

CT7-8 Engine

DUAL ENGINE LIMITS							
Rating	Time	Q (%)	T4.5 (°C)	Ng (%)	Np (%)	Rated SHP @ SLS	Rated Np (%)
Max continuous		100	920	99.9	106	2043	105
		86 (1)	when airspeed is greater than 100 KIAS				
30 Min (2)	30 min	100	957	101.5	106	2336	105
Takeoff	5 min	100	986	102.9	106	2520	105
Transient	12 sec		987	103.2	116		
	10 sec	120 (3)					
SINGLE ENGINE LIMITS							
Rating	Time	Q (%)	T4.5 (°C)	Ng (%)	Np (%)	Rated SHP @ SLS	Rated Np (%)
Max continuous		120	920	99.9	106	2043	105
OEI	30 min	120	979	102.4	106	2498	100
OEI	2 min	120	990	102.9	106	2520	100
OEI	30 sec	135	1010	103.7	106	2600	100
Transient	5 sec	156(3)					
Max starting	peak		1000				

- Shaded box with bold number denotes a FADEC controlled limiter value.
- Q (%) values are gearbox limits.
- (1) 86% Q is not a gearbox limit. Its purpose is to limit flight control loads at high speed thereby preserving dynamic component replacement times.
- (2) Rating applies to hovering flight only.
- (3) Associated with “torque ramp up” due to abnormal rotor droop at FADEC controlled dual or OEI limit.
- 100% Q corresponds to a combined power input from both engines to the MGB of 4,170 shp at a rotor speed of 105% (258 rpm). Power turbine speed (Np) of 105% corresponds to 21,945 rpm.
- Maximum continuous dual engine torque may exceed 100% on one engine to a maximum of 110% provided that the torque on the other engine is proportionally less than 100% and the sum of the individual torque values does not exceed 200%.
 - Np overspeed trip is at 120%.
 - Ng overspeed trip is at 108.5%
- When flying at altitudes greater than 8,000 feet at outside air temperatures lower than -20 degrees C, it is possible to reach the corrected Ng speed limit of the engine. When this occurs, the engine will not produce more power. The only indication that the pilot will see when reaching this limit is that further increase in collective will commensurately droop Nr.

CT7-8A Engine

DUAL ENGINE LIMITS							
Rating	Time	Q (%)	T4.5 (°C)	Ng (%)	Np (%)	Rated SHP @ SLS	Rated Np (%)
Max continuous		100	935	99.9	106	2043	105
		86 (1)	when airspeed is greater than 100 KIAS				
30 Min (2)	30 min	100	988	101.5	106	2336	105
Takeoff	5 min	100	995	102.9	106	2520	105
Transient	12 sec		1003	103.2	116		
	10 sec	120 (3)					
SINGLE ENGINE LIMITS							
Rating	Time	Q (%)	T4.5 (°C)	Ng (%)	Np (%)	Rated SHP @ SLS	Rated Np (%)
Max continuous		120	988	102.4	106	2498	105
OEI	2 min	120	1006	102.9	106	2520	100
OEI	30 sec	141	1049	103.7	106	2740	100
Transient	5 sec	156(3)					
Max starting	peak		1000				

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- Q (%) values are gearbox limits.
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- (2) Rating applies to hovering flight only.
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- Maximum continuous dual engine torque may exceed 100% on one engine to a maximum of 110% provided that the torque on the other engine is proportionally less than 100% and the sum of the individual torque values does not exceed 200%.
- Np overspeed trip is at 120%.
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- When flying at altitudes greater than 8,000 feet at outside air temperatures lower than -20 degrees C, it is possible to reach the corrected Ng speed limit of the engine. When this occurs, the engine will not produce more power. The only indication that the pilot will see when reaching this limit is that further increase in collective will commensurately droop Nr.

ROTOR SPEED LIMITS

POWER OFF
Maximum 110% Nr
Minimum 95% Nr
POWER ON
Maximum 110% Nr
Minimum 95% Nr

DRIVE SYSTEM LIMITS

Dual Engine			
Torque (%)	No Inspect Req'd	Serviceability Check	Remove/Replace MGB
0% to 100%	Continuous		
101% to 120%	< 10 sec	≥ 10 sec	
121% to 140%		< 10 sec	≥ 10 sec
greater than 140%			Any occurrence

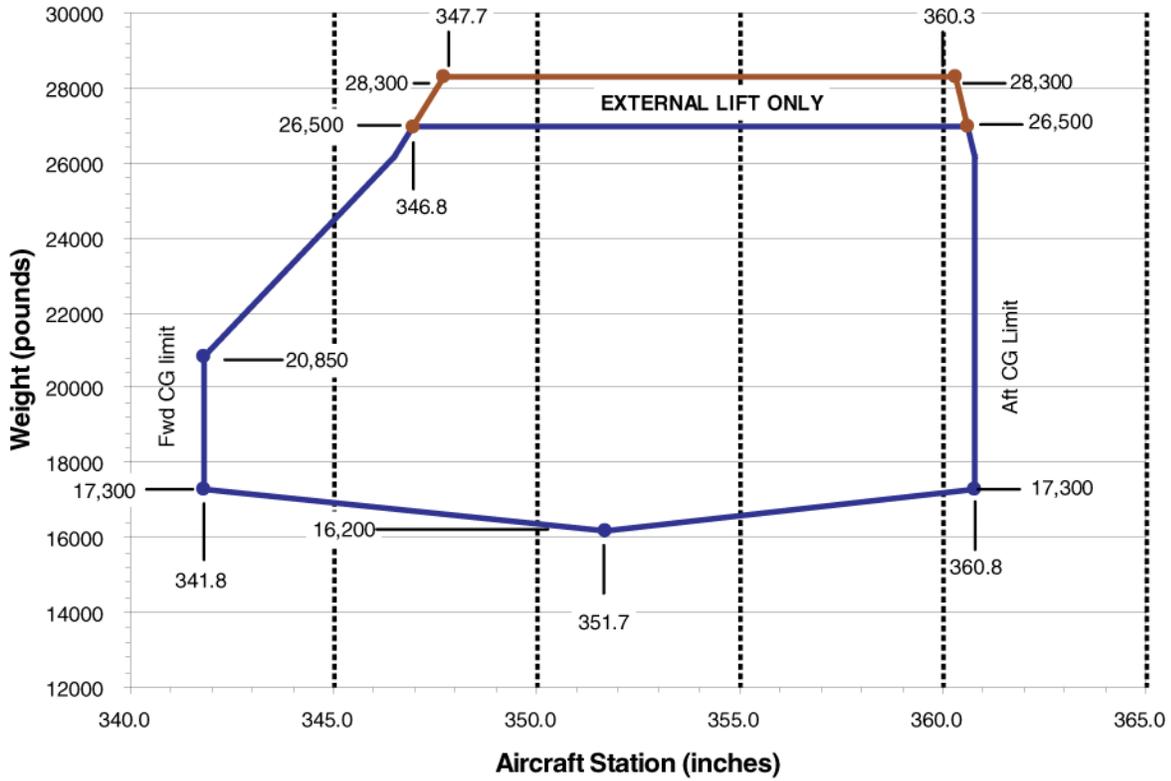
Single Engine			
Torque (%)	No Inspect Req'd	Serviceability Check	Remove/Replace MGB
0% to 120%	Continuous		
121% to 140%	< 30 sec	≥ 30 sec	
141% to 156%		< 5 sec	≥ 5 sec
greater than 156%			Any occurrence

AIRSPEED LIMITS

Vne (never exceed) Power On	165 KIAS. See Rotorcraft Flight Manual for variations of Vne with gross weight and density altitude.
Vle/Vlo (gear extended/gear operating)	165 KIAS/165 KIAS.
Vne with floats "armed"	80 KIAS.
Vne Power Off	120 KIAS.
Vne Hoist Extended	120 KIAS.
Vne Upper Sliding Door Open	120 KIAS.
Vne External Cargo	120 KIAS.

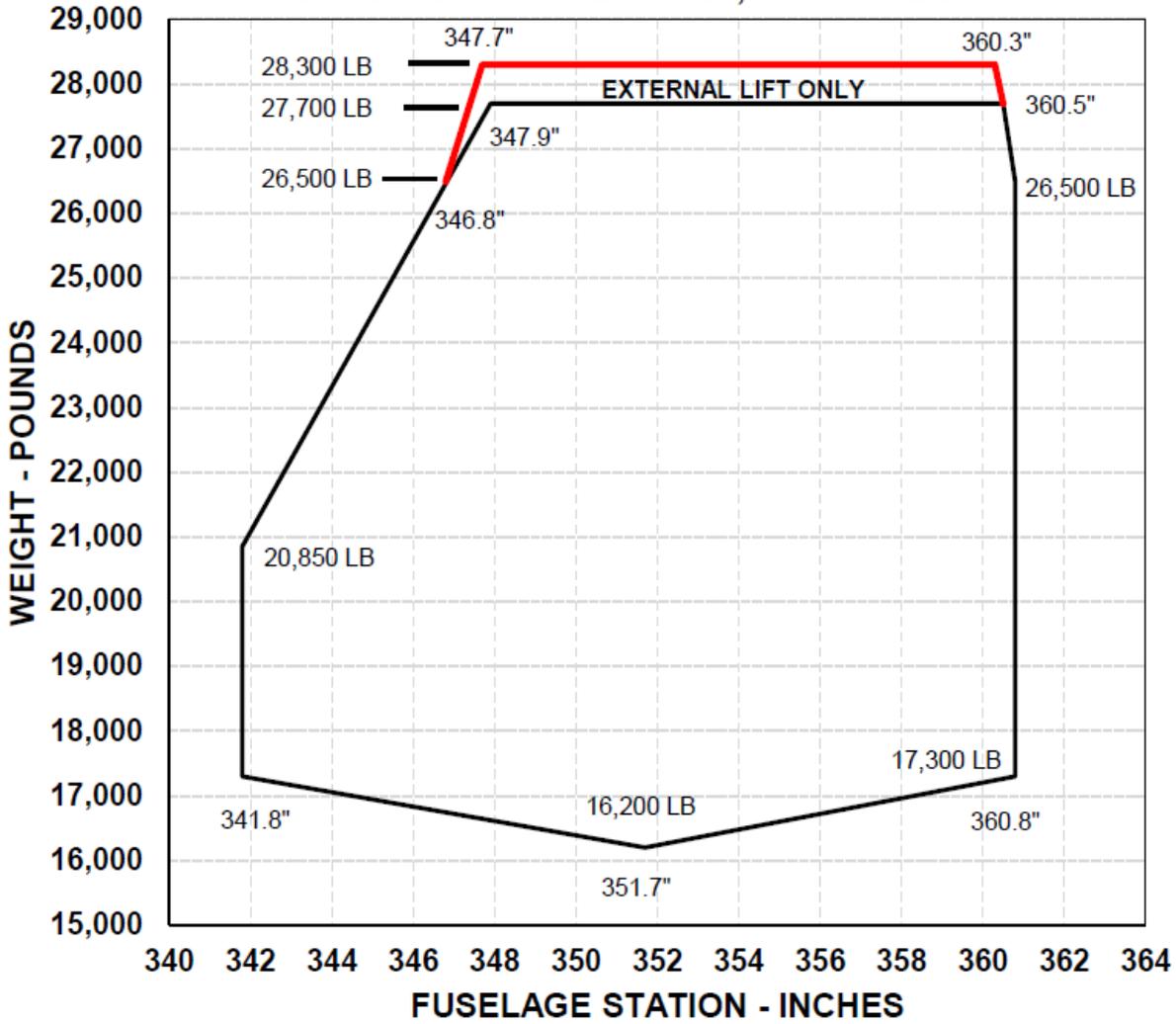
CENTER OF GRAVITY (CG) LIMITS

Weight and Center of Gravity Envelope Maximum Gross Weight 26,500 Pounds



CENTER OF GRAVITY (CG) LIMITS (CONTINUED)

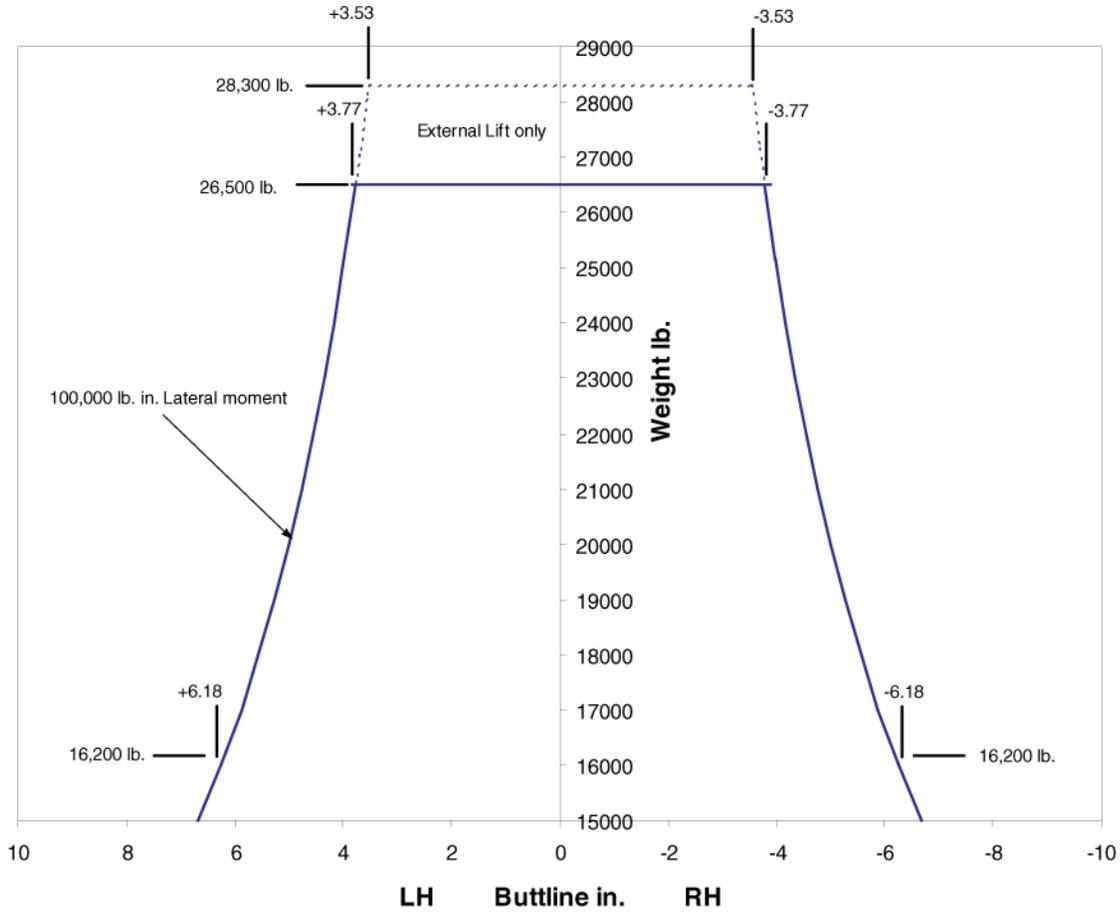
WEIGHT AND CENTER OF GRAVITY ENVELOPE MAXIMUM GROSS WEIGHT 27,700 POUNDS



LATERAL CG LIMITS:

MAXIMUM GROSS WEIGHT 26,500 POUNDS

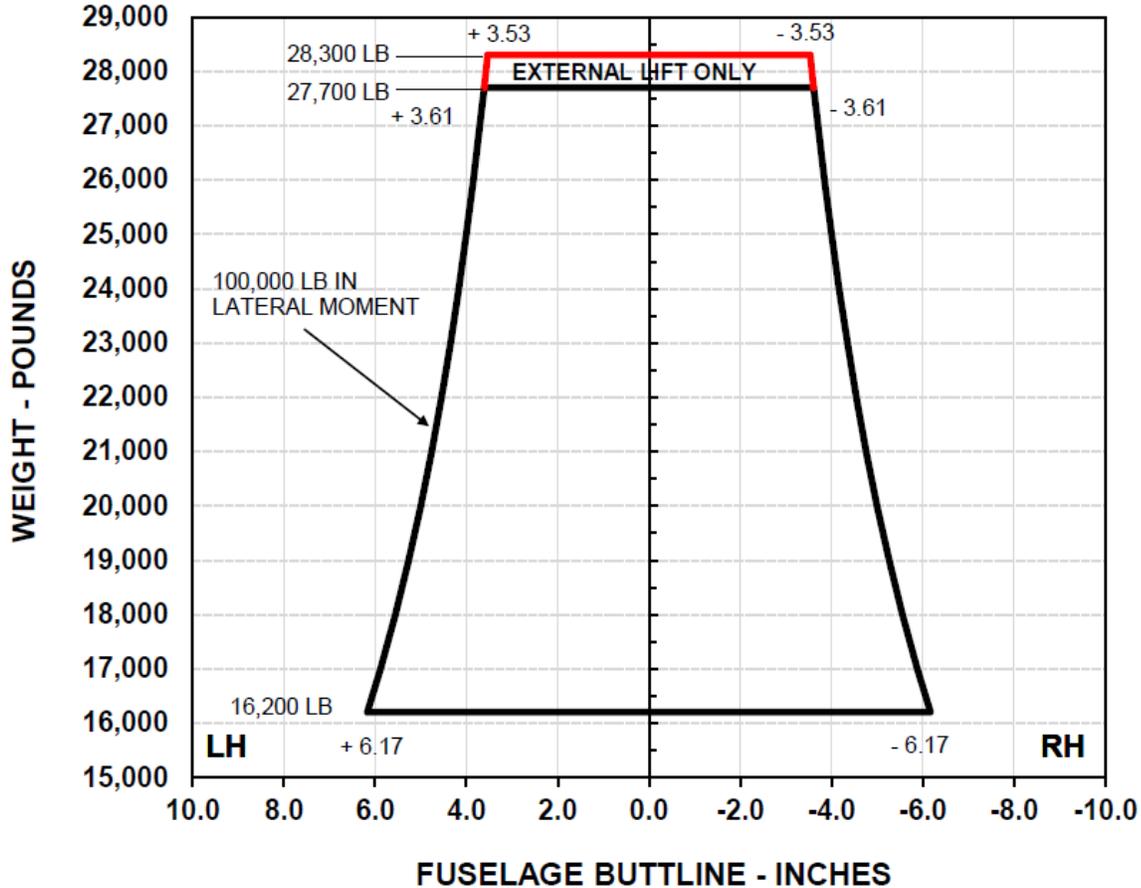
S-92 Lateral CG Limits



RF91059A
SA

LATERAL CG LIMITS (CONTINUED):

**MAXIMUM GROSS WEIGHT 27,700 POUNDS
LATERAL CG LIMITS**



EMPTY WEIGHT C.G. RANGE	None
DATUM	341.2 inches forward of the main rotor centroid
LEVELING MEANS	Leveling plate at STA 238.3, BL 40 RH, and plumbline from top of RH forward doorframe.
MAXIMUM WEIGHT	26,500 pounds 27,700 pounds with Gross Weight Expansion Option (see Note 16) 28,300 pounds with external load
MAXIMUM EXTERNAL LOAD	8000 pounds

ALTITUDE LIMITS	Takeoff and landing 11,000 feet density altitude
	Enroute 15,000 feet density altitude 10,000 feet pressure altitude in icing conditions See Note 11
AMBIENT TEMPERATURE LIMITS	-40°C to ISA+35°C (see Note 9)
MINIMUM FLIGHT CREW	2 pilots 3 (2 pilots, 1 cabin crew) Combination Passenger and Cargo
NUMBER OF SEATS	2 Crew 1 Observer 19 Passenger maximum (See Notes 6 and 14) Combination Passenger and Cargo Interior Option 3 Crew 9 Passenger maximum
MAXIMUM BAGGAGE	1000 pounds Combination Passenger and Cargo Interior Option 0 pounds
MAXIMUM CARGO (See Note 15)	Combination Passenger and Cargo Interior Option 92276-54000-011 kit installed 1650 lb at 200 lb./sq. ft., Sta 281 to 462 1100 lb at 200 lb./sq. ft., Sta 340 to 462 550 lb at 200 lb./sq. ft., Sta 397 to 462 92276-54000-012 kit installed 5000 lb at 200 lb./sq. ft., Sta 281 to 462 3100 lb at 200 lb./sq. ft., Sta 340 to 462 1200 lb at 200 lb./sq. ft., Sta 397 to 462
FUEL CAPACITY	764 gals (pressure refuel) 713 gals. (gravity refuel) 4.8 gals. unusable at Station 362.5 (See Note 1)
OIL CAPACITY	See General Electric Installation Manual SEI-866
ROTOR BLADE CONTROL MOVEMENTS	For rigging information refer to Maintenance Manual

MANUFACTURER'S SERIAL NUMBERS

Sikorsky Aircraft Corporation under Production Certificate Number 105:

920006 through 920114, 920116 through 920126, 920128, 920130, 920133, 920137, 920143 and subsequent are eligible.

Keystone Helicopter Corporation for Production under Type Certificate Only.
920115 is eligible

Keystone Helicopter Corporation under Production Certificate Number 121NE:
920127*, 920129*, 920131, 920132, 920134 through 920136, 920138 through 920142 are eligible.

*920127 and 920129 originally designated as eligible for production by Keystone Helicopter Corporation under Type Certificate Only and redesignated upon addition of S-92A to Production Certificate Number 121 NE.

CERTIFICATION BASIS

Type Certificate No. R00024BO
14 CFR Part 29 Amendments 29-1 to 29-47, inclusive
14 CFR Part 36 Amendment 24

Equivalent Safety Findings:

Number TC0309BO-R/F-1
14 CFR Part 29.173 Static longitudinal stability
14 CFR Part 29.175 Demonstration of static longitudinal stability.

Number TC0309BO-R/F-4
14 CFR Part 29.177 Static directional stability.

Number TC0309BO-R/P-1
14 CFR Part 29.1305(a)(24) Power Plant Instruments.

Number TC0309BO-R/P-5
14 CFR Part 29.1181(a)(4) Designated Fire Zones; Regions Included.

Special Conditions:

No. 29-011-SC for Dual-Engine 30 Minute Power
No. 29-008-SC for High Intensity Radiated Frequency

Noise Control Act of 1972

Compliance with the following optional requirements has been established: Ditching provisions FAR 29.563 including 29.801 and 29.807(d) and excluding 29.1411, 29.1415, and 29.1561 when emergency flotation system is installed. For extended over-water operations, compliance with the operating rules and FAR 29.1411, 29.1415, and 29.1561 must be shown.

Anticollision light system installed in accordance with Sikorsky Drawing 33792-52871

Basis of certification is the same as the S-92A plus the following

Equivalent Safety Findings:

Number AT1610BO-R-S-1

14 CFR Part 29.1401(d) Anticollision light system

Passenger Configuration with Side Facing Executive Seats:

Basis of certification is the same as the S-92A plus the following

Equivalent Safety Findings:

Number AT01655BO-R-C-2

14 CFR Part 29.809(a) Emergency exit arrangement

14 CFR Part 29.813(c)(2) Emergency exit access

Special Conditions:

None

Combination Passenger and Cargo Configuration:

Basis of certification is the same as the S-92A plus the following

Equivalent Safety Findings:

Number TD1454BO-R-S-1

14 CFR 29.855(a)(1), (d) Cargo and baggage compartments

Number TD1454BO-R-C-1

14 CFR 29.809(a) Emergency exit arrangement

14 CFR 29.813(c)(2) Emergency exit access

Special Conditions:

None

Search and Rescue (SAR) Automatic Flight Control System (AFCS) Installation:

Basis of certification is the same as the S-92A plus the following

Equivalent Safety Findings:

None

Special Conditions:

No. 29-023-SC for Installation of a Search and Rescue (SAR) Automatic Flight Control System (AFCS)

If Penny & Giles model D51615-142 CVR/FDR is installed in accordance with Sikorsky drawing 92070-20096, 92070-60037, 92070-60038, and 92600-01027, then compliance has also been shown to Amendment 29-52 of 14 CFR 29.1457 and 29.1459.

PRODUCTION BASIS

Sikorsky Aircraft Corporation
Production Certificate Number 105

Keystone Helicopter Corporation, Production Certificate Number 121 NE,
under licensing agreement with Sikorsky Aircraft Corporation.

In the event of an application for a standard airworthiness certificate or, if an applicant intends to produce a new aircraft under 14 CFR § 21.183(d), and the applicant is manufacturing, building, or assembling to another person's type certificate, the applicant must provide written evidence of permission from the type certificate holder. Conduct of such activity without written evidence of permission may be a violation of 49 U.S.C. § 44704(a)(3).

EQUIPMENT

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

In addition, the following item(s) of equipment is (are) required:

Rotorcraft Flight Manual as shown in FAA Approved Sikorsky document SA S92A-FMCD-000. This document specifies the applicable flight manual number for each aircraft. The applicable flight manual number is determined by the aircraft configuration. SA S92A-FMCD-000 will be revised as required to add additional rotorcraft flight manual numbers, new revisions, and new aircraft as appropriate.

- NOTES -

NOTE 1

Current weight and balance report, including list of equipment included in certified empty weight, and loading instructions, when necessary, must be provided for each rotorcraft at the time of original certification. The certificated empty weight and corresponding C.G. locations must include un-drainable oil and unusable fuel.

See Rotorcraft Flight Manual loading section for variations of fuel weight and moment-arm with variations of fuel and fuel quantity.

NOTE 2

The rotorcraft must be operated in accordance with the appropriate FAA-approved

Rotorcraft Flight Manual as required under "EQUIPMENT". All placards required in the FAA-approved Rotorcraft Flight Manual must be installed in the rotorcraft. The following placard must be displayed in front of and in clear view of the pilots:

"THIS HELICOPTER MUST BE OPERATED IN ACCORDANCE WITH THE OPERATING LIMITATIONS SPECIFIED IN THE FAA APPROVED ROTORCRAFT FLIGHT MANUAL."

All placards listed in the approved flight manual must be installed in the specified locations.

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- NOTE 3 Information essential to the proper maintenance of the rotorcraft is contained in the Sikorsky S-92A Maintenance Manual, SA S92A-AMM-000 and in the Airworthiness Limitations and Inspection Requirements Manual, SA S92A-AWL-000. The Airworthiness Limitations and Inspection Requirements for gross weights above 26,500 pounds are contained in document number SIC920010 (see Note 16). The values of retirement (service) life are contained in Chapter 4 of the Airworthiness Limitations and Inspection Requirements Manual in documents SA S92A-AWL-000 and SIC920010 (if applicable). The values of retirement (service) life cannot be changed without FAA Engineering approval. Manuals SA S92A-AMM-000 and SA S92A-AWL-000 are provided with each helicopter. Manual SIC920010 is provided with helicopters with the 27,700 lb. Gross Weight Expansion option.
- NOTE 4 The term "Unlimited Life" is defined as 30,000 flight hours for the Model S-92A rotorcraft.
- Operation of individual aircraft beyond 30,000 flight hours is contingent upon a Life Extension Program approved by FAA Engineering
- NOTE 5 The model S-92A rotorcraft 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 FAA 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 FAA Engineering approved alternate test plan.
- NOTE 6 Seating arrangements for 19 passengers maximum have been approved by the FAA. With these seating arrangements, seats located along the aisle way shall not have armrests installed on the aisle way side of any aisle seat unless the aisle way seat armrest incorporates an armrest hold down feature. Installation of the Observer Seat and/or Passenger Seat located on the forward starboard bulkhead is prohibited with the installation of the Lower Search/Rescue Door. Occupancy of the Passenger Seat located on the forward starboard bulkhead is prohibited if Observer Seat is installed. Carriage of passengers is prohibited with the installation of the Lower Search/Rescue Door. These seating arrangements are shown in the Loading Information section of the FAA-approved Rotorcraft Flight Manual. Additional optional seating arrangements or related passenger provisions may be approved in accordance with the Type Certificate Basis.
- NOTE 7 Deleted.
- NOTE 8 Deleted.
- NOTE 9 Preheat must be used for cold soak starts when the OAT is -13°F (-25°C) or below. See Rotorcraft Flight Manual for Cold Weather Procedures.
- NOTE 10 External lift operations utilizing the cargo hook are limited to 4 lifts per hour.
- NOTE 11 For flight in icing conditions, aircraft must be equipped with Rotorcraft Ice Protection System (RIPS) and Rotorcraft Flight Manual as shown in FAA Approved Sikorsky document SA S92A-FMCD-000, Revision 5 and subsequent. For flight into icing conditions, RIPS must be turned on. RIPS equipped aircraft are not approved for flight in icing conditions above 10,000 ft pressure altitude, or for flight in freezing rain, freezing drizzle or Supercooled Large Drop (SLD) icing conditions.

- NOTE 12 Any modifications, alterations, or other changes to the exterior of the aircraft that may affect the operation or function of the RIPS system, or create an area or surface for ice collection that may be released in flight, must be approved by FAA Engineering to allow the approval of flight in icing conditions to be continued.
- NOTE 13 The S-92A rotorcraft has not been certified for Category A vertical takeoffs and landings from an elevated heliport.
- NOTE 14 The S-92A has been certified for Category A with a maximum passenger seating configuration of 19 passenger seats and Category B with a maximum passenger seating configuration of 9 or less passenger seats
- NOTE 15 Only serial numbers 920140 and 920142 are eligible for carriage of approved cargo in the Passenger and Cargo Configuration.
- NOTE 16 Capability to operate above 26,500 pounds and up to 27,700 pounds aircraft gross weight is predicated on the aircraft being structurally modified in accordance with the 92070-10004-011, 92070-10004-013 or 92070-10004-017 Gross Weight Extension (GWE) modification kits. S-92A Rotorcraft Flight Manual Supplement No. 14 Part 1 "27,700 lb. Gross Weight Expansion" must be complied with when operating above 26,500 pounds. The information contained in RFM Supplement No. 14 supplements or supersedes the limitations and procedures in the basic Rotorcraft Flight Manual. When operated at gross weights above 26,500 pounds, the helicopter must comply with document number SIC920010 "Airworthiness Limitations and Inspection Requirements Gross Weight Expansion (GWE) Supplement No. 1." The information contained in document number SIC920010 supplements or supersedes the basic Airworthiness Limitations and Inspection Requirements Manual SA S92A-AWL-000.

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