P/N 109G0000F01, longitudinal station 0 (datum) is 1580mm (62.2 in) forward of the front jack point.  
 Lateral station 0 (datum) is  $\pm 450$  mm ( $\pm 18$  in) inboard of each main jack point and coincides with the rotorcraft longitudinal plane of symmetry.

**Leveling Means.**

A109, A109A, A109AII, A109C, A109K2 and A119 plumb line from ceiling reference point to index plate on floor of passenger cabin.  
 For A109E, A109S, A109S with Trekker Kit P/N 109G0000F01 and AW109SP the leveling is performed by a water level put on the datum plate located on the cabin roof, RH side.  
 AW119MKII uses either one of the two leveling methods described above.

**Serial Numbers Eligible.**

A ENTE NAZIONALE AVIAZIONE CIVILE (ENAC) Certificate of Airworthiness for Export endorsed as noted under import requirements must be submitted for each individual rotorcraft for which application for certification is made.

For the A109: the eligible Serial Numbers are from 7106 to 7109.  
 For the A109A: the eligible Serial Numbers are from 7110 to 7114 (P/N assy 109-9000-01-11), from 7115 to 7125 (P/N Assy 109-9000-01-15), from 7126 to 7135 (P/N Assy 109-9000-01-19), from 7136 to 7165 (P/N Assy 109-9000-01-23), from 7166 to 7255 (P/N Assy 109-9000-01-27).  
 For the A109A II: the eligible Serial Numbers are from 7256 to 7600.  
 For the A109C: the eligible Serial Numbers are from 7601 to 7800.  
 For the A109K2: the eligible Serial Numbers are from 10001 to 10100.  
 For the A109E: the eligible Serial Numbers are from 11001 to 11999.  
 For the A119: the eligible Serial Numbers are from 14003 to 14700.  
 For the AW119 MKII: the eligible Serial Numbers are from 14701 to 14900.  
 For the AW119MKII equipped with G1000H Kit P/N 109G4600F01-101 and G1000H NXi Kit P/N 10G4600F01-201: the eligible Serial Numbers are from 14901 to 15999.  
 For the A109S: the eligible Serial Numbers are 22001, 22003 through 22087, 22089 through 22200  
 For the A109S equipped with Trekker Kit P/N 109G0000F01: the eligible Serial Numbers are 22002, 22088, 22701 to 22999  
 For the AW109SP the eligible Serial Numbers are S/N 22201, 22203, from 22214 to 22362, 22364 and subs

**Certification Basis.**

FAR 21.29 and FAR Part 27 dated February 1, 1965, including Amendments 27-1 through 27-8.

FAR Part 29 dated February 1, 1965, para. 29.903(b), for Category "A" engine isolation.

Special Conditions for Agusta Model A109 helicopter No. 27-54-EU-17, issued on June 26, 1973.

Equivalent safety in lieu of compliance shown for:

- FAR 27.1189, re shutoff means
- FAR 27.1305(d), re fuel quantity indicator for A109A up to S/N 7165.
- FAR 27.927(c) at amendment 27-12 elected by the applicant

**For the Model A109K2, in addition to the above:**

- 27.25 Amendment 11
- 27.79 Amendment 21
- 27.143 Amendment 21
- 27.865 Amendment 11
- 27.923 Amendment 12 (for reference only)
- 27.939 Amendment 11
- 27.951 Amendment 9

-27.1093 Amendment 20

For the Model A109E in addition to the above:

-27.2 Amendment 28  
 -27.21 Amendment 21  
 -27.45 Amendment 21  
 -27.71 Amendment 21  
 -27.141 Amendment 21  
 -27.175 Amendment 21  
 -27.177 Amendment 21  
 -27.401 Amendment 27  
 -27.610 Amendment 21  
 -27.901 Amendment 23  
 -27.903 Amendment 23  
 -27.927 Amendment 23  
 -27.954 Amendment 23  
 -27.1091 Amendment 23  
 -27.1189 Amendment 23  
 -27.1305 Amendment 23  
 -27.1321 Amendment 13  
 -27.1322 Amendment 11  
 -27.1323 Amendment 13  
 -27.1325 Amendment 13  
 -27.1401 Amendment 10  
 -27.1505 Amendment 21  
 -27.1519 Amendment 21  
 -27.1521 Amendment 23  
 -27.1527 Amendment 14  
 -27.1529 Amendment 18  
 -27.1549 Amendment 23  
 -27.1555 Amendment 21  
 -27.1557 Amendment 11  
 -27.1581 Amendment 14  
 -27.1583 Amendment 16  
 -27.1585 Amendment 21  
 -27.1587 Amendment 21

Certification Basis (Cont'd).

Special conditions for Agusta Models A109D and A109E helicopters, High Intensity Radiated Fields No. 27-ASW-3 issued on June 13, 1996.

Equivalent safety in lieu of compliance shown for: FAR 27.175(c), re static longitudinal stability.

For the Model A119 in addition to the above:

- FAR 27.29, Amdt. 14  
 - FAR 27.33, Amdt. 14  
 - FAR 27.65, Amdt. 33  
 - FAR 27.71, Amdt. 21  
 - FAR 27.151, Amdt. 21  
 - FAR 27.161, Amdt. 21  
 - FAR 27.173, Amdt. 21  
 - FAR 27.307, Amdt. 26  
 - FAR 27.321, Amdt. 11  
 - FAR 27.337, Amdt. 26  
 - FAR 27.339, Amdt. 11  
 - FAR 27.351, Amdt. 26  
 - FAR 27.361, Amdt. 23  
 - FAR 27.391, Amdt. 26  
 - FAR 27.395, Amdt. 26  
 - FAR 27.397, Amdt. 11  
 - FAR 27.427, Amdt. 27  
 - FAR 27.501, Amdt. 26  
 - FAR 27.571, Amdt. 26  
 - FAR 27.602, Amdt. 38  
 - FAR 27.603, Amdt. 16  
 - FAR 27.613, Amdt. 26

Certification Basis (Cont'd).

- FAR 27.663, Amdt. 26
- FAR 27.672, Amdt. 21
- FAR 27.727, Amdt. 26
- FAR 27.779, Amdt. 21
- FAR 27.783, Amdt. 26
- FAR 27.807, Amdt. 26
- FAR 27.863, Amdt. 16
- FAR 27.917, Amdt. 11
- FAR 27.923, Amdt. 29
- FAR 27.955, Amdt. 23
- FAR 27.967, Amdt. 30
- FAR 27.975, Amdt. 30
- FAR 27.977, Amdt. 11
- FAR 27.997, Amdt. 23
- FAR 27.1027, Amdt. 23
- FAR 27.1041, Amdt. 23
- FAR 27.1043, Amdt. 14
- FAR 27.1045, Amdt. 23
- FAR 27.1141, Amdt. 33
- FAR 27.1143, Amdt. 29
- FAR 27.1145, Amdt. 12
- FAR 27.1193, Amdt. 23
- FAR 27.1327, Amdt. 13
- FAR 27.1337, Amdt. 23
- FAR 27.1411, Amdt. 11
- FAR 27.1501, Amdt. 14
- FAR 27.1525, Amdt. 21
- FAR 27.1545, Amdt. 16
- FAR 27.1547, Amdt. 13
- FAR 27.1559, Amdt. 21
- 27 Appendix A, Amdt. 24

For the Model A109S:

- FAR Part 21.29 and FAR Part 27 as quoted in the FAA TCDS H7EU Revision 19 for unchanged area and FAR Part 27 Amendment 27-1 through 27-40 for the new or changed parts with respect to the A109E identified in the Agusta document n° 109-01-182 rev B;
- the exceptions of 27.863.
- Appendix A to Part 27 of Amendment 27-24.
- Appendix B to Part 27 of Amendment 27-19
- FAR 36, Appendix H, Amendment 36-1 through the amendment in effect at the time of conducting the noise tests.
- Special Condition for High Intensity Radiated Field (HIRF), No. 27-ASW-3, issued on June 13, 1996.
- Category A Operations Appendix C to FAR 27.
- The main differences between the A109S and the A109E are as follows
  - Maximum weight increase from 2850 kg to 3175 kg.
  - Stretched passenger cabin.
  - New tail rotor with composite blades.
  - Engine PW207C with new rating.
  - New main and nose landing gear.
  - New engine and transmission oil cooler components.
  - Engine control cable and engine control lever electronic control.
  - Modified two FFC levers.
  - Modified fuel quantity probe and computing unit for new fuel tanks.
  - Updated new limits in Integrated Display System (IDS).
  - Aircraft Battery relocated.
  - New ICS NAT.
  - New Main rotor P/N 109-0112-01-103.
  - New COM/NAV.
  - New pilot seats.
  - Modified passenger seats installation and fuel system.
  - Installed new interior.

For the A109S equipped with Trekker Kit P/N 109G0000F001:

- A109S Certification Basis for the areas not affected by the Trekker Kit installation
- FAR 27 Amdt. Up to 47 for the changed areas as identified in Leonardo document n° 109G0274A001.
- Special Condition: HIRF Protection according to JAA Interim Policy, Paper No. INT/POL/27&29/1 Issue 3, equivalent to FAR 27.1317 Amdt.42
- Equivalent Level of Safety to 14 CFR §27.1305, §27.1521, §27.1549, §27.1309(c), §27.1309(b)(2)(i) and (d): Power Index Indicator.

#### For the Model AW109SP

- FAR Part 21.29 and FAR Part 27 as quoted in the FAA TCDS H7EU rev 23 for unchanged area and FAR Part 27 Amendment 27-1 through 27-42 for the new or changed parts with respect to the A109S identified in the Agusta document n° 109G0000N062 rev. A and 109G0000N091 rev. B;
- the exceptions of 27.863.
- Appendix A to Part 27 of Amendment 27-24.
- Appendix B to Part 27 of Amendment 27-19
- Category A Operations Appendix C to Part 27
- HIRF Appendix D to part 27.1317
- FAR 36, Appendix H, Amendment 36-1 through the amendment in effect at the time of conducting the noise tests.
- The main differences between the AW109SP and the A109S are as follows
  - New main structure made of both metallic and composite material
  - New FQGS (Fuel quantity gauging system)
  - New Starter Generator (200 amp)
  - New AFCS (New design, 4-channels, digital AFCS, using AHRS, RAD Alt, ADU and NAV systems as input equipment, interfaced with cockpit)
  - New Avionics (Digital system, integrated with Digital Audio Communication System, 4 EFIS display with synthetic vision system and FMS)

The A109 models with a maximum weight exceeding 6000 lb have been approved following the grant of the exemption No. 6518 dated October 9, 1996.

The Grant of Exemption No. 6648, Regulatory Docket No. 28353 was issued on June 25, 1997, for the A119 in response to Agusta letter of September 27, 1995, requesting exemption from 21.19(b)(1) of Title 14, Code of Federal Regulations (14 CFR) to allow for an amendment to the TC No. H7EU rather than applying for a new Type Certificate due to design change from 2 engine to one engine.

#### Certification Basis (Cont'd).

#### For the Model AW119 MKII:

FAR 21.29 and FAR Part 27 as quoted below:

FAR 27.1 a)	Amdt. 37;	FAR 27.2	Amdt. 28;	FAR 27.2 b)2)i)	Amdt. 37;
FAR 27.21	Amdt. 21;	FAR 27.25	Amdt. 36;	FAR 27.27	Amdt. 2;
FAR 27.29	Amdt. 14;	FAR 27.33	Amdt. 14;	FAR 27.45	Amdt. 21;
FAR 27.51	Amdt. /;	FAR 27.65	Amdt. 33;	FAR 27.71	Amdt. 21;
FAR 27.73	Amdt. /;	FAR 27.75	Amdt. 14;	FAR 27.79	Amdt. 21;
FAR 27.141	Amdt. 21;	FAR 27.143	Amdt. 21;	FAR 27.151	Amdt. 21;
FAR 27.161	Amdt. 21;	FAR 27.171	Amdt. /;	FAR 27.173	Amdt. 21;
FAR 27.175	Amdt. 34;	FAR 27.177	Amdt. 21;	FAR 27.231	Amdt. /;
FAR 27.241	Amdt. /;	FAR 27.251	Amdt. /;	FAR 27.301	Amdt. /;
FAR 27.303	Amdt. /;	FAR 27.305	Amdt. /;	FAR 27.307	Amdt. 26;
FAR 27.309	Amdt. /;	FAR 27.321	Amdt. 11;	FAR 27.337	Amdt. 26;
FAR 27.339	Amdt. 11;	FAR 27.341	Amdt. /;	FAR 27.351	Amdt. 34;
FAR 27.361	Amdt. 23;	FAR 27.391	Amdt. 34;	FAR 27.395	Amdt. 26;
FAR 27.397	Amdt. 40;	FAR 27.399	Amdt. /;	FAR 27.401	Amdt. 27;
FAR 27.403	Amdt. 27;	FAR 27.411	Amdt. /;	FAR 27.413	Amdt. 27;
FAR 27.427	Amdt. 27;	FAR 27.471	Amdt. /;	FAR 27.473	Amdt. 2;
FAR 27.501	Amdt. 26;	FAR 27.505	Amdt. /;	FAR 27.547	Amdt. 3;
FAR 27.549	Amdt. 3;	FAR 27.561	Amdt. /;	FAR 27.571	Amdt. 26;
FAR 27.601	Amdt. /;	FAR 27.602	Amdt. 38;	FAR 27.603	Amdt. 16;
FAR 27.605	Amdt. 16;	FAR 27.607	Amdt. 4;	FAR 27.609	Amdt. /;
FAR 27.610	Amdt. 37;	FAR 27.611	Amdt. /;	FAR 27.613	Amdt. 26;
FAR 27.619	Amdt. /;	FAR 27.621	Amdt. 34;	FAR 27.623	Amdt. /;
FAR 27.625	Amdt. /;	FAR 27.629	Amdt. 26;	FAR 27.653	Amdt. 2;
FAR 27.659	Amdt. 2;	FAR 27.661	Amdt. 2;	FAR 27.663	Amdt. 26;

FAR 27.671	Amdt. /;	FAR 27.672	Amdt. 21;	FAR 27.673	Amdt. 21;
FAR 27.674	Amdt. 26;	FAR 27.675	Amdt. 16;	FAR 27.681	Amdt. /;
FAR 27.683	Amdt. /;	FAR 27.685	Amdt. 26;	FAR 27.691	Amdt. /;
FAR 27.695	Amdt. /;	FAR 27.723	Amdt. /;	FAR 27.725	Amdt. /;
FAR 27.727	Amdt. 26;	FAR 27.737	Amdt. /;	FAR 27.771	Amdt. /;
FAR 27.773	Amdt. /;	FAR 27.775	Amdt. 27;	FAR 27.777	Amdt. /;
FAR 27.779	Amdt. 21;	FAR 27.783	Amdt. 26;	FAR 27.785	Amdt. /;
FAR 27.787	Amdt. /;	FAR 27.805	Amdt. 37;	FAR 27.807	Amdt. 26;
FAR 27.831	Amdt. /;	FAR 27.853	Amdt. 17;	FAR 27.855	Amdt. /;
FAR 27.859	Amdt. 23;	FAR 27.861	Amdt. 26;	FAR 27.863	Amdt. 16;
FAR 27.865	Amdt. 36;	FAR 27.871	Amdt. /;	FAR 27.901	Amdt. 23;
FAR 27.903	Amdt. 23;	FAR 27.907	Amdt. /;	FAR 27.917	Amdt. 11;
FAR 27.921	Amdt. /;	FAR 27.923	Amdt. 29;	FAR 27.927	Amdt. 23;
FAR 27.931	Amdt. /;	FAR 27.939	Amdt. 11;	FAR 27.951	Amdt. 9;
FAR 27.954	Amdt. 23;	FAR 27.955	Amdt. 23;	FAR 27.959	Amdt. /;
FAR 27.961	Amdt. 23;	FAR 27.963	Amdt. 23;	FAR 27.965	Amdt. 12;
FAR 27.967	Amdt. 30;	FAR 27.969	Amdt. 23;	FAR 27.971	Amdt. /;
FAR 27.973	Amdt. /;	FAR 27.975	Amdt. 30;	FAR 27.977	Amdt. 11;
FAR 27.991	Amdt. 23;	FAR 27.993	Amdt. 2;	FAR 27.995	Amdt. /;
FAR 27.997	Amdt. 23;	FAR 27.999	Amdt. 23;	FAR 27.1011	Amdt. 23;
FAR 27.1013	Amdt. 9;	FAR 27.1017	Amdt. /;	FAR 27.1019	Amdt. 23;
FAR 27.1021	Amdt. 20;	FAR 27.1027	Amdt. 23;	FAR 27.1041	Amdt. 23;
FAR 27.1043	Amdt. 14;	FAR 27.1045	Amdt. 23;	FAR 27.1091	Amdt. 23;
FAR 27.1093	Amdt. 23;	FAR 27.1121	Amdt. 12;	FAR 27.1123	Amdt. 11;
FAR 27.1141	Amdt. 33;	FAR 27.1143	Amdt. 29;	FAR 27.1145	Amdt. 12;
FAR 27.1151	Amdt. 33;	FAR 27.1163	Amdt. 23;	FAR 27.1183	Amdt. 20;
FAR 27.1185	Amdt. 11;	FAR 27.1187	Amdt. /;	FAR 27.1189	Amdt. 23;
FAR 27.1191	Amdt. 2;	FAR 27.1193	Amdt. 23;	FAR 27.1194	Amdt. 2;
FAR 27.1195	Amdt. 5;	FAR 27.1301	Amdt. /;	FAR 27.1303	Amdt. /;
FAR 27.1305	Amdt. 29;	FAR 27.1307	Amdt. /;	FAR 27.1309	Amdt. 21;
FAR 27.1321	Amdt. 13;	FAR 27.1322	Amdt. 11;	FAR 27.1323	Amdt. 13;
FAR 27.1325	Amdt. 13;	FAR 27.1327	Amdt. 13;	FAR 27.1329	Amdt. 21;
FAR 27.1337	Amdt. 23;	FAR 27.1351	Amdt. 13;	FAR 27.1353	Amdt. 14;
FAR 27.1357	Amdt. 13;	FAR 27.1361	Amdt. /;	FAR 27.1365	Amdt. /;
FAR 27.1367	Amdt. /;	FAR 27.1381	Amdt. /;	FAR 27.1383	Amdt. /;
FAR 27.1385	Amdt. /;	FAR 27.1387	Amdt. 7;	FAR 27.1389	Amdt. /;
FAR 27.1391	Amdt. /;	FAR 27.1393	Amdt. /;	FAR 27.1395	Amdt. /;
FAR 27.1397	Amdt. 6;	FAR 27.1399	Amdt. 2;	FAR 27.1401	Amdt. 10;
FAR 27.1411	Amdt. 11;	FAR 27.1413	Amdt. 21;	FAR 27.1435	Amdt. /;
FAR 27.1461	Amdt. 2;	FAR 27.1501	Amdt. 14;	FAR 27.1503	Amdt. /;
FAR 27.1505	Amdt. 21;	FAR 27.1509	Amdt. /;	FAR 27.1519	Amdt. 21;
FAR 27.1521	Amdt. 29;	FAR 27.1523	Amdt. /;	FAR 27.1525	Amdt. 21;
FAR 27.1527	Amdt. 14;	FAR 27.1529	Amdt. 18;	FAR 27.1541	Amdt. /;
FAR 27.1543	Amdt. /;	FAR 27.1545	Amdt. 16;	FAR 27.1547	Amdt. 13;
FAR 27.1549	Amdt. 29;	FAR 27.1551	Amdt. /;	FAR 27.1553	Amdt. /;
FAR 27.1555	Amdt. 21;	FAR 27.1557	Amdt. 11;	FAR 27.1559	Amdt. 21;
FAR 27.1561	Amdt. /;	FAR 27.1565	Amdt. 2;	FAR 27.1581	Amdt. 14;
FAR 27.1583	Amdt. 16;	FAR 27.1585	Amdt. 21;	FAR 27.1587	Amdt. 21;
FAR 27.1589	Amdt. /;	FAR 27	Appendix A Amdt. 24.		

- Special Condition: HIRF Protection according to JAA Interim Policy, Paper No. INT/POL/27&29/1 [only for Electronic Engine Control System]
- Special Condition: HIRF Protection according to JAA Interim Policy, Paper No. INT/POL/27&29/1 Issue 3 [only for “G1000H Installation Kit” P/N 109G4600F01-101 and for G1000H NXi Installation Kit P/N 109G4600F01-201]
- ELOS Memo AT04305RD-R-F-01 for G1000H NXi Installation Kit P/N 109G4600F01-201 Power Index Indicator
- FAR 36, Appendix H, Amendment 36-28, January 2006 for the noise level determination.
- For Pilot and Copilot Crashworthy Seats Installation Kit P/N 109G2510F04 and for Passenger Crashworthy Seats Installation Kit P/N 109G2520F45, installed, 14 CFR

27.561 Amdt. 32; 14 CFR 27.562 Amdt. 25; 14 CFR 27.625 Amdt. 35; and 14 CFR 27.785 Amdt. 35 apply. See Note 21 for eligible serial helicopters for installation.

The Certification basis applicable to the AW119 MKII model is identified in the Agusta document No. 109G0000N077.

Date of Application for Type Certificate: February 18, 1971.

Type Certificate No. H7EU issued June 1, 1975;

amended April 2, 1976	to include Model A109A;
amended December 4, 1981	to include Model A109AII;
amended August 19, 1989	to include Model A109C;
amended January 15, 1993	to include Model A109K2;
amended August 26, 1996	to include Model A109E;
amended April 28, 2000	to include Model A119.;
amended July 20, 2006	to include Model A109S;
amended October 22, 2007	to include Model AW119 MKII.
amended October 14, 2010	to include Model AW109SP

For IFR operations See NOTE 6.

The Italian ENAC originally type certificated this under its type certificate number (A156). The FAA validated this product under U.S. Type Certificate Number (H7EU). Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of the Italian ENAC.

The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 and exported by the country of manufacture is FAR Sections 21.183(c) or 21.185(c).

The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 exported from countries other than the country of manufacture (e.g. third party country) is FAR Sections 21.183(d) or 21.183(b).

#### Import Requirements.

To be considered eligible for operation in the United States, each aircraft manufactured under this type certificate must be accompanied by a certificate of airworthiness for export or certifying statement endorsed by the exporting foreign civil airworthiness authority which states (in the English language):

The FAA can issue a U.S. airworthiness certificate based on a NAA Export Certificate of Airworthiness (Export C of A) signed by a representative of the Italian ENAC or EASA on behalf of the European Community.

The Export C of A should contain the following statement:

“The aircraft covered by this certificate has been examined, tested, and found to comply with the EASA Type Certificate Number R.005 (formerly Italian ENAC TC Number A156) approved under the U.S. Type Certificate Number H7EU and to be in a condition for safe operation.”

Refer to the applicable bilateral agreement to verify eligibility for import into the United States of both new and used aircraft based on the scope of the agreement, to identify any required statements by the exporting authority on the export certificate of airworthiness (or equivalent document), and for procedures for coordinating exceptions to conformity statements on these documents. Refer to FAA Order 8130.2, *Airworthiness Certification of Aircraft*, for requirements for issuance of an airworthiness certificate for imported aircraft.

#### Equipment.

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

In addition, the following items of equipment are required:

(a) Approved Helicopter Flight Manual:

1. Model A109: A109 Helicopter Flight Manual dated May 21, 1975 or later revision.
2. Model A109A: A109A Helicopter Flight Manual dated May 16, 1979 or later revision.



NOTE: for operations at 2450 Kg (5400 lbs) pages 1-2A, 1-2B and 1-12A are applicable.

3. Model A109A II: A109A II Helicopter Flight Manual dated June 2, 1981 or later revision.
  4. Model A109C: A109C Helicopter Flight Manual dated October 2, 1989 or later revision.
  5. Model A109K2: A109K2 Helicopter Flight Manual dated January 23, 1992 or later revision.
  6. Model A109E: A109E Rotorcraft Flight Manual dated May 31, 1996 or later revision
  7. Model A119: A119 Rotorcraft Flight Manual dated April 19, 2000 or later revision.
  8. Model A109E: A109E Rotorcraft Flight Manual No. 109-08-053 and (TM 2K1) relevant Section 5 "Optional Equipment" No. 109-08-057, dated September 10, 2001 or later revision.
  9. Model A109S A109S Rotorcraft Flight Manual No. 109G0040A013 and No. 109G0040A014 RFM Optional Equipment Supplements.  
Rotorcraft Flight Manual No. 109G0040A034 for A109S with Trekker Kit P/N 109G0000F01.
  10. Model AW119 MKII AW119 MKII Rotorcraft Flight Manual No. 109G0040A017 or later revision  
AW119MKII equipped with "G1000H Installation Kit" P/N 109G4600F01-101 and AW119MKII equipped with "G1000H NXi Installation Kit" P/N 109G4600F01-201  
Rotorcraft Flight Manual No. 109G0040A033 or later revision
  11. Model AW109SP AW109S Rotorcraft Flight Manual No. 109G0040A018 and No. 109G0040A019 RFM Optional Equipment Supplements
- (b) Low-rotor-rpm and engine-failure warning systems in accordance with Agusta drawing Nos. 109-0729-21 or 109-0729-31 and 109-0729-22 for A109A, A109AII and A119 Models; 109-0741-06 for Model A109C; 109-0741-27 and 109-0752-40 for Model A109K2; 109-0753-28 for Model A109E and A109S; 109-0900-66 for A119 Model equipped with Integrated Display System and AW119 MKII Model.
- (c) OAT indicator MS28028-1  
On A109E, A109S, A119 equipped with Integrated Display System and AW119 MKII the OAT data are shown on the IDS system and the sensor is P/N E22307-2-4.

Required and optional approved equipment are listed in the:

A109	Equipment List Report No. 109-07-01;
A109A	Equipment List Report No. 109-07-03;
A109AII	Equipment List Report No. 109-07-06;
A109C	Equipment List Report No. 109-07-09;
A109K2	Equipment List Report No. 109-07-14;
A109E	Equipment List Report No. 109-07-16;
A119	Equipment List Report No. 109-07-19.
A109S	Equipment List Report No. 109G0840W017 Equipment List Report No. 109G0840W048 for A109S with Trekker Kit P/N 109G0000F01
AW119 MKII	Equipment List Report No. 109G0840W030 Equipment List Report No. 109G0840W046 for "G1000H Installation Kit" and for "G1000H NXi Installation Kit"
AW109SP	Equipment List Report No. 109G0840W040

For IFR operations see NOTE 6.

#### Placards.

Placards listed in the EASA/ENAC-approved Helicopter Flight Manual must be displayed in the appropriate location.

Service Information.

Information essential for proper maintenance of the rotorcraft is presented in the following documentation which must be supplied with each rotorcraft at time of delivery:

A109A/A109AII/A109C A109K2 A109E Airworthiness Limitations Section (Chapter 4) of the Maintenance Manual.

A109S Airworthiness Limitations Section (Chapter 4) of the Doc n° 0B-A-AMPI-00-P Aircraft Maintenance Planning Information .

A109A/A109AII/A109C A109K2 A109E inspection requirements and component overhaul schedule (chapter 5) of the Maintenance Manual.

A109A/A109AII/A109C A109K2 A109E Maintenance Manual.

A109S Airworthiness Limitations Section (Chapter 4) of the Doc n° 0B-A-AMPI-00-P Aircraft Maintenance Planning Information.

A109S with Trekker Kit P/N 109G0000F01 Airworthiness Limitation Section (Chapter 4) of the Doc n° 0B-D-AMPI-00-P Aircraft Maintenance Planning Information.

A119 ALS (Chapter 04) of the A119 / AW119 MKII Maintenance Planning Manual.

AW119 MKII ALS (Chapter 04A) of the A119 / AW119 MKII Maintenance Planning Manual.

NOTE: Mission profiles using more cycles than those quoted in the A119 and AW119 MKII ALS shall be communicated to the aircraft manufacturer for retirement lives recalculation and approval.

A119 and AW119 MKII inspection requirements and component overhaul schedule (Chapter 05) of the A119 / AW119 MKII Maintenance Planning Manual.

AW109SP Airworthiness Limitations Section (Chapter 4) of the Doc n° 0B-B-AMPI-00-P Aircraft Maintenance Planning Information and **inspection requirements and component overhaul schedule** (Chapter 5) of the Doc n° 0B-B-AMPI-00-P Aircraft Maintenance Planning Information

“Agusta Service bulletins, structural repair manuals, vendor manuals, rotorcraft flight manuals, and overhaul and maintenance manuals, which contain a statement that the document is European Aviation Safety Agency/ ENTE NAZIONALE AVIAZIONE CIVILE (EASA/ENAC) approved, are accepted by the FAA and are considered FAA approved.

These approvals pertain to the type design only.”

Mandatory Bulletins will be identified as such. Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before September 28, 2003 – by the Italian ENAC. Any such documents are accepted by the FAA and are considered FAA approved.

- Service Bulletin,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.

This applies only to the acceptance of type design data.

NOTE 1.

Current weight and balance report including list of equipment included in the certificated empty weight and loading instructions must be provided for each rotorcraft at the time of the original certification.

The certificated empty weight and corresponding CG location must include undrainable oil and undrainable fuel.

Undrainable engine oil is zero Kg. for all models except for the A109E where the undrainable oil is 2.09 Kg./4.61 lbs (0.567 U.S.gal/2.15 lt) at the sta. 4280 mm (168.5 in) and for the A119 and AW119 MKII where the undrainable oil is 1.6 Kg./3.52 lbs (0.433 U.S. gal/1.64 lt) at the sta. 4673 mm (183.9 in).and for the

A109E where the undrainable oil is 1.8 /Kg/3.96 lbs (0.486 U.S gal/1.84 lt ) at sta 4280 mm (168.5 in).

Unusable fuel is 7 Kg /15 lbs (2.4 U.S. gal./9 lt.) at sta. 3750 mm (148°) for Model A109A/AII/C, 9 Kg./20 lbs (3.2 U.S. gal./12 lit.) at sta. 3750 mm (148°) for Model A109K2, 8 Kg/17.6 lbs (2.66 U.S. gal./10 lt) at sta 3320 mm (131 in) for Model A109E, and 8 Kg/17.6 lbs (2.64 U.S. gal./10 lt) at sta 3320 mm (130.7 in) for Models A119 and AW119 MKII , and 9.6Kg/21.16 lbs (3.17 U.S gal /12 lt) at sta 3761 mm (148 in) for Model A109S and AW109SP.

NOTE 2. All placards indicated in the Rotorcraft Flight Manual (RFM) must be installed in the appropriate location.

NOTE 3. Life-limited components and approved retirement times of the Model A109A/A109AII/A109C/A109K2/A109E/A119 /A109S/AW119 MKII and AW109SP are listed in the Chapter 04 “Airworthiness Limitations” of the applicable “Maintenance Manual” and must be replaced as prescribed therein.

NOTE 4. For operation below 4°C (40°F) of the Model A109A/AII/C the use of anti-ice additive is authorized, but is not mandatory due to aircraft anti-ice fuel filter installation. Below 4°C (40°F) the AVGAS JET FUEL MIXTURE may be used as an alternative fuel. Refer to Allison Operation and Maintenance Manual for AVGAS mix, cold weather fuel and blending instructions.

For A109E operation below 4°C (40°F) the use of anti-ice additive is authorized but not mandatory due to aircraft anti-ice fuel filter installation. For additive requirements and blending procedures refer to Pratt & Whitney or Turbomeca manuals.

For A109S operation below 4°C (40°F) the use of anti-ice additive is authorized but not mandatory due to aircraft anti-ice fuel filter installation. For additive requirements and blending procedures refer to Pratt & Whitney PW207C engine /maintenance /installation manual

For A119 and AW119 MKII operation below 4°C (40°F) the use of anti-ice additive is not mandatory, since the engine is equipped with a fuel heater.

NOTE 5. For helicopters up to and including S/N 7114 not equipped with adjustable seat kit P/N 109-0700-49-1, moment arm of pilot and forward passenger seat is 1650 mm (65 in) from sta. 0.

NOTE 6.

- a. Model A109A helicopters, S/N 7107, 7130 and subsequent, are eligible for day and night IFR operations, with one pilot or with two pilots, when "IFR" installation Agusta Kit No. 109-0810-22, Rev. E or later FAA-approved revision is incorporated and the helicopter is operated in accordance with Model A109A Flight Manual IFR Supplement No. 1 approved by RAI under date of July 16, 1978 and subsequent approved revisions. (NOTE: the above-noted kit and flight manual supplement comprise the Agusta version of FAA-approved STC No. CH2699SW).
- b. Model A109A II and A109C helicopters S/N 7256, and subsequent, are eligible for day and night IFR operations with one, or with two pilots when "IFR" installation Kit No. 109-0810-22, Rev. E or, later FAA approved revision, is incorporated and the helicopter is operated in accordance with Model A109 II and A109C Rotorcraft Flight Manuals.

- c. Model A109K2 helicopters S/N 10001 and subsequent, are eligible for day and night, single pilot IFR operation when IFR installation Agusta Kit No. 109-0810-22-135 and subsequent approved dash numbers are incorporated.  
Certification Basis:  
- Appendix B to Part 27 - Airworthiness criteria for helicopter instrument flight - Amdt. 27.19.  
- FAR Part 27 Paragraph 27.672 Amdt. 21; 27.1309 Amdt 21; 27.1329 Amdt 21; 27.1335 Amdt. 13.  
The helicopter shall be operated in accordance with the Model A109K2 Flight Manual IFR Supplement No. 2.
- d. Model A109E Helicopters S/N 11001 and subsequent, are eligible for day and night, single pilot IFR operation when IFR installation Agusta Kit P/N 109-0810-22-143 and subsequent approved dash numbers are incorporated.  
Certification Basis:  
- Appendix B to Part 27 - Airworthiness criteria for helicopter instrument flight - Amdt. 27.19.  
- FAR Part 27 Paragraph 27.672 Amdt. 21; 27.1309 Amdt 21; 27.1329 Amdt 21; 27.1335 Amdt. 13.  
The helicopter shall be operated in accordance with the Model A109E Flight Manual.
- e. Model A109S Helicopters S/N 22001 and subsequent, are eligible for day and night, single pilot IFR operation. The IFR is part of the Basic Certification.
- f. Model AW109SP Helicopters S/N 22201, 22203, and 22214 and subsequent, are eligible for day and night, single pilot IFR operation. The IFR is part of the Basic Certification

NOTE 7.

Model A109A helicopters are eligible for operations at maximum weight of 2600 kg (5732 lb.) when Agusta Technical Bulletin No.109-20 and subsequent approved revisions are incorporated. For Model A109A helicopters not incorporating the Agusta Technical Bulletin No. 109-20, the following limitations are to be applied.

## - Airspeed limits

Never exceed speed ( $V_{NE}$ ) 168 kts IAS

For reduction of VNE with altitude and OAT, see page 1-2A of the FAA-approved Rotorcraft Flight Manual.

## - CG Range (Gear Down)

## Longitudinal Limits --

Refer to diagram on page 5 (Model A109A) for weight up to 2450 kg. (5400 lb.)

## Lateral Limits --

Refer to diagram on page 6 (Model A109A) for weight up to 2450 kg. (5400 lb.)

## - Maximum Weight

2450 kg (5400 lb.)

See Page 1-2B of the FAA-approved Rotorcraft Flight Manual.

## - Maximum Operating Altitude

4560m (15000 ft)

See Page 1-2B of the FAA-approved Rotorcraft Flight Manual.

NOTE 8.

For Models A109AII, A109C, and A109K2, the auxiliary fuel tank installation P/N 109-0810-56 adds a total fuel capacity of 40.8 U.S. Gal. (153 lit.) at sta. 4708 mm (185.3 in.) of which 40 U.S. Gal. (150 lit.) is usable. For Model A109E, the fuel tank installation P/N 109-0811-49 adds a total of fuel capacity of 70 U.S. gal. (265 lit.) all usable.

For Model A109S the fuel tank installation P/N 109-0813-32 adds a total of fuel capacity of 60.76 U.S. Gal. (230 lit) all usable.

For Model A119 and AW119 MKII the fuel tank installation P/N 109-0811-49 adds a total of fuel capacity of 70 US Gal. (265 lit) all usable.

For Model AW109SP the fuel tank installation P/N 109-0813-32 adds a total of fuel capacity of 60.76 U.S. Gal. (230 lit) all usable

NOTE 9.

The Models A109/A109A/A109AII/A109C/A109K2/A109E/A119/A109S/AW119 MKII /AW109SP are identified by the general assembly drawing as follows:

109-9000-01-5	for A109
109-9000-01-11/15/19/23/27	for A109A
109-9000-01-31	for A109AII
109-9000-01-135	for A109C
109-9000-01-139	for A109K2
109-9000-01-149	for A109E
119-9000-01-107	for A119
109-9000-09-101	for A109S
119-9000-01-111	for AW119 MKII
109-9000-09-105	for AW109SP

- NOTE 10. The model A109K2 is eligible for operations on clear airfield and helipad with the critical engine failure concept when the installation P/N 109-0822-47 (all the approved dashes) is incorporated and the helicopter is operated in accordance with the Model A109K2 Flight Manual Supplement No. 3 "Take-off and landing procedures and performance data on clear airfield and helipad with critical engine failure".
- Certification Basis:  
That applicable to the A109K2 plus JAR 29.45(a), (b)(2) Amdt. Base; JAR 29.49(a) Amdt. Base; JAR 29.51 Amdt. Base; JAR 29.53 Amdt. Base; JAR 29.55 Amdt. Base; JAR 29.59 Amdt. Base; JAR 29.60 Amdt. Base; JAR 29.61 Amdt. Base; JAR 29.62 Amdt. Base; JAR 29.64 Amdt. Base; JAR 29.65 (a) Amdt. Base; JAR 29.67 (a) Amdt. Base; JAR 29.75 Amdt. Base; JAR 29.77 Amdt. Base; JAR 29.79 Amdt. Base; JAR 29.81 Amdt. Base; JAR 29.85 Amdt. Base; JAR 29.87 (a) Amdt. Base; FAR 29.861(a) Amdt. 26; FAR 29.901(c) Amdt. 25 for engines installations only; FAR 29.901 (c) Amdt. 25. For engines installation only; FAR 29.903(b), (c), (e) Amdt. 31; FAR 29.908(a) Amdt. 25; FAR 29.923 Amdt. 23; FAR 29.927 (a), (b) Amdt. 12; FAR 29.927 (c)(1) Amdt. 26; FAR 29.953 (a) Amdt. Base; JAR 29.1027(a) Amdt. Base; JAR 29.1045 (a)(1), (b), (c), (d), (f) Amdt. Base; JAR 29.1047 (a) Amdt. Base; JAR 29.1181 (a) Amdt. Base; JAR 29.1187 (e) Amdt. Base; JAR 29.1189 (c) Amdt. Base; JAR 29.1191 (a)(1) Amdt. Base; JAR 29.1193 (e) Amdt. Base; JAR 29.1305 (a)(6), (b) Amdt. Base; JAR 29.1309 (b)(2)(i), (d) Amdt. Base; JAR 29.1323 (c)(1) Amdt. Base; JAR 29.1331 (b) Amdt. Base; JAR 29.1587 (a) Amdt. Base. The JAR requirements listed above meet or exceed the FAR Part 27 and FAR Part 29 CAT A. requirements.
- NOTE 11. The Model A109E is eligible for operations on clear airfield and helipad with the "Equivalent Category A" when the installation P/N 109-0811-39 (all the approved dashes) is incorporated and the helicopter is operated in accordance with the Model A109E Flight Manual Supplement No. 12 Equivalent Category "A" operations.
- In addition to the paragraphs of the Certification Basis, the A109E must comply also with the following paragraphs:  
JAR 29.45(a),(b)(2) Amendment base; JAR 29.49(a) Amendment base; JAR 29.51 Amendment base; JAR 29.53 Amendment base; JAR 29.55 Amendment base, JAR 29.59 Amendment base; JAR 29.60 Amendment base; JAR 29.61 Amendment base; JAR 29.62 Amendment base; JAR 29.64 Amendment base; JAR 29.65 (a) Amendment base; JAR 29.67 (a) Amendment base; JAR 29.75 Amendment base; JAR 29.77 Amendment base; JAR 29.79 Amendment base; JAR 29.81 Amendment base; JAR 29.85 Amendment base; JAR 29.87 (a) Amendment base; (JAR 29.571 Amendment base Fatigue evaluation of structure.) AC Material only: AC 29-2A Item 230 Paragraph 10; JAR 29.861 (a) Amendment base; JAR 29.901 (c) Amendment base; JAR 29.903 (b), (c), (e) Amendment base; JAR 29.908 (a) Amendment base; JAR 29.927 (c)(1), JAR 29.953(a) Amendment base; JAR 29.1027(a) Amendment base; JAR 29.1045 (a)(1), (b), (c), (d), (f) Amendment base; JAR 29.1047 (a) Amendment base; JAR 29.1181(a)(1) Amendment base; JAR 29.1193 (e) Amendment base; JAR 29.1195(a), (d) Amendment base; JAR 29.1305 (a)(6),(b) Amendment base; JAR 29.1309 (b)(2)(i), (d) Amendment base; JAR 29.1323 (c)(1) Amendment base; JAR 29.1331 (b) Amendment base; JAR 29.1351(d)(2) Amendment base; JAR 29.1587 (a) Amendment base. The JAR requirements listed above meets the FAR Part 27 and FAR Part 29 CAT A. requirements.
- NOTE 12. For the models A109K2 and A109E that has been certified with ditching provisions in accordance with RFM supplements No. 22 & 21 respectively the certification basis has been updated adding with the following paragraphs: FAR 27.563 Amendment 26, FAR 27.801 Amendment 11, FAR 27.807 Amendment 26, FAR 27.1411 Amendment 11, FAR 27.1415 Amendment 11.
- NOTE 13. The model A109E, A109S and AW109SP rotorcraft employ electronic engine controls, commonly named Full Authority Digital Engine Controls (FADEC), and is recognized to be more susceptible to Electromagnetic Interference (EMI) than rotorcraft that have only manual (non-electronic) controls. 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 be either qualified to a standard acceptable to the FAA or tested at the time of installation for interference to the FADEC. This type of testing must employ the particular FADEC's diagnostic techniques and external diagnostic techniques. The test procedure must be FAA approved.
- NOTE 14. The model A109E may be equipped with either PW206C or TM 2K1 turboshaft engines. Changes to the approved TC holder Type Design, that may have an effect on engine installation or operation, must be limited in applicability to the engine installation for which they have been tested and approved.
- NOTE 15. Model A109 helicopters may be converted to Model A109A helicopters in accordance with EASA/ENAC-approved Service Instructions No. A109-1.

- NOTE 16. Cabin Interior and Seating Configurations must be approved.
- NOTE 17. Any changes to the type design of this helicopter by means of an amended type certificate (TC), supplemental type certificate (STC), or amended STC, requiring instructions for continued airworthiness (ICA's) must be submitted thru the project aircraft certification office (ACO) for review and acceptance by the Fort Worth -Aircraft Evaluation Group (FTW-AEG) Flight Standards District Office (FSDO) prior to the aircraft delivery, or upon issuance of the first standard airworthiness certificate for the affected aircraft, whichever occurs later as prescribed by Title 14 CFR 21.50. Type design changes by means of a field approval that require ICA's must have those ICA's reviewed by the field approving FSDO.
- NOTE 18. Effective August 24, 2006, the Agusta model A119, from serial number 14517 up to 14700, and the Agusta model AW119 MKII, from serial number 14701 and on, are approved for production at Agusta Aerospace Corporation's (AAC), Philadelphia facility under Production Certificate PC 120NE. This PC is based on a Decision Paper / Licensing Agreement approved on February 24, 2005. All technical data previously developed by Agusta S.p.A. in support of this model and approved by ENAC, and further approved by the FAA under the requirements of FAR 21.29 and the BASA between the US and Italy, are still in effect and any revisions to that data will still need to be FAA approved as previously agreed upon prior to the issuance of this PC. All export tags will need to document that this model and serial number were manufactured in Agusta AAC's Philadelphia facility.
- Effective 01 June 2011, the Agusta Aerospace Corporation name was changed to AgustaWestland Philadelphia Corporation.**
- Effective 02 December 2011, PC120NE was changed to reflect the Agusta Aerospace Corporation name change to AgustaWestland Philadelphia Corporation**
- NOTE 19. The Model A109S is eligible for Category A operations when the installation P/N 109-0823-98 (all the approved dash numbers) is incorporated and the helicopter is operated in accordance with the Model A109S Rotorcraft Flight Manual No. 109G0040A013 and No. 109G0040A014 RFM Optional Equipment Supplements No. 7 Category A Operations.
- In addition to the paragraphs of the Certification Basis, the A109S complies with JAR 27 Appendix C.
- The JAR requirements listed in the JAR 27 Appendix C meets the Appendix C to FAR PART 27 Criteria for Category A.
- The Model A109S with Trekker Kit P/N 109G0000F01 is eligible for Category A operations when the Engine Fire Extinguisher Kit P/N 109-0811-39-109 is installed.  
Refer to RFM 109G0040A034 Supplement No. 4 Category A Operations.
- In addition to the paragraphs of the Certification Basis, the A109S with Trekker Kit P/N 109G0000F01 complies with CS 27 Amdt.3 Appendix C.
- The CS requirements listed in the CS 27 Appendix C meets the Appendix C to FAR PART 27 Criteria for Category A. Refer to Leonardo document No. 109G0274A001.
- NOTE 20. The Model AW109SP is eligible for Category A operations when operated in accordance with the Model AW109SP Rotorcraft Flight Manual No. 109G0040A018 and No. 109G0040A019 RFM Optional Equipment Supplements No. 4 Category A Operations.
- In addition to the paragraphs of the Certification Basis, the AW109SP complies with CS 27 Appendix C.
- The CS requirements listed in the CS 27 Appendix C meets the Appendix C to FAR PART 27 Criteria for Category A.
- NOTE 21. For models AW119MKII, Pilot and Copilot Crashworthy Seats Installation Kit P/N 109G2510F04 and Passenger Crashworthy Seats Installation Kit P/N 109G2520F45 are eligible for installation on helicopters S/N 15001 and subs.

..... END .....