

CHAPTER 3

LIFE-LIMITED COMPONENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
3.000	Life-Limited Components	3.1
3.001	Introduction	3.1
3.002	Time-In-Service Records	3.1
3.003	Fatigue Life-Limited Parts	3.1
3.100	Inspection And Overhaul Requirements	3.2
3.110	Powerplant Overhaul Requirements	3.2
3.120	Aircraft Overhaul Requirements	3.2
3.130	12-Year Inspection and Limited Overhaul Requirements	3.2
3.140	Additional Bearing Replacement Requirements	3.2
3.200	Type Certificate Data Sheet (TCDS)	3.2
3.300	Airworthiness Limitations Section	3.13

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CHAPTER 3

LIFE-LIMITED COMPONENTS

3.000 Life-Limited Components3.001 Introduction

This section lists fatigue life-limited parts and specified overhaul requirements for the R22 helicopter.

3.002 Time-In-Service Records

It is the operator's responsibility to maintain accurate time-in-service records for the airframe, engine, and life-limited components. R22s are equipped with either an oil-pressure-activated hourmeter which records engine run time or a collective-activated hourmeter which records flight (collective up) time. Either method may be used to track time in service, however numerical values for service lives depend on the tracking method used (refer to § 3.300).

Calendar time in service for the airframe and engine begins on the date of the original RHC-issued Export (or Standard) Certificate of Airworthiness for the helicopter. Calendar time in service for spares without a storage limit (refer to § 1.490) begins on the date of the RHC-issued Airworthiness Approval Tag (Authorized Release Certificate) issued with the invoice.

When installing a life-limited part or a part with an overhaul requirement, record in the helicopter maintenance record the installation date, part number, part name, serial number, helicopter total time, and time in service accumulated by part since new or since last overhaul, as applicable.

WARNING

Components with mandatory overhaul or retirement intervals whose time-in-service is not reliably documented cannot be considered airworthy and must be removed from service.

3.003 Fatigue Life-Limited Parts

The Airworthiness Limitations Section lists the mandatory replacement schedule for fatigue life-limited parts.

Listed items must be removed from the helicopter at the specified intervals and permanently retired from service by destroying or damaging each part so it cannot inadvertently be returned to service. Fatigue lives are based upon normal flight service, including 6 rotor stop-starts and 10 autorotation entries per hour.

3.100 Inspection and Overhaul Requirements

WARNING

Suspected damaged parts removed from damaged aircraft are not to be reinstalled in any aircraft unless part has been returned to RHC, together with its damage history, for inspection and is found by RHC to be airworthy.

3.110 Powerplant Overhaul Requirements

The engine must be overhauled in accordance with the engine manufacturer's overhaul recommendations and procedures. Refer to latest revision of Textron Lycoming Service Instructions No. 1009.

3.120 Aircraft Overhaul Requirements

The complete airframe, including rotor systems, drive system, control system, and fuselage, must be overhauled as instructed by Robinson Helicopter Company when any of the following occur:

1. When the helicopter has been operated for 2200 hours since new or since last overhaul.
2. When an inspection of the helicopter indicates extensive subsurface corrosion in the primary structure, drive system or control system.
3. When the helicopter condition has deteriorated so the helicopter can no longer meet the performance, controllability or safety specifications given in the Pilot's Operating Handbook.
4. When the aircraft has been in service for twelve years since new or since last overhaul, regardless of the hours flown.

3.130 12-Year Inspection and Limited Overhaul Requirements

The helicopter must be inspected and specified components replaced per § 2.600 when the aircraft has been in service for twelve years since new or since last overhaul.

3.140 Additional Bearing Replacement Requirements

R22 main rotor gearbox assemblies S/N 0002 thru 0232 must be returned to RHC for replacement of original pinion bearings at first 1000 hours time in service.

3.200 Type Certificate Data Sheet (TCDS)

The Robinson R22-series Type Certificate Data Sheet (TCDS) reprinted on the following pages is subject to revision.

Visit the FAA Aircraft Certification Regulatory and Guidance Library online databases for TCDS revision status at: <http://rgl.faa.gov>.

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

H10WE
REVISION 15
ROBINSON
R22
R22 ALPHA
R22 BETA
R22 MARINER
August 15, 2013

TYPE CERTIFICATE DATA SHEET NO. H10WE

This data sheet, which is a part of Type Certificate No. H10WE, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of Title 14 of the Code of Federal Regulations.

Type Certificate Holder: Robinson Helicopter Company
2901 Airport Drive
Torrance, California 90505

I. Model R22 Helicopter (Normal Category), Approved March 16, 1979

Engine Lycoming O-320-A2B or O-320-A2C or O-320-B2C (See NOTES 5 & 6)

Fuel 80/87 minimum grade aviation gasoline (for O-320-A2B and A2C)
91/96 UL minimum grade aviation gasoline (for all engines)
100 LL minimum grade aviation gasoline (for all engines)
100/130 minimum grade aviation gasoline (for O-320-B2C)

Engine Limits for all operations Maximum rpm 2652 (124 hp) (104%)
See RFM for maximum manifold pressure corresponding to 124 hp.
See RFM for altitude limitations.

Rotor Limits	Power Off (Rotor Tach.)	Power On (Rotor Tach.)
	Maximum (110%) 561 rpm	(104%) 530 rpm
	Minimum (90%) 459 rpm	(97%) 495 rpm

Airspeed Limits (CAS) V_{ne} (never exceed) Power On and Power Off 98 KCAS sea level to 3,000 feet density altitude, decreasing to 83 KCAS at 8,000 feet density altitude, decreasing to 56 KCAS at 14,000 feet density altitude. Straight line variation between points.

Altitude Limits Density Altitude Limit - 14,000 feet

CG Range	Longitudinal CG	GW	Lateral CG
			Minimum 920 pounds to
	95.5	1225	+1.0R - 0.8L
	96.5	1300	
	97.0		- 2.2L
	97.5		- 2.2L
	98.0		+2.6R
	100.0	1300	
	101.5	1130	+1.2R - 0.7L

Straight Line Variation Between Points shown. See Figure 1.

Page No.	1	2	3	4	5	6	7	8	9	10
Rev. No.	15	15	15	15	15	14	15	14	14	14

I. Model R22 Helicopter (Normal Category), Approved March 16, 1979, (cont'd)

Maximum Gross Weight 1300 lbs.
 No. Seats 2 (See NOTE 1)
 Minimum Weight 920 lbs.
 Maximum Baggage 50 pounds of baggage and installed equipment in either baggage compartment, except combined seat load plus baggage and equipment not to exceed 240 pounds.

Fuel Capacity	Tanks Without Bladders		Tanks With Bladders		Location (STA)
	Capacity (gal.)	Usable (gal.)	Capacity (gal.)	Usable (gal.)	
	Main	19.8	19.2	18.3	
Auxiliary	N/A	N/A	9.7	9.4	103.8

Oil Capacity Engine Oil, 1.5 Gals. at STA 104.8;
 Transmission oil, 0.3 Gal. at STA 100.
 Rotor Blade and Control Movements For rigging information refer to R22 Maintenance Manual
 Serial Nos. Eligible 0002 thru 0300
 0302 thru 0349
 0352 thru 0356

II. Model R22 ALPHA Helicopter (Normal Category), Approved October 12, 1983

Engine Lycoming O-320-B2C
 Fuel 91/96 UL minimum grade aviation gasoline
 100 LL minimum grade aviation gasoline
 100/130 minimum grade aviation gasoline
 Engine Limits for all operations Maximum rpm 2652 (124 hp) (104%)
 See RFM for maximum manifold pressure corresponding to 124 hp.
 See RFM for altitude limitations.
 Rotor Limits

Power Off (Rotor Tach.)	Power On (Rotor Tach.)
Maximum (110%) 561 rpm	(104%) 530 rpm
Minimum (90%) 459 rpm	(97%) 495 rpm

Airspeed Limits (CAS) V_{ne} (never exceed) Power On and Power Off 98 KCAS sea level to 3,000 feet density altitude, decreasing to 83 KCAS at 8,000 feet density altitude, decreasing to 56 KCAS at 14,000 feet density altitude. Straight line variation between points.
 Altitude Limits Density Altitude Limit - 14,000 feet

II. Model R22 ALPHA Helicopter (Normal Category), Approved October 12, 1983, (cont'd)

CG Range

Longitudinal CG	GW	Lateral CG
	Minimum 920 pounds to	
95.5	1275	+1.0R - 0.8L
96.5	1370	
97.0		- 2.2L
98.0		+ 2.6R -2.2L
100.0	1370	
102.0	1175	+1.2R - 0.5L

Straight Line Variation Between Points Shown. See Figure 2.

If empty weight CG arm (moment/empty weight) is greater than 104.8, fixed ballast must be installed in the helicopter's nose at F.S. 38.0 to allow a minimum solo pilot weight of 130 pounds. (Minimum pilot weight with auxiliary fuel tank is 135 pounds.)

Maximum Gross Weight

1370 lbs.

No. Seats

2 (Pilot Location STA 78.0)

Minimum Weight

920 lbs.

Maximum Baggage

50 pounds of baggage and installed equipment in either baggage compartment, except combined seat load plus baggage and equipment not to exceed 240 pounds.

Fuel Capacity

Tank	Tanks Without Bladders		Tanks With Bladders		Location (STA)
	Capacity (gal.)	Usable (gal.)	Capacity (gal.)	Usable (gal.)	
Main	19.8	19.2	18.3	16.9	108.6
Auxiliary	10.9	10.5	9.7	9.4	103.8

Oil Capacity

Engine oil, 1.5 Gals. at STA 104.8;
Transmission oil, 0.3 Gal. at STA 100.

Rotor Blade and Control Movements

For rigging information refer to R22 Maintenance Manual.

Serial Nos. Eligible

0301, 0350, 0351, 0357 thru 0500, excluding 0364

III. Model R22 BETA Helicopter (Normal Category), Approved August 12, 1985

The R22 BETA Helicopter includes a 131 hp. takeoff rating. A larger oil cooler and associated installation changes were made to permit the 131 hp. takeoff rating with the O-320 engine.

Engine

Lycoming O-320-B2C or O-360-J2A (See NOTE 11)

Fuel

91/96 UL minimum grade aviation gasoline
100 LL minimum grade aviation gasoline
100/130 minimum grade aviation gasoline

Engine Limits for all operations

Maximum continuous (124 hp.) 2652 rpm (104%)
Takeoff (5 minutes) (131 hp.) 2652 rpm (104%)
See RFM for maximum manifold pressure corresponding to hp. rating and ambient conditions. See RFM for altitude limitations.

Rotor Limits

Power Off (Rotor Tach) for O-320-B2C and O-360-J2A	Power On (Rotor Tach) for O-320-B2C	Power On (Rotor Tach) for O-360-J2A
Maximum (110%) 561 rpm	(104%) 530 rpm	(104%) 530 rpm
Minimum (90%) 459 rpm	(97%) 495 rpm	(101%) 515 rpm

III. Model R22 BETA Helicopter (Normal Category), Approved August 12, 1985, (cont'd)

Airspeed Limits (CAS) V_{ne} (never exceed) Power On and Power Off 98 KCAS sea level to 3,000 feet density altitude, decreasing to 83 KCAS at 8,000 feet density altitude, decreasing to 56 KCAS at 14,000 feet density altitude. Straight line variation between points.

Altitude Limits Density Altitude Limit - 14,000 feet

CG Range

Longitudinal CG	GW	Lateral CG
	Minimum 920 pounds to	
95.5	1275	+1.0R - 0.8L
96.5	1370	
97.0		- 2.2L
98.0		+2.6R - 2.2L
100.0	1370	
102.0	1175	+1.2R - 0.5L

Straight Line Variation Between Points Shown. See Figure 2.
 If empty weight CG arm (moment/empty weight) is greater than 104.8, fixed ballast must be installed in the helicopter's nose at F.S. 38.0 to allow a minimum solo pilot weight of 130 pounds. (Minimum pilot weight with auxiliary fuel tank is 135 pounds.)

Maximum Gross Weight 1370 lbs.

No. Seats 2 (Pilot Location STA 78.0)

Minimum Weight 920 lbs.

Maximum Baggage 50 pounds of baggage and installed equipment in either baggage compartment, except combined seat load plus baggage and equipment not to exceed 240 pounds.

Fuel Capacity

Tank	Tanks Without Bladders		Tanks With Bladders		Location (STA)
	Capacity (gal.)	Usable (gal.)	Capacity (gal.)	Usable (gal.)	
Main	19.8	19.2	18.3	16.9	108.6
Auxiliary	10.9	10.5	9.7	9.4	103.8

Oil Capacity Engine oil, 1.5 Gals. at STA 104.8;
 Transmission oil, 0.3 Gal. at STA 100.

Rotor Blade and Control Movements For rigging information refer to R22 Maintenance Manual.

Serial Nos. Eligible 0501 and subsequent

IV. Model R22 MARINER Helicopter (Normal Category), Approved September 12, 1985

The R22 MARINER helicopter includes two inflatable floats, additional corrosion protection, 131 hp. takeoff rating, tailcone with nose-up horizontal stabilizer mounting angle and float stabilizer in place of the tail skid. The helicopter can be used with or without floats. (See NOTE 9)

Engine Lycoming O-320-B2C or O-360-J2A (See NOTE 11)

Fuel 91/96 UL minimum grade aviation gasoline
 100 LL minimum grade aviation gasoline
 100/130 minimum grade aviation gasoline

Engine Limits for all operations Maximum continuous (124 hp.) 2652 rpm (104%)
 Takeoff (5 minutes) (131 hp.) 2652 rpm (104%)
 See RFM for maximum manifold pressure corresponding to hp. rating and ambient conditions. See RFM for altitude limitations.

IV. Model R22 MARINER Helicopter (Normal Category), Approved September 12, 1985, (cont'd)

Rotor Speed Limits	Power Off (Rotor Tach) for O-320-B2C and O-360-J2A Maximum (110%) 561 rpm Minimum (90%) 459 rpm	Power On (Rotor Tach) for O-320-B2C (104%) 530 rpm (97%) 495 rpm	Power On (Rotor Tach) for O-360-J2A (104%) 530 rpm (101%) 515 rpm
--------------------	----------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------	----------------------------------------------------------------------------

Airspeed Limits (CAS) With Floats Installed
 V_{ne} (never exceed) Power On 91 KCAS sea level to 3,000 feet density altitude, decreasing to 77 KCAS at 7,500 feet density altitude, decreasing to 50 KCAS at 14,000 feet density altitude. Straight line variation between points.

V_{ne} (never exceed) Power Off 77 KCAS sea level to 7,500 feet density altitude, decreasing to 50 KCAS at 14,000 feet density altitude. Straight line variation between points.

Without Floats Installed

V_{ne} (never exceed) Power On and Power Off 98 KCAS sea level to 3,000 feet density altitude, decreasing to 83 KCAS at 8,000 feet density altitude, decreasing to 56 KCAS at 14,000 feet density altitude. Straight line variation between points.

Altitude Limits Density Altitude Limit - 14,000 feet

CG Range

With Floats Installed:

Longitudinal CG	GW	Lateral CG
	Minimum 920 pounds to	
95.5	1275	+1.0R - 0.8L
96.5	1370	
97.0		- 2.2L
98.0		+2.6R - 2.2L
100.0	1370	
101.0	1207	+1.3R - 1.0L

Without Floats Installed:

Longitudinal CG	GW	Lateral CG
	Minimum 920 pounds to	
95.5	1275	+1.0R - 0.8L
96.5	1370	
97.0		- 2.2L
98.0		+2.6R - 2.2L
100.0	1370	
101.5	1125	+1.1R - 0.8L

Straight Line Variation Between Points Shown. See Figure 3.

Maximum Gross Weight 1370 pounds

No. Seats 2 (Pilot Location STA 78.0)

Minimum Weight 920 pounds

Maximum Baggage 50 pounds of baggage and installed equipment in either baggage compartment, except combined seat load, plus baggage and equipment not to exceed 240 pounds.

Fuel Capacity

Tank	Tanks Without Bladders		Tanks With Bladders		Location (STA)
	Capacity (gal.)	Usable (gal.)	Capacity (gal.)	Usable (gal.)	
Main	19.8	19.2	18.3	16.9	108.6
Auxiliary	10.9	10.5	9.7	9.4	103.8

IV. Model R22 MARINER Helicopter (Normal Category), Approved September 12, 1985, (cont'd)

Oil Capacity	Engine oil, 1.5 Gals. at STA 104.8; Transmission oil, 0.3 Gal. at STA 100.
Rotor Blade and Control Movements	For rigging information refer to R22 Maintenance Manual.
Serial No. Eligible	0364, 0501 and subsequent (Suffix "M" added to all MARINERs.)
<u>DATA PERTINENT TO ALL MODELS</u>	
Datum	100 inches forward of main rotor centerline.
Leveling Means	Refer to the Weight and Balance Section of the R22 Rotorcraft Flight Manual.
Certification Basis	14 CFR Part 27 dated February 1, 1965, including Amendments 27-1 through 27-10. § 27.1559 of Amendment 27-21 is an option for all S/Ns. National Environmental Act of 1969 Noise Control Act of 1972 <u>Equivalent Safety Finding:</u> Number TD10352LA-R/S-1 14 CFR Part 27.1401(d), Anticollision Light System
Production Basis	Production Certificate No. 424WE, dated March 6, 1981
Equipment	The basic required equipment as prescribed in the applicable airworthiness regulations (See Certification Basis) must be installed in the helicopter for certification. In addition, the following FAA-approved Rotorcraft Flight Manual is required: <u>R22</u> R22 Rotorcraft Flight Manual dated March 16, 1979, or later revision. <u>R22 ALPHA</u> R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through October 12, 1983 or later (see NOTE 8). <u>R22 BETA with O-320-B2C</u> R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through August 7, 1985 or later (see NOTE 8). <u>R22 BETA with O-360-J2A</u> R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through August 7, 1985 or later. For R22 Rotorcraft Flight Manual with revisions prior to October 13, 2000, Flight Manual Supplement 7 dated January 31, 1996, or later revision, is required (see NOTE 8). <u>R22 MARINER with O-320-B2C</u> R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through August 7, 1985 or later, and Flight Manual Supplement 4 dated September 9, 1985, or later revision. <u>R22 MARINER with O-360-J2A</u> R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through August 7, 1985 or later, and Flight Manual Supplement 4 dated September 9, 1985, with revisions through October 13, 2000 or later. For R22 Rotorcraft Flight Manual with revisions prior to October 13, 2000, Flight Manual Supplement 8 dated January 31, 1996, or later revision, is required in place of Flight Manual Supplement 4.

ALL MODELS

If fuel tanks with bladders are installed: R22 Rotorcraft Flight Manual dated March 16, 1979, with revisions through February 15, 2013 or later. R22 Mariners also require Flight Manual Supplement 4 as noted above. Also see Note 8.

GENERAL NOTES

NOTE 1. Current weight and balance report, including list of equipment included in certificated empty weight, and loading instructions, when necessary, must be provided for each helicopter at the time of original certification and at all times thereafter (except in the case of operators having an approved weight control system).

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

Pilot Location STA 79.0 for helicopter S/Ns 0002 thru 0255 and STA 78.0 for helicopter S/Ns 0256 and subsequent and helicopters in which Robinson P/N seats A466-1 and A467-1 have been replaced by Robinson P/N seats A932-1 and A928-1.

NOTE 2. One of the following placards must be installed in clear view of the pilot:
"THE MARKINGS AND PLACARDS INSTALLED ON THIS HELICOPTER CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS ROTORCRAFT. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS ROTORCRAFT ARE CONTAINED IN THE ROTORCRAFT FLIGHT MANUAL."

Or: "THIS ROTORCRAFT APPROVED FOR DAY AND NIGHT VFR OPERATIONS"

For the R22 MARINER:

"THIS ROTORCRAFT APPROVED FOR DAY AND NIGHT VFR OPERATIONS WITHOUT FLOATS INSTALLED OR DAY VFR OPERATIONS ONLY WITH FLOATS INSTALLED."

For additional placards, see R22 Rotorcraft Flight Manual.

NOTE 3. Retirement time of critical components is contained in the FAA approved "AIRWORTHINESS LIMITATIONS" section of the Robinson R22 Maintenance Manual. The values of retirement or service life and inspection intervals cannot be changed without FAA Engineering approval.

NOTE 4. Deleted as of April 11, 1988.

NOTE 5. Lycoming O-320-A2C, with Retard Magneto Starting System, eligible on S/Ns 0002 thru 0300, 0302 thru 0349, and 0352 thru 0356 helicopters.

NOTE 6. Lycoming O-320-B2C installed on S/Ns 0175 and 0200 thru 2570 in production. It may be installed in prior S/N helicopters if the following parts are changed; Robinson P/Ns B193-2 (Window Plate - Instrument Cluster), A145-3 (Engine), A600-2 (Manifold Pressure Gauge), and A654-40 & -41 (Decals).

NOTE 7. Deleted as of April 25, 2001.

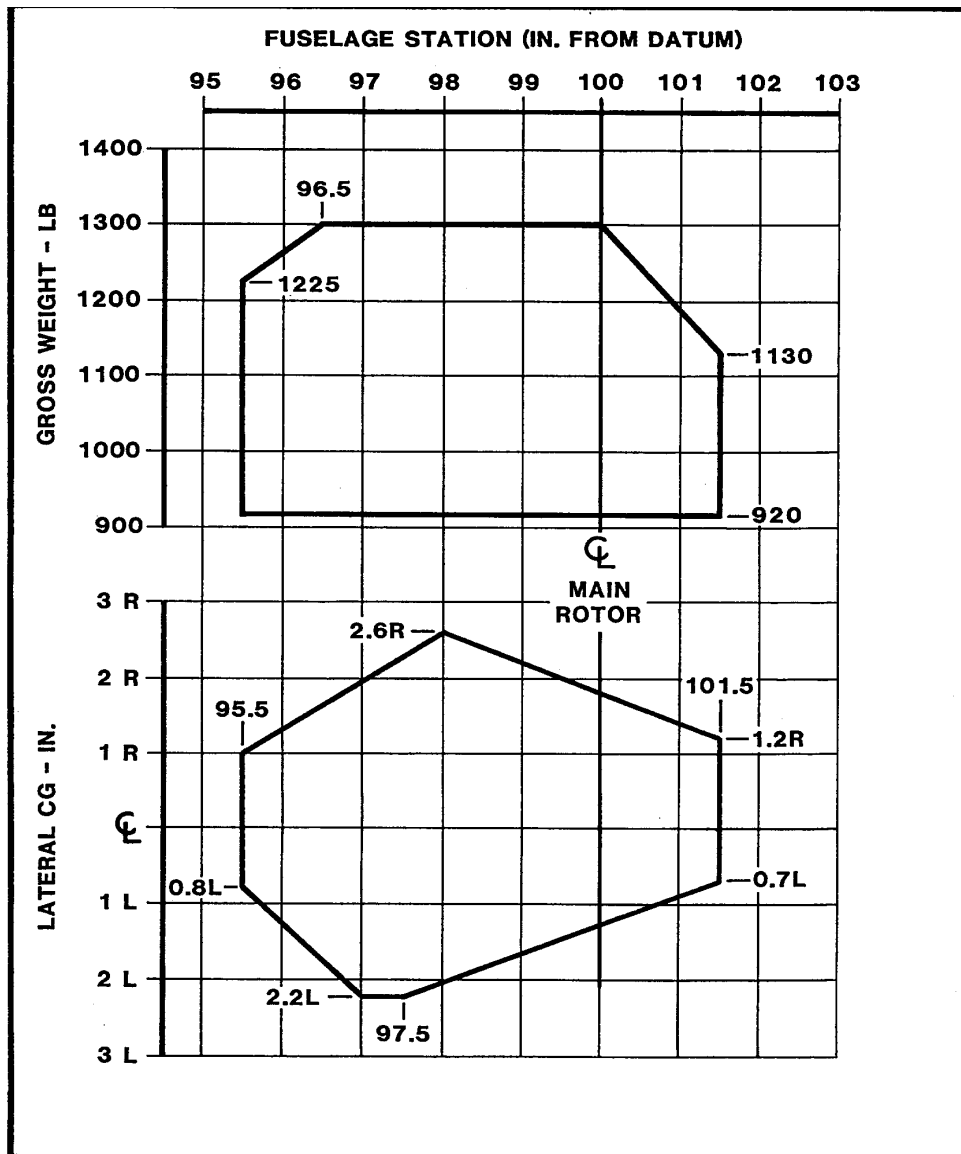
NOTE 8. The R22 "Police Helicopter" configuration requires Flight Manual Supplement 3, dated March 27, 1984 or later.

NOTE 9. The R22 MARINER with floats installed is limited to daylight VFR operation only.

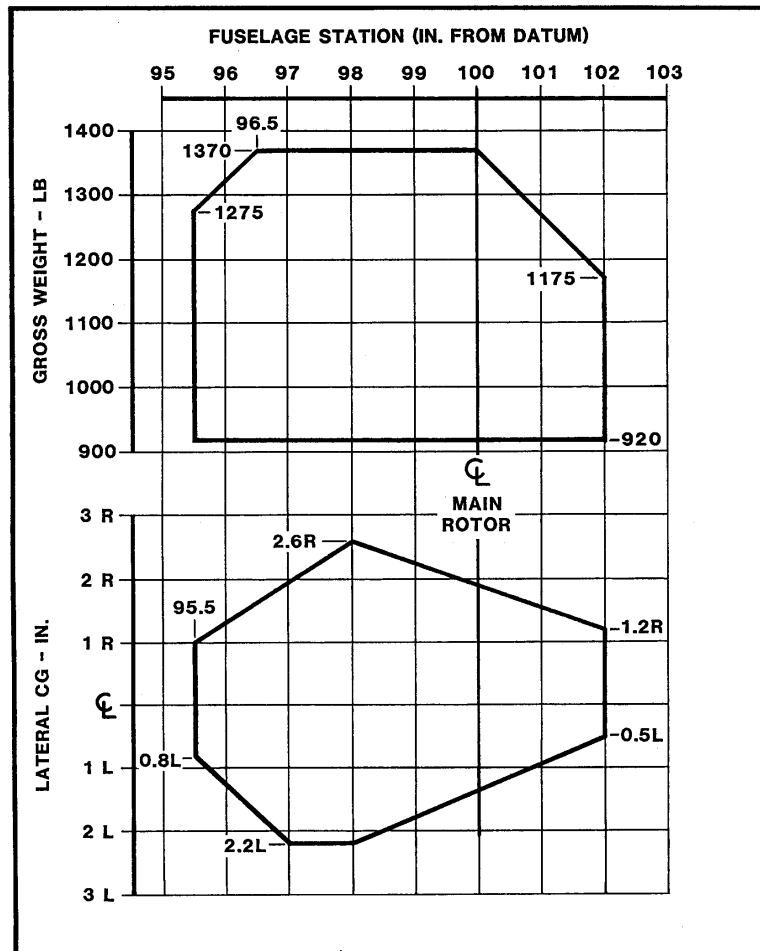
NOTE 10. R22 ALPHA S/N 0364 was converted to an R22 MARINER by the manufacturer. The original R22 ALPHA dataplate was removed and replaced with an R22 MARINER data plate S/N 0364M.

NOTE 11. Lycoming O-360-J2A installed on S/N 2571 and subsequent in production. Retrofit installation of the O-360-J2A engines may only be accomplished at the Robinson Helicopter Company.

NOTE 12. 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 through 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 (major repairs or alterations) by means of a FAA Form 337 (field approval) that require ICA's must have those ICA's reviewed by the field approving FSDO.



R22
FIGURE 1

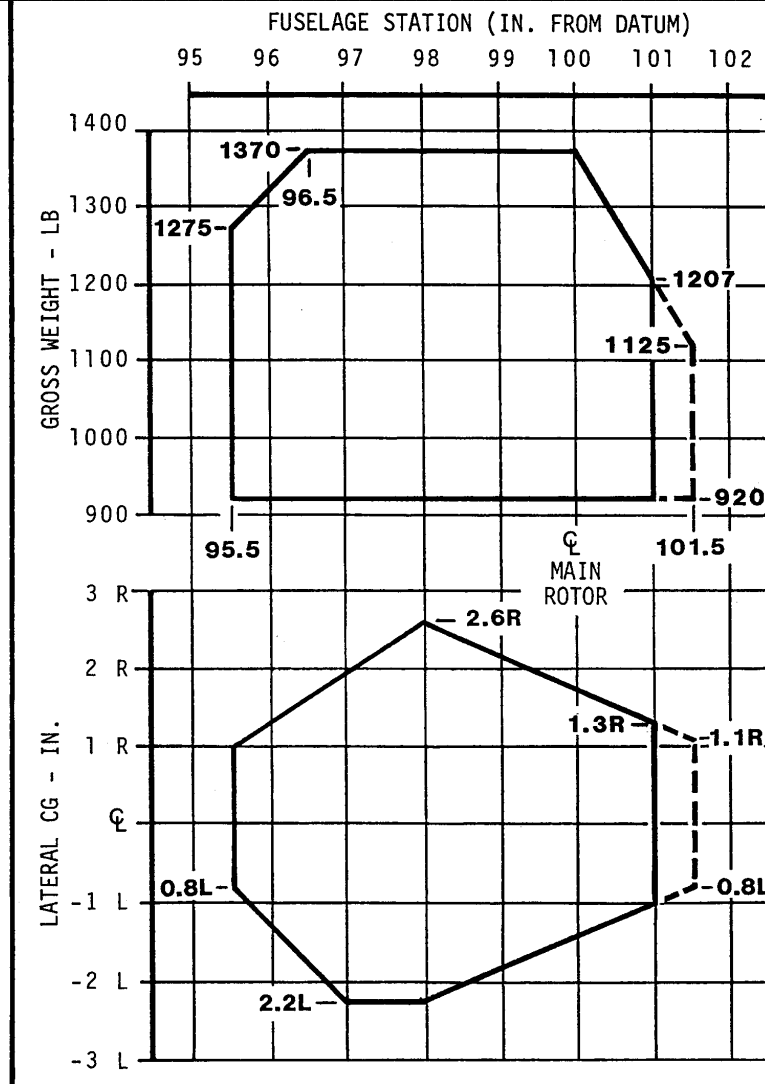


R22 ALPHA AND BETA
FIGURE 2

H10WE

Page 10 of 10

WITH FLOATS _____
WITHOUT FLOATS _____



R22 MARINER
FIGURE 3

.....END.....

3.300 Airworthiness Limitations

The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403, unless an alternative program has been FAA approved.

Time in service may be tracked based on engine run time or based on flight (collective up) time. Either method may be used, however numerical values for service lives depend on the tracking method used.

R22 Fatigue Life-Limited Parts

Use the following lives if time is tracked based on engine run time as recorded by an oil-pressure-activated hourmeter:

<u>Part Number</u>	<u>Description</u>	<u>Maximum Service Life</u>
A016-2 (Retired by AD 2004-19-09) ..	Main Rotor Blade	2200 Hours or 10 years ¹
A016-4 and -6	Main Rotor Blade	2200 Hours or 12 years ¹
A029-1 and -2	Tail Rotor Blade	2200 Hours or 12 years ¹
A146-1	Pinion, Main Rotor Gearbox	2200 Hours (O-360 Engine)
A158-3	Main Rotor Spindle	2200 Hours
B545-1	Gear Set, Tail Rotor Gearbox	2200 Hours
NAS630-80 (or MS21250-10080) ...	Coning Hinge Bolt	2200 Hours
NAS1351-4-20 (or A722-1 or -2)	Pitch Horn Screws	2200 Hours
NAS6604 (or NAS1304)	Tail Rotor Blade-to-Hub Attach Bolt ...	2200 Hours
A158-1	Main Rotor Spindle	2415 Hours ²
A020-2	Upper Frame, Rev R & Prior	4200 Hours
A020-2 and -90	Upper Frame, Rev S & Subsequent	4400 Hours
A023-1, -20, -22, and -23	Tailcone Assembly	4400 Hours
A047-1 and -6	Upper Frame	4400 Hours
A154-1	Main Rotor Hub	4400 Hours
B370-1	Main Rotor Hub	4400 Hours
A020-84	Lower R.H. Frame	5110 Hours
A046-2	Lower R.H. Frame	5110 Hours
A062-2	Tail Rotor Hub	6000 Hours
A030-1	Tail Rotor Hub Assembly	6260 Hours

¹ Whichever limit occurs first. Calendar time starts on date of original RHC-issued Airworthiness Approval.

² Subject to AD 88-26-01 R2 compliance.

3.300 Airworthiness Limitations (cont'd)

R22 Fatigue Life-Limited Parts (cont'd)

Use the following lives if time is tracked based on flight (collective up) time as recorded by a collective-activated hourmeter:

<u>Part Number</u>	<u>Description</u>	<u>Maximum Service Life</u>
A016-2 (Retired by AD 2004-19-09) ..	Main Rotor Blade	1964 Hours or 10 years ¹
A016-4	Main Rotor Blade	1964 Hours or 12 years ¹
NAS630-80 (or MS21250-10080) ...	Coning Hinge Bolt	1964 Hours
NAS1351-4-20 (or A722-1 or -2) ...	Pitch Horn Screws	1964 Hours
A158-1	Main Rotor Spindle	2156 Hours ²
A016-6	Main Rotor Blade	2200 Hours or 12 years ¹
A029-1 and -2	Tail Rotor Blade	2200 Hours or 12 years ¹
A146-1	Pinion, Main Rotor Gearbox	2200 Hours
A158-3	Main Rotor Spindle	2200 Hours
A188-2	Sprag Clutch Assembly	2200 Hours
A647-1	Bearing, Main Rotor Shaft	2200 Hours or 12 years ¹
A647-6	Bearing, Tail Rotor Pitch Control	2200 Hours or 12 years ¹
A647-8	Bearing, Damper Assembly	2200 Hours or 12 years ¹
B545-1	Gear Set, Tail Rotor Gearbox	2200 Hours
NAS6604 (or NAS1304)	Tail Rotor Blade-to-Hub Attach Bolt ...	2200 Hours
A020-2	Upper Frame, Rev R & Prior	3750 Hours
A154-1	Main Rotor Hub	3928 Hours
A020-2 and -90	Upper Frame, Rev S & Subsequent	4400 Hours
A020-84	Lower R.H. Frame	4400 Hours
A023-1, -20, -22, and -23	Tailcone Assembly	4400 Hours
A046-2	Lower R.H. Frame	4400 Hours
A047-1 and -6	Upper Frame	4400 Hours
A062-2	Tail Rotor Hub	4400 Hours
B370-1	Main Rotor Hub	4400 Hours
A030-1	Tail Rotor Hub Assembly	5589 Hours

¹ Whichever limit occurs first. Calendar time starts on date of original RHC-issued Airworthiness Approval.

² Subject to AD 88-26-01 R2 compliance.

Approved By:  Date: 3/10/16
 Manager, Federal Aviation Administration
 Los Angeles Aircraft Certification Office

FAA Approved: This and the previous page constitute the Airworthiness Limitations Section in its entirety, are considered segregated from the rest of the document, and set forth the FAA-approved mandatory replacement times for fatigue life-limited parts.