Retirement lives – General

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Table 1 References

Data module	Title
None	

Description

1 Introduction

The parts listed in the Table 2 must be mandatorily retired from service when the indicated retirement life is reached. This also applies to all those non-serialized standard parts which connect the identified assembly / component.

The Airworthiness Limitations, specified for any part number quoted in the Table 2 apply also to all successive part numbers having the same first ten digits and different last two digits, unless otherwise specified.

All retirement lives are expressed in Flying Hours (FH), unless otherwise specified. Flying hours are defined as those hours accumulated from take-off to landing.

The retirement lives of some parts are expressed in “landings” because their life is dependent upon the rotor start-stop cycles and the helicopter ground-air-ground cycles.

If not differently specified, the retirement lives are based on the following assumptions:

- 600 landings in 100 flying hours, including 400 rotor start-stop cycles.
- For external hoist operations: 350 lifts in 100 flying hours.
- For external load operations: 400 external load cycles in 100 flying hours.

In the event that the actual usage exceeds these assumptions, the Operator shall contact the Manufacturer.

If parts with the same part number have been interchanged between different AW189 helicopters with and without kit P/N 8G0000F00511 installed, the retirement life of the part must be restricted to the lowest value between the previously mentioned helicopters on which the part has been installed.

If parts with the same part number have been interchanged between different AW189 helicopters and different AW helicopter models, the retirement life of the part must be restricted to the lowest value between the previously mentioned helicopters on which the part has been installed.

Example: if a part installed on an AW189 helicopter with Safran Aneto-1K engines has a retirement life of 10000 FH (as per the Chapter 04 applicable to the specific helicopter serial number) and it is moved to an AW189 helicopter with GE CT7-2E1 engines whose Chapter 04 prescribes a retirement life of 20000 FH, then the retirement life of the part remains 10000 FH.

2 Affected parts

Refer to Table 2 .

Table 2 Retirements lives - List of affected parts

Ref	Part	Part number	Retirement life
RL001	Main landing gear leg assembly LH	8G3210V00331	160000 landings
RL002	Main landing gear leg assembly RH	8G3210V00431	160000 landings
RL003	Main landing gear retraction actuator assembly	8G3210V00831	160000 landings
RL004	Nose landing gear shock strut assembly (Note 4)	8G3220V00131	8000 landings
RL004A	Nose landing gear shock strut assembly	8G3220V00132	80000 landings
RL005	Nose landing gear retraction actuator assembly	8G3220V00331	160000 landings
RL006	Main cabin assembly (without retromodification P/N 8G5330P01811 installed)	8G5330A00131	15200 FH or 24300 landings whichever comes first (Note 1)
RL006A	Main cabin assembly	8G5330A37331	12200 FH or 17800 landings whichever comes first
RL006B	Main cabin assembly (with retromodification P/N 8G5330P01811 installed)	8G5330A00131	6400 FH or 10300 landings whichever comes first
RL007	X8700 joint - Bolt	8G5310A03651	102900 landings
RL008	Tail assembly	8G5350A00131	57300 landings
RL009	Deleted		
RL010	Rod End (Fin End)	4F5510A00631	5000
RL011	Rod Sleeve	4F5510A00851	5000
RL012	Rod End (Tailplane End)	4F5510A00752	5000
RL013	Deleted		
RL014	Tailplane mounting rod	8G5510A06031	5000
RL015	Main rotor blade assembly	4F6210A00132	24000 landings
RL015A	Main rotor blade assembly	8G6210A00131	24000 landings
RL015B	Main rotor blade assembly	8G6210A01931	120000 landings
RL015C	Main rotor blade assembly	8G6210A00132	120000 landings
RL016	Main rotor blade bolt	4F6220A00251	99900 landings
RL017	Main rotor hub assembly	4F6220A00331	26000 FH or 42950 landings whichever comes first
RL018	Deleted		
RL019	Main rotor pitch control lever assembly	4F6220A00732	19570 FH or 99900 landings whichever comes first
RL020	Bush floating wedge, pitch control lever (outer)	4F6220A02652	5315
RL021	Bush floating wedge, pitch control lever (inner)	8G6220A02651	5315
RL022	Main rotor elastomeric bearing	4F6220V00153	91900 landings
RL023	Rotating swashplate assembly (without kit P/N 8G0000F00511 installed)	4F6230A00333	20000
RL023A	Rotating swashplate assembly (with kit P/N 8G0000F00511 installed)	4F6230A00333	18980
RL024	Deleted		
RL025	Deleted		
RL026	Deleted		
RL027	Deleted		
RL028	Case, top assembly	8G6323A00331	12000 FH or 46900 landings whichever comes first
RL029	Main rotor shaft	8G6323A00451	11170
RL029A	Main rotor shaft	8G6323A00751	40000

Ref	Part	Part number	Retirement life
RL030	Case, main assembly	8G6322A00132	10400
RL030A	Case, main assembly	8G6322A01031	10400
RL031	MGB upper fitting	4F6330A00631	1000
RL031A	MGB upper fitting	8G6330A00831	10400 FH or 34100 landings whichever comes first
RL032	Antitorque beam assembly	4F6330A00531	17900
RL033	Deleted		
RL034	Deleted		
RL035	Aft rod assembly	8G6330A00731	13120
RL036	Main gearbox bolt fixing rod	4F6330L00751	26800
RL037	Deleted		
RL038	Deleted		
RL039	Tail rotor blade assembly	8G6410A00133	11700 FH or 6000 landings whichever comes first
RL039A	Tail rotor blade assembly	8G6410A00134	11700 FH or 6000 landings whichever comes first
RL040	Deleted		
RL041	Floating bush (lower)	8G6430A00151	11700
RL042	Tail rotor blade damper attachment assembly	4F6410A05931	8000
RL043	Floating bush damper (blade)	4F6420A02851	8000
RL044	Tail rotor bolt	4F6420A00251	13700
RL045	Tail rotor hub assembly	4F6420A00331	9200
RL045A	Deleted		
RL046	Tail rotor hub damper bracket	8G6420A00831	120000 landings
RL047	Deleted		
RL048	Floating bush damper (hub)	4F6420A02751	11700
RL049	Tail rotor elastomeric spherical bearing (Lord)	4F6420V00451	18830 landings
RL050	Tail rotor fluid-elastic damper (Lord)	4F6420V00254	12600 FH or 50800 landings whichever comes first
RL051	Slider assembly	4F6430A00132	13980
RL052	Spider assembly	4F6430A00231	21200
RL053	Bearing flange (without kit P/N 8G0000F00511 installed)	4F6430A01552	3836
RL053A	Bearing flange (with kit P/N 8G0000F00511 installed)	4F6430A01552	3760
RL054	Tail rotor upper half scissor assembly	4F6430A00331	14384
RL055	Tail rotor scissors sleeve	8G6430A00651	10736
RL056	Deleted		
RL057	Adapter, inner TDS	4F6510A03551	32376
RL058	Tail rotor shaft (without kit P/N 8G0000F00511 installed)	4F6522A00651	14590
RL058A	Tail rotor shaft (with kit P/N 8G0000F00511 installed)	4F6522A00651	13000
RL059	Tail gearbox output housing (without kit P/N 8G0000F00511 installed)	4F6522A00431	1345
RL059B	Tail gearbox output housing (with kit P/N 8G0000F00511 installed)	4F6522A00431	1090

Ref	Part	Part number	Retirement life
RL059A	Tail gearbox output housing (without kit P/N 8G0000F00511 installed)	8G6522A00331	16575
RL059C	Tail gearbox output housing (with kit P/N 8G0000F00511 installed)	8G6522A00331	15540
RL060	Tail gearbox centre housing	4F6522A00232	15000
RL061	Intermediate gearbox centre assembly	4F6521A00232	21894
RL062	Tail rotor actuator (Note 4)	6F6730V00331	5550
RL063	Tail rotor driveline flexible coupling	4F6510V00151	26700
RL064	Main landing gear fitting	4F5335A38153	31000 landings
RL065	Rescue hoist cable	42325-298	4 years or 1500 hoist lifts whichever comes first (Note 7)
RL066	Rescue hoist fuselage mounting plate assembly	8G2591A01731	68000 hoist lifts
RL067	Dual hoist structural assembly	8G2591A10431	34000 hoist lifts
RL068	End cap shaft bolts	4F6510A04751	22700
RL069	Stationary swashplate assembly	MK6230A00131	13500
RL070	Planet gear	4F6320L00352	38700
RL070A	Planet gear	8G6323L00251	38700
RL071	Nose landing gear retraction actuator finger collet (Note 2)	323AW02090-101	80000 landings
RL072	Tail gearbox fitting	4F5350A04152	14600 FH or 57300 landings whichever comes first
RL073	Main rotor damper body end assembly (Note 3)	M006-01H046-041	1200
RL073A	Main rotor damper body end assembly (Note 6)	M006-01H065-045	1200
RL074	Upper rod end	4F6230V00752	18500
RL074A	Upper Rod End	8G6230V00151	18500
RL075	Lower rod end and tube assembly	4F6230A01034	18500
RL076	Tail rotor actuator control rod (Note 5)	165606-1	5550
RL077	Fitting Assy Mooring fwd rhs	8G1000A04031	68000 hoist lifts

Note

1 If either STA5700 MGB main support reinforcement P/N 8G5333P05512 or upper joint P/N 8G5333P05711 retromodifications are not applied the applicable life limit is restricted permanently to 4000 FH or 6700 landings whichever comes first.

2 Vendor part installed inside the NLG retraction actuator assembly P/N 8G3220V00331. For its replacement the retraction actuator assembly P/N 8G3220V00331 shall be sent to Liebherr-Aerospace Lindenberg GmbH (LLI).

3 The component is part of the MR Damper Assy P/N 8G6220V00151.

4 Not applicable to components with part number different from the one indicated.

5 Vendor part installed inside the Tail rotor actuator P/N 6F6730V00332. For its replacement the Tail rotor actuator P/N 6F6730V00332 shall be sent to UTC Aerospace Systems.

6 The component is part of the MR Damper Assy P/N 8G6220V00251

7 The retirement life is intended since the initial installation date.

2.1 Operation above 8300 kg (MTOW)

The penalty factors P^{FH} and P^{LAND} must be mandatorily applied to every flight (from take off to landing) in case the total take off weight exceeds 8300 kg.

For each flight in such conditions, the factors P^{FH} and P^{LAND} must be added to flight hours and landings computation:

- The penalty to be added to flight hours flown during the flight (from take off to landing) is P^{FH}
- The penalty to be added to landings is P^{LAND}.

Table 3 Operation above 8300 kg - Life penalty factor

Ref	Part	Part number	p^{FH}	p^{LAND}
RL008	Deleted			
RL028	Case, top assembly	8G6323A00331	1 FH	1 Landing
RL029	Deleted			
RL029A	Deleted			
RL035	Aft rod assembly	8G6330A00731	0.5 FH	N/A
RL057	Adapter, inner TDS	4F6510A03551	2 FH	N/A
RL058	Tail rotor shaft (without kit P/N 8G0000F00511 installed)	4F6522A00651	0.5 FH	N/A
RL058A	Tail rotor shaft (with kit P/N 8G0000F00511 installed)	4F6522A00651	0.5 FH	N/A
RL061	Intermediate gearbox centre assembly	4F6521A00232	1.5 FH	N/A

Note:

E.g.: **Case, top assembly** : Total daily flight hours = 10 FH. Total daily landings = 6

Daily take-off above 8300 Kg = 2

Total Accumulated FH = 10 + (Daily take-off above 8300 kg x P^{FH}) = 10 + (2 x 1) = 12 FH

Total Accumulated landings = 6 + (Daily take-off above 8300 kg x P^{LAND}) = 6 + (2 x 1) = 8 Landings.

3 External hoist operation

For the parts listed in Table 4 a life penalty must be mandatorily applied whenever an external hoist lift is performed.

The external hoist lift is defined as an unreeling and recovery of the cable with a load attached to the hook, independent of the length of the cable that is deployed/recovered. An unreeling/recovery of the cable with no load on the hook is not considered to be a lift. Any operation where a load is applied for half the operation (i.e. unreeling or recovery) must be considered as one lift.

Increase the flying hour by the specified value for each external hoist lift. The penalty is applicable only to flying hours.

Table 4 External hoist lift - Life penalty factor

Ref	Part	Part number	$p^{FH\ HOIST}$
RL006	Main cabin assembly (without retromodification P/N 8G5330P01811 installed)	8G5330A00131	1.0 (Note 1)
RL006A	Deleted		
RL008	Deleted		
RL029	Main rotor shaft	8G6323A00451	0.5
RL029A	Main rotor shaft	8G6323A00751	1.0
RL032	Antitorque beam assembly	4F6330A00531	0.5
RL035	Deleted		
RL039	Deleted		
RL039A	Deleted		
RL050	Deleted		
RL051	Slider assembly	4F6430A00132	0.5
RL057	Adapter, inner TDS	4F6510A03551	1.0
RL058	Tail rotor shaft (without kit P/N 8G0000F00511 installed)	4F6522A00651	2.0
RL058A	Tail rotor shaft (with kit P/N 8G0000F00511 installed)	4F6522A00651	2.0

Ref	Part	Part number	$p^{FH\ HOIST}$
RL059	Tail gearbox output housing (without kit P/N 8G0000F00511 installed)	4F6522A00431	0.5
RL059B	Tail gearbox output housing (with kit P/N 8G0000F00511 installed)	4F6522A00431	0.5
RL059A	Tail gearbox output housing (without kit P/N 8G0000F00511 installed)	8G6522A00331	0.5
RL059C	Tail gearbox output housing (with kit P/N 8G0000F00511 installed)	8G6522A00331	0.5
RL060	Tail gearbox centre housing	4F6522A00232	0.5
RL061	Intermediate gearbox centre assembly	4F6521A00232	1.0

Note

E.g.: **Main Rotor Shaft P/N 8G6323A00751**: Total daily flight hours = 4 FH. Total daily rescue hoist lifts = 3.

Daily take-off above 8300 kg = 0

Total accumulated FH = 4 + ($P^{FH\ HOIST}$ x hoist lifts) = 4 + (1 x 3) = 7 FH

E.g.: **Tail Rotor Shaft**: Total daily flight hours = 3 FH. Total daily rescue hoist lifts = 4.

Daily take-off above 8300 kg = 1

Total accumulated FH = 3 + ($P^{FH\ HOIST}$ x hoist lifts) + (Daily take-off above 8300 kg x P^{FH}) = 3 + (2 x 4) + (1 x 0.5) = 11.5 FH.

1 If both STA5700 MGB main support reinforcement P/N 8G5333P05512 and upper joint P/N 8G5333P05711 retromodifications are applied the penalty per hoist lift is not applicable.

4 Optional equipment life penalty factors

4.1 Active Vibration Control System (AVCS) kit

For the parts listed in Table 5, a life penalty must be mandatorily applied whenever the AVCS kit reported into “Optional equipment” column, is installed on the helicopter.

Increase the flying hours by the specified value reported in Table 5:

- The penalty to be multiplied to flight hours flown during the flight (from take off to landing) is $P^{FH.}$

Prerequisites for AVCS kit P/N 8G1830F00111, 8G1830F00211 and 8G1830F00311: MGB upper fitting P/N 8G6330A00831, cruciform fitting STA 5700 retro-modification P/N 8G5333P05012 or 8G5333P05512 installed on the helicopter.

Table 5 AVCS kit - Life penalty factor

Ref	Part	Part number	p^{FH}	Optional equipment
RL006	Main cabin assembly (without retromodification P/N 8G5330P01811 installed)	8G5330A00131	1.5	8G1830F00111 8G1830F00211
RL030	Deleted			
RL030A	Deleted			
RL035	Deleted			

Note:

E.g.: **Main cabin assembly** Total daily flight hours = 5.

Total accumulated FH = total daily flight hours x PFH = 5x1.5 = 7.5 FH.

4.2 Deleted

5 External load operation

For the following parts in Table 6 a life penalty must be mandatorily applied whenever an external load cycle is performed.

An external load cycle is every external load lift using the cargo hook.

Increase the flying hours by the specified value for each external load cycle.

Table 6 External load operation - Life penalty factor

Ref	Part	Part number	p^{FH}

Ref	Part	Part number	P^{FH}
RL050	Deleted		
RL051	Slider assembly	4F6430A00132	1.5 FH
RL057	Adapter, inner TDS	4F6510A03551	1 FH
RL058	Tail rotor shaft (without kit P/N 8G0000F00511 installed)	4F6522A00651	1 FH
RL058A	Tail rotor shaft (with kit P/N 8G0000F00511 installed)	4F6522A00651	1 FH
RL059A	Tail gearbox output housing (without kit P/N 8G0000F00511 installed)	8G6522A00331	0.5 FH
RL059C	Tail gearbox output housing (with kit P/N 8G0000F00511 installed)	8G6522A00331	0.5 FH
RL061	Intermediate gearbox centre assembly	4F6521A00232	0.5 FH

E.g.: **Slider assembly**: Total daily flight hours = 4 FH. Total daily rescue hoist lifts = 3. Total daily external load cycles = 2.

Total accumulated FH = Total daily flight hours + Total daily rescue hoist lifts x P^{FH} (hoist lifts) + Total daily external load cycles x P^{FH} (external load cycles) = 4 + (3 x 0.5) + (2 x 1.5) = 8.5 FH.

E.g.: **T/R Shaft**: Total daily flight hours = 3 FH. Daily take-off above 8300 kg = 1. Total daily rescue hoist lifts = 3. Total daily external load cycles = 2.

Total accumulated FH = Total daily flight hours + Daily take-off above 8300 kg x P^{FH} (take-off above 8300 kg) + Total daily rescue hoist lifts x P^{FH} (hoist lifts) + Total daily external load cycles x P^{FH} (external load cycles) = 3 + (1 x 0.5) + (3 x 2) + (2 x 1) = 11.5 FH.

6 Guidelines

Daily recording of the following parameters is recommended:

- Flight hours
- Landings (coincides with the number of flights)
- Number of take offs related to operations with take off weight above 8300 kg.
- External hoist lifts Para 3.
- External load operations Para 5.

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