

Chapter 05

Time Limits/Maintenance Checks

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05-00-00

GENERAL

This chapter contains charts for time limits, scheduled maintenance and unscheduled maintenance, and enables licensed personnel to carry out correct inspections on the EXTRA 300S. The periodic inspections and checks described and their recommended time intervals are minimum requirements for maintaining the aircraft in an airworthy condition. Further information will be given by the information service (Service Bulletins, Service Letters, etc.).

If operation of aircraft requires more frequent servicing, the check intervals may be shortened. However the check intervals must not be exceeded without explicit permission from the regulatory authority. Additional checks as well as changes must also be agreed by the regulatory authority.

In general this Manual does not give any information about vendor equipment. Such information can be taken from the vendor equipment maintenance instructions (refer to Chapter 01). However for practicability reason most of the applicable vendor equipment inspections are incorporated in the following checklists. But it has to be noted that the latest editions of inspections given by the vendors remain decisive. So, before beginning an inspection, the inspections of vendor equipment presented here must be compared with the originals referenced under the respective headlines of the checklists, and, in case of doubt (e.g. if originals have changed before changes could be transferred to this Manual by the Revision Service), contact EXTRA-FLUGZEUGBAU GmbH for advice. The maintenance instructions referenced in the checklists are also valid if further inspection of vendor equipment is necessary.

NOTE

For working with checklists refer to Chapter 02-20-03.

DANGER

Do not rotate the propeller nor allow any person to stay in the propeller operating area when performing an inspection or check with the master switch "ON" and the battery connected. The engine may be started unintentionally and may cause serious injuries or death.

05-10-00

TIME LIMIT COMPONENTS

05-10-01

General

All components not listed herein should be inspected as detailed in Chapter 05-20 „Maintenance Checks“ and repaired, overhauled as required. It is recommended that overhaul or replacement of components should be accomplished not later than the specified period of operation for that component or in accordance with the manufactures service data or airworthiness directives.

05-10-02

Overhaul Schedule

Items shown here must be overhauled at the times indicated.

** refer to latest issue of
Manufacturer's Service Bulletin*

Item	Overhaul
Engine (Textron Lycoming)	*
Engine accessories	together with engine
Magneto (Slick)	*
Double magnetos (Bendix)	*
Propeller (MT-Propeller)	*
Governer (Woodward)	*
All other components	on Condition

05-10-03

Recommended Replacement Times

It is recommended to replace the items shown in the following schedule at the times indicated. The times may be modified by the respective national authorities.

*** on the recommendation
 of the manufacturer*

Item	Replace
Battery (Sonnenschein)	2 years **
Batteries of the ELT (Pointer)	2 years **
Wheels (Cleveland, Parker)	on Condition
Tires	on Condition
Fuel, oil & brake hoses (Aeroquip)	after first 7 years, then 5 years
Seat belts (Hooker)	6 years **
Brake and Brake Assembly (Cleveland, Parker)	on Condition
Rudder control cable	on Condition
Fairleads	on Condition
Shock mounts (Lord Kinematics, Barry Controls)	on Condition
Bolts and Nuts	on Condition ***

**** if not stated otherwise*

05-20-00

SCHEDULED MAINTENANCE CHECKS

05-20-01

General

Scheduled maintenance checks or tasks must be carried out at 25, 50, 100, 200, 300, 400, 500 and 1000 hour intervals. In addition an annual inspection equal to the 100 hour inspection has to be performed.

The following pages show a drain hole chart (Figure 1) and lubrication charts (Figures 2 - 4) which can be used in connection with the checklists.

05-20-02

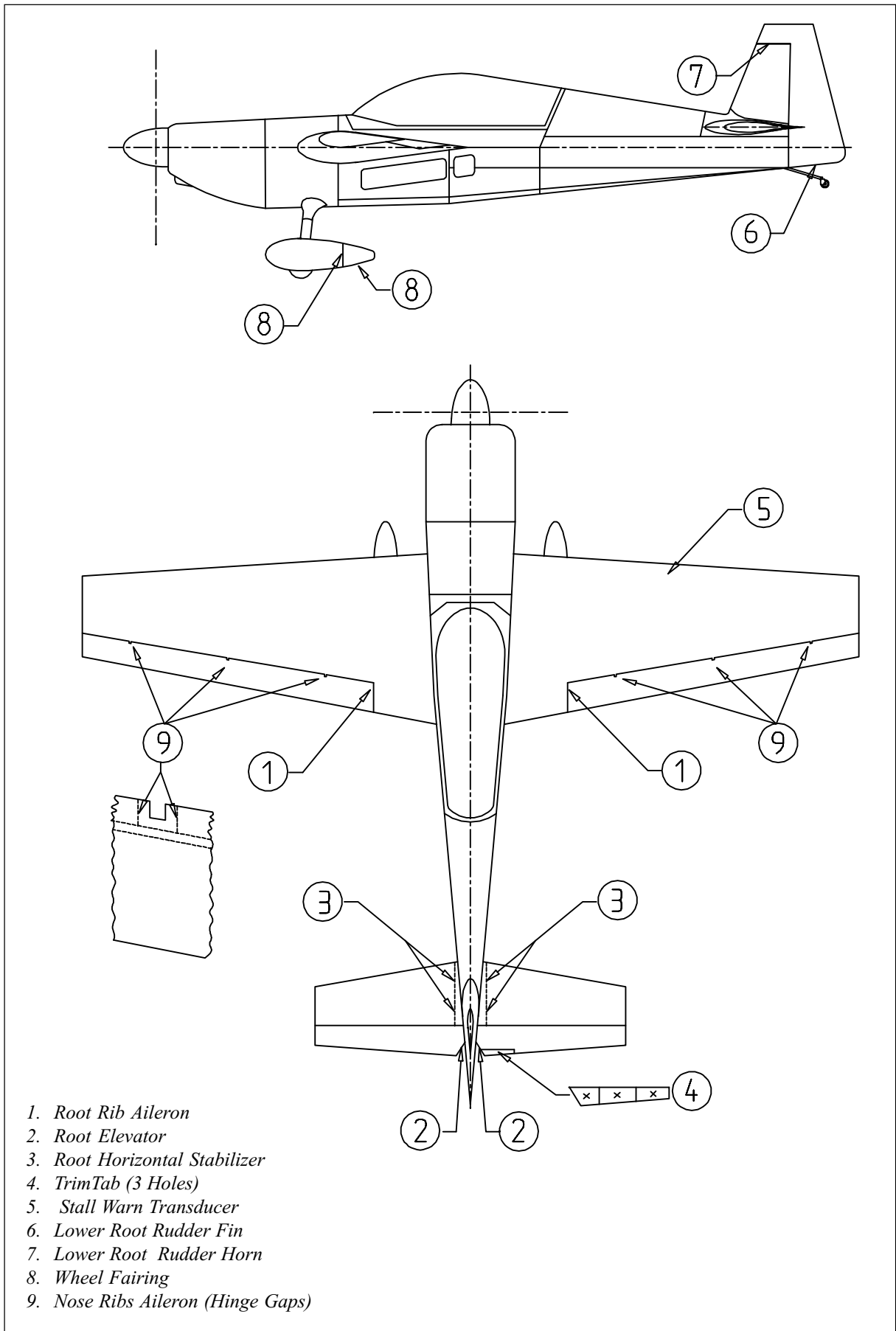
25 Hour Inspection - Engine

A 25 hour inspection is necessary for the engine, because the engine is not equipped with an external oil filter. Therefore the engine oil has to be changed and the oil screen cleaned after every 25 hours. Refer to Figure 2 "Lubrication Chart 25 hours".

05-20-03

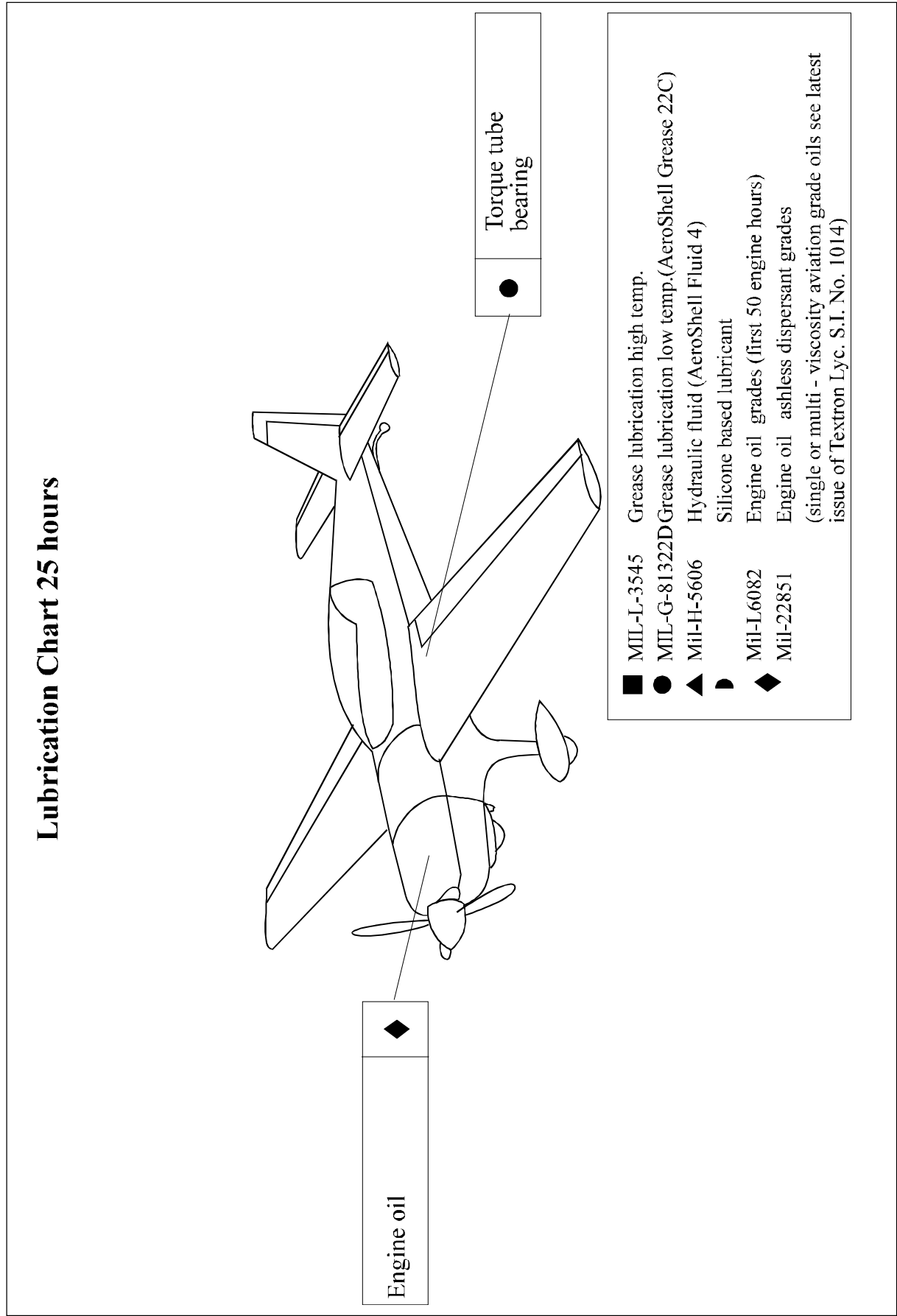
25 Hour Inspection - Aircraft

After the first 25 hours, a check equal to the 100-hour maintenance check has to be performed. Refer to Chapter 05-20-04.



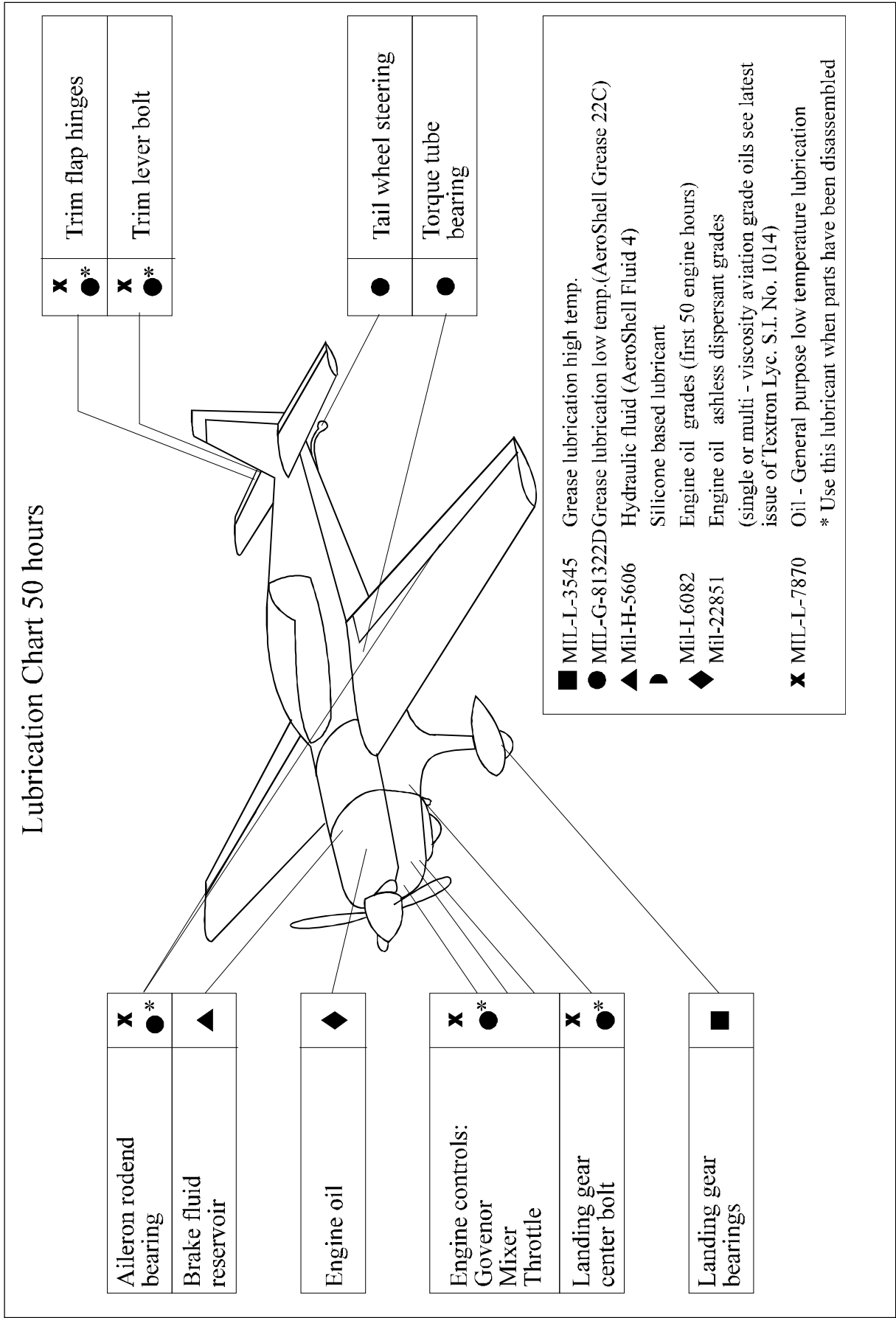
Drain and Vent Holes
Figure 1

Lubrication Chart 25 hours

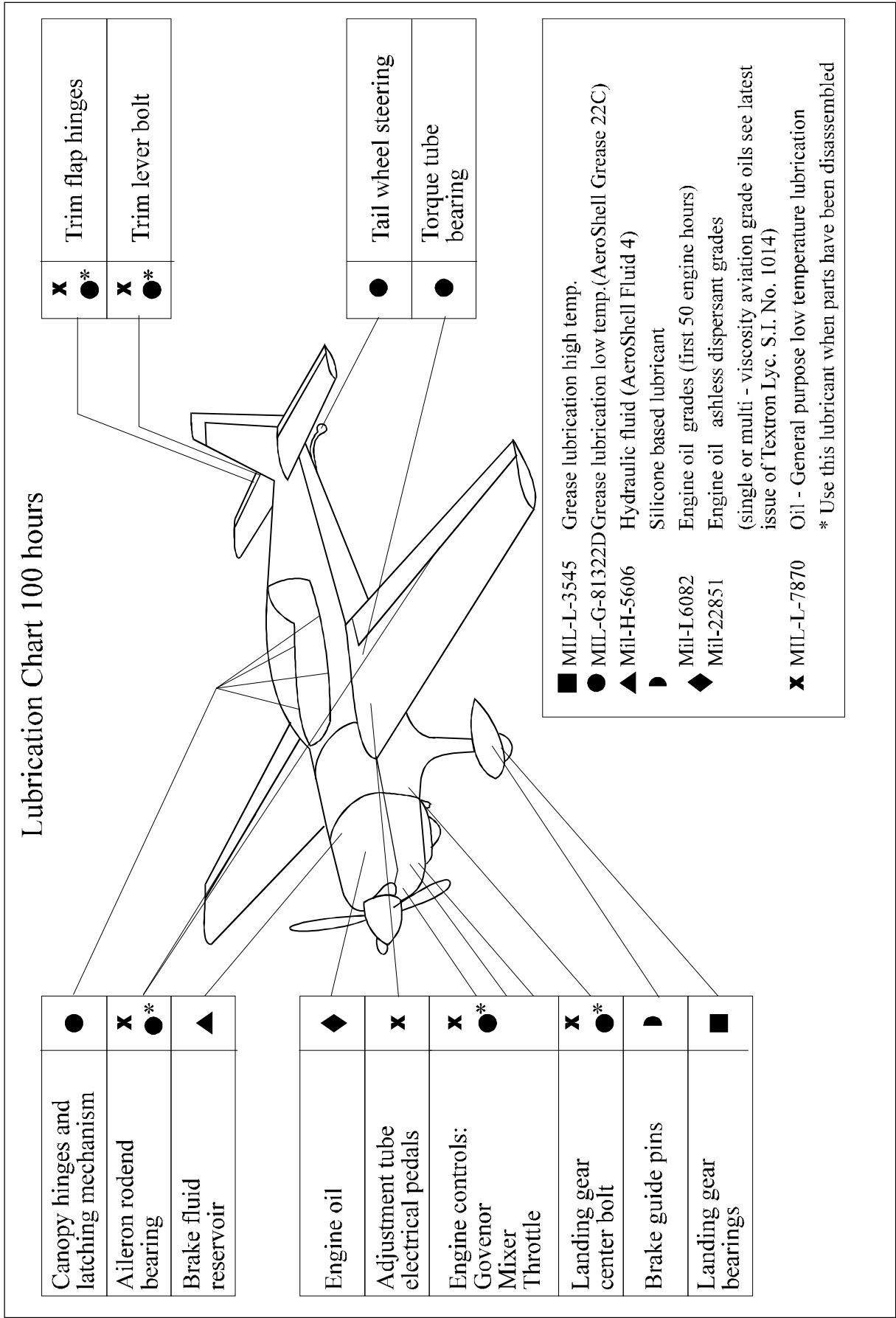


■	MIL-L-3545	Grease lubrication high temp.
●	MIL-G-81322D	Grease lubrication low temp. (AeroShell Grease 22C)
▲	Mil-H-5606	Hydraulic fluid (AeroShell Fluid 4)
◐		Silicone based lubricant
◆	Mil-L6082	Engine oil grades (first 50 engine hours)
	Mil-22851	Engine oil - ashless dispersant grades (single or multi - viscosity aviation grade oils see latest issue of Textron Lyc. S.I. No. 1014)

Lubrication Chart 25 hours
 Figure 2



Lubrication Chart 50 hours
 Figure 3



Lubrication Chart 100 hours
 Figure 4

05-20-04

Maintenance Checks Schedule

The maintenance checks described in this Chapter include all the scheduled checks which must be performed. Use the following schedule and the lubrication charts (Figures 2-4).

			Date:	Inspector:
			Serial No.:	Mechanic:
			Inspections	
			Operational Checks	
	O	O	1 Start engine (in accordance with the Pilot's Operating Handbook)	
	O	O	2 Check the fuel quantity indication.	
	O	O	3 Check oil pressure and temperature.	
	O	O	4 Check generator output.	
	O	O	5 Check magneto RPM-drop at 1800 RPM. (Allowed drop is 175 RPM and no greater diff. between L + R from 50 RPM)	
	O	O	6 Check ignition OFF function at 1000 RPM for a short moment.	
	O	O	7 Check response of the engine by power setting changes.	
	O	O	8 Check the Propeller response at 1800 RPM when changing pitch.	
	O	O	9 Check idle speed is between 650 and 750 RPM.	
	O	O	10 Check the fuel flow and manifold pressure indicator.	
	O	O	11 Check the EGT and CHT indicator.	
	O	O	12 Check mixer function per CHT/EGT indication.	
	O	O	13 Check idle mixture.	
	O	O	14 Check the function of the fuel selector valve.	
	O	O	15 Check the radio and the other electronic equipment.	
	O	O	16 Shut down engine using mixture lever. Check the alternator warning light or ammeter.	

as specified each 50 hours each 100 hours		Date:	Inspector:
		Serial No.:	Mechanic:
Inspections			
	O	O	17 Check the optional electronic g-meter for the maximum g-loading. If extreme value exceeds ± 10 G, contact EXTRA-Flugzeugbau GmbH. Correct date and time of the g-meter (refer to DSA-12 Manual).
	O	O	18 Ignition OFF, main switch OFF, remove ignition key.
	O	O	19 Check if ignition key is removable in OFF-position only, and if key functions in accordance with the requirements of the Teledyne Continental Service Bulletin No. 636.
Propeller			
(refer to latest edition of MT-Propeller Operation and Installation Manual E-124 and Service Bulletins)			
DANGER		Ground magneto primary circuit before working on propeller	
		O	1 Remove spinner and check for cracks.
	O	O	2 Check blade shake, max. 3 mm or 1/8 inch.
	O	O	3 Check blade angle play, max. 2°.
		O	4 Inspect outside condition of the hub and parts for cracks, corrosion, deterioration.
		O	5 Inspect check nut for high pitch stop for tightness.
	O	O	6 Check all safety means to be intact.
	O	O	7 Check flange bolts or stopnuts for tightness.
		O	8 Check front and rear spinnerplate for cracks and fixing.
	O	O	9 Inspect bladeroot and hub for oil- and grease leaks.
		O	10 Check position and condition of counterweights.
	O	O	11 Check blades for cracks in the fibreglass-cover and blade erosion sheet. No cracks allowed. Refer to MT-Propeller SB No. 8
O ¹			12 Overhaul propeller or perform a tear-down inspection.

1 refer to MT-Propeller Service Bulletin No. 1

Date:			Inspector:		
Serial No.:			Mechanic:		
as specified	each 50 hours	each 100 hours	Inspections		
			Engine compartment		
			(Refer to latest edition of Textron Lycoming Operator's Manual and SB's, of Christen Product Manual 801 Series and SB's, of Slick Magneto Maintenance and Overhaul Manual and SB's and of TCM/Bendix Service Support Manual, included in Form X40000 Master Service Manual and SB's)		
DANGER			Ground magneto primary circuit before working on engine		
	O	O	1	Remove engine cowling.	
	O	O	2	Inspect cowling and air inlet screen for damage, cracks, distortion, overheated areas and loose or missing blindnuts and secure attachment of oil level access plate.	
	O	O	3	After this inspection clean cowling.	
	O	O	4	Check fire protection according to EXTRA Service Bulletin 300-6-94. If necessary repaint the fire protection paint ("WIEDOFLUGAT" Brandschutzfarbe N 56582 / T508).	
	O ¹	O	O	5	Drain oil sump in accordance with Chapter 12-10-04 "Engine Oil Replenishing"
	O ¹	O	O	6	Clean and inspect oil screen filter
	O ¹	O	O	7	Clean suction oil strainer at oil change (check strainer for foreign particles).
	O ¹	O	O	8	Clean pressure oil strainer (check for foreign particles)
	O ²	O	O	8a	Change full flow (cartridge type, AEIO-540-L1B5/D engine) oil filter element (check element for foreign particles).
		O	9	Inspect oil temperature sensor unit for leaks and security.	
	O	O	10	Inspect flexible oil lines, oil return lines and fittings for leaks, security, chafing, dents, and cracks (ref: FAA AC 43.13-1A). Replace flexible oil lines at engine TBO per Lyc. SB 240. Check fire protection according to EXTRA SB 300-6-94.	
		O	11	Clean and inspect oil radiators and attachment.	
	O ³		12	Remove and flush oil radiators.	

1 at 10 and 25 hours and then each 25 hours

2 at 10 and 25 hours

2 each 500 hours

as specified each 50 hours each 100 hours			Date:	Inspector:
			Serial No.:	Mechanic:
Inspections				
	O	O	Inspect Christen Inverted Oil System for general condition, leaks, secure mounting and tight connections.	
O ¹			13 Clean and flush the Inverted Oil System with a suitable petroleum solvent, such as varsol according to Lycoming Operator's Manual.	
O ²	O	O	14 Service engine with recommended lubricating oil in accordance with Chapter 12-10-04.	
	O	O	15 Inspect condition of spark plugs (Clean and adjust gap as required, adjust per Lycoming Service Instruction 1042). If fouling of spark plugs has been apparent, rotate bottom plugs to upper plugs and vice versa.	
	O	O	16 Inspect spark plug cable leads and ceramics for corrosion and deposits.	
	O	O	17 Perform a hot engine differential compression check in accordance with FAA AC 43.13-1A.	
		O	18 Inspect cylinders for cracked or broken fins.	
	O	O	19 Check cylinders for evidence of excessive heat which is indicated by discoloration.	
		O	20 Check fuel injector nozzles for looseness. Tighten to 60 inch pounds torque. Check fuel lines for fuel stains which are indicative for fuel leaks.	
	O	O	21 Inspect rocker box covers for evidence of oil leaks. If found, replace gasket; torque cover screws 50 Inch-pounds.	
O ³			22 Remove rocker box covers and check for freedom of valve rockers when valves are closed. Look for evidence of abnormal wear or broken parts in the area of valve tips, valve keeper, springs and spring seats.	
		O	23 Inspect ignition harness for general condition, free from fraying or chafing and insulators for high tension leakage and continuity.	

1 each 300 hours
 2 each 25 hours
 3 each 400 hours

as specified each 50 hours each 100 hours			Date:	Inspector:
			Serial No.:	Mechanic:
Inspections				
<i>TCM/Bendix magnetos</i>				
	O	24	Check magneto-to-engine timing.	
	O	25	Remove all ignition harness spark plug terminals from spark plugs, clean and inspect following the respective sections of the applicable Support Manual.	
	O	26	Inspect magnetos with riveted impulse coupling for wear as specified in the latest revision of TCM/Bendix SB 599D.	
O ¹		27	Inspect magnetos equipped with snap-ring impulse coupling for wear as outlined in the PERIODIC MAINTENANCE Section of the applicable Support Manual, Paragraph 6.2.2.	
O ¹		28	Inspect magnetos as outlined in the PERIODIC MAINTENANCE Section of the applicable Support Manual, Paragraph 6.2.3. Clean and inspect all ignition harness outlet plates, covers or cap assemblies and grommets following the respective sections of the Manual mentioned above.	
O ²		29	Overhaul or replace magnetos acc. to TCM/Bendix SB 643.	
<i>Slick magnetos</i>				
	O	24	Adjust magneto to engine timing, refer to Slick Magneto Maintenance and Overhaul Manual	
	O	25	Inspect wiring connections, vent holes and P-lead attachment, refer to Slick Magneto Maintenance and Overhaul Manual.	
O ¹		26	Clean magnetos.	
O ¹		27	Inspect ball bearing assembly, impulse coupling, coil, contact points, condenser and carbon brush.	
O ³		28	Replace ball bearings.	
O ¹		29	Lubricate magnetos.	
O ⁴		30	Overhaul or replace magnetos.	

- 1 each 500 hours
- 2 at engine overhaul and at the expiration of 4 years
- 3 each 1000 hours
- 4 together with engine

			Date:	Inspector:		
			Serial No.:	Mechanic:		
as specified each 50 hours each 100 hours			Inspections			
		O	31	Check fuel injector for general condition, clean fuel inlet screen.		
	O	O	32	Inspect intake seals and O-rings for leaks and clamps for tightness.		
	O	O	33	Inspect flexible fuel lines, fuel injection lines and fittings for leaks, security, chafing, dents, and cracks (refer to Lycoming SB 342 each 100h; replace or overhaul as required or at engine overhaul). Check fire protection according to EXTRA SB 300-6-94.		
	O	O	34	Check fuel system for leaks.		
O ¹	O	O	35	Remove, clean and inspect gascolator screen and fuel filter bowl.		
	O	O	36	Inspect throttle, mixture, and propeller governor controls for security, travel, and operating conditions.		
	O	O	37	Inspect exhaust stacks, connections and gaskets (replace gaskets as required).		
	O	O	38	Inspect exhaust slipjoints for general condition.		
	O	O	39	Inspect exhaust system attachment.		
		O	40	Inspect crankcase for cracks, leaks, and security of seam bolts.		
	O	O	41	Check engine mounted accessories such as pumps, temperature and pressure sensing units for leaks, secure mounting and tight connections.		
	O	O	42	Inspect engine mount for cracks and loose mountings.		
	O	O	43	Inspect engine baffles free from cracks and fraying.		
		O	44	Inspect all wiring connected to the engine or accessories		
	O	O	45	Inspect engine shock mounts for deterioration (replace as required).		
		O	46	Inspect firewall seals (see EXTRA SB 300-6-94).		
		O	47	Inspect alternator, cable connections and accessories.		

1 clean at least every 90 days

		Date:		Inspector:			
						Serial No.:	
as specified each 50 hours each 100 hours		Inspections					
				O	48	Inspect condition and tension of alternator drive belt	
		O	49	Inspect security of alternator mounting			
		O	50	Inspect starter and starter drive			
		O	O	51	Check brake fluid level (fill as required).		
		O	O	52	Clean engine if necessary.		
		O	O	53	Lubricate all controls per lubrication chart.		
O ¹				54	Overhaul or replace propeller governor as required.		
O ²				55	Complete overhaul of engine or replace with factory rebuilt		
		O	O	56	Reinstall engine cowling.		
				Fuselage			
		O	O	1	Remove tail fairing, tail side skins, main fuselage cover and landing gear cuffs per Chapter 51.		
				O	2 Remove bottom covering window and sheets including exhaust area covering sheet per Chapter 51.		
		O	O	3	Inspect main fuselage cover, bottom covering window and sheets including exhaust area covering sheet, tail fairing, tail side skins and landing gear cuffs for general condition, dents, cracks and loose screws and rivets.		
		O	O	4	Check installed parts for general condition and security of attachment.		
		O	O	5	Inspect fuselage for foreign matters.		
				O	6 Inspect steel tube construction for general condition, corrosion and cracks, above all in areas of load stress (e.g. wing, stabilizer, engine and seat attachments).		
		O	O	7	Visually inspect steel tube construction in the area of horizontal stabilizer attach brackets for cracks. In case of doubt remove horizontal stabilizer and use a dye check penetrant. In case of cracks are found contact EXTRA-FLUGZEUGBAU GmbH for repair advise.		
		O	O	8	Inspect fabric cover for general condition.		

1 refer to Woodward Service Bulletin No. 33580

2 refer to Lycoming Service Instruction No. 1009

as specified each 50 hours each 100 hours			Date:	Inspector:		
			Serial No.:	Mechanic:		
Inspections						
		O	9	Inspect wooden longerons for damage.		
		O	10	Clean and lubricate canopy hinge and latching mechanism.		
	O	O	11	Inspect seats and seat belts for security, attachment, proper operation, and condition. Control the time limit of the seat belts. Refer to Chapter 05-10-02 "Overhaul Schedule".		
		O	12	Inspect breather line for obstructions and security.		
		O	13	Inspect main and auxiliary wing spar connector for general condition.		
Fuel system						
	O	O	1	Inspect the fuel lines for leaks, security, chafing, dents and cracks. Replace fuel lines as required.		
	O	O	2	Inspect fuel selector valve for operation and proper pointer indication		
	O	O	3	Drain fuel system		
	O	O	4	Check acro- and center tank attachment		
	O	O	5	Check acro-, center- and both wingtanks for leaks		
	O	O	6	Check boost pump		
	O	O	7	Check fuel filler caps for security and proper operation		
	O	O	8	Check proper seat and condition of sealing lip (from S.No 30)		
Flight controls						
	O	O	1	Remove wing access panels.		
	O	O	2	Inspect control surfaces for security of attachment, free movement, dents, delaminations and cracks.		
	O	O	3	Inspect elevator trim system for proper operation and rigging.		
	O	O	4	Inspect hinges for condition, cracks and security; hinge bolts, hinge bearings, selflocking nuts.		
	O	O	5	Check free play in control system: torque tube, control surfaces, control stick, rod end bearing, deflector limiter.		
	O ¹	O	O	6	Lubricate rear torque tube bearing.	

1 each 25 hours

		Date:		Inspector:			
						Serial No.:	
as specified each 50 hours each 100 hours		Inspections					
		O	O	7	Lubricate aileron rodend bearings, trim flap hinges and trim lever bolt.		
	O	8	Lubricate adjustment tube of electrical pedal adjustment.				
O	O	9	Check rudder cable system including sleeves, fairleads, pulleys and cable retracting springs per FAA-AC 43.13-1A.				
	O	10	Check for minimum 3.5 mm (1/8") clearance of rudder pedal versus safety stop when fully deflected for rudder cables having 50 h flight time minimum. On newly installed rudder cables the minimum spacing is 6 mm (1/4"). Refer to Figure 5. This check is to be performed with zero loading on the rudder pedals.				
	O	11	Rough check of safety stop clearance. With a force of approx. 90 kg (200 lbs) acting on the fully deflected rudder pedal the safety stop shall not be reached. If the stop is reached the control system indicates a too high flexibility which needs to be traced. In this case contact EXTRA for advice.				
O	O	12	Inspect all flight control ventilation holes for obstruction.				
	O	13	Inspect elevator balance weight for looseness and condition.				
	O	14	Inspect push rods.				
		Landing gear					
O	O	1	Check landing gear for general condition.				
O	O	2	Check landing gear spring for dents and cracks.				
O	O	3	Inspect landing gear spring mounting clamps and bolts for security.				
	O	4	Lubricate landing gear center bolt and landing gear bearings.				
	O	5	Check wheel rake ($10^\circ \pm 0.5^\circ$) and toe-in ($1.5^\circ \pm 0.5^\circ$) per Chapter 32.				
		Fairings:					
O	O	1	Disassemble fairings.				
O	O	2	Check fairings for dents and cracks.				
O	O	3	Check fairing ventilation hole for obstruction.				

Date:			Inspector:		
Serial No.:			Mechanic:		
as specified	each 50 hours	each 100 hours	Inspections		
			Wheels		
			(refer to on-aircraft inspections presented in the latest edition of Cleveland Wheels & Brakes Maintenance Manual and Service Bulletins for wheel, tire and brake inspections)		
	O	O	1	Visually inspect the wheels for corrosion, cracks, or other visible damage.	
	O	O	2	Check wheel nuts to be sure they are properly installed and have not worked loose. Bolt threads should be flush to 1-1/2 threads extending beyond the nut. Nuts should be on the side of wheel opposite the brake disc (outboard side of wheel).	
	O	O	3	Inspect the brake disc for rust, excessive grooves, large cracks, coning or other visible damage. Check if disc thickness is more than 0.325in/8.255mm. Coning of disc in excess of 0.015 in /0.381 mm is cause for replacement (see Fig. 6).	
		O	4	Remove wheels and wheel bearings. Inspect wheel bearing grease for contamination and solidification.	
		O	5	Inspect snap rings and grease seals for distortion or wear. Replace grease seal felts if they are hard or contaminated. Lightly saturate grease seals should be replaced if cracked, dried out, or distorted.	
		O	6	Inspect wheel bearings for excessive wear or damage. Replace on condition.	
		O	7	Repack bearings with AEROSHELL 22C (per MIL-G-81322), or equivalent. Reinstall wheels and safety.	
	O	O	8	Check wheel bearing clearance and wheels for free rotation.	
			Tires		
	O	O	1	Visually inspect tires for cuts, flat spots, and tread or sidewall damage. If changing of tires is necessary follow the instructions, including off-aircraft inspection of wheels, presented in the Cleveland Wheels & Brakes Component Maintenance Manual.	
	O	O	2	Check inflation pressure (2.8 bar/40.6 psi). Proper inflation will provide maximum tire and wheel life.	

as specified each 50 hours each 100 hours			Date:	Inspector:
			Serial No.:	Mechanic:
Inspections				
Brake system				
	O	O	1	Inspect brake assemblies for general condition.
	O	O	2	Inspect master cylinders for leaks.
		O	3	Inspect brake system plumbing for leaks and hoses for bulges and deterioration.
		O	4	Lubricate brake guide pins using Silicone-base lubricant.
	O	O	5	Visually inspect the brakes for corrosion, cracks, or other visible damage. Check inlet fitting bosses and anchor bolt lugs for cracks. Check inlet flares on aircraft side of rigid hydraulic tubing for fatigue cracks.
	O	O	6	Check back plate attachment bolts to insure they are properly torqued and have not worked loose. Gaps between the back plate and cylinder would be evidence of this.
	O	O	7	Check fit of brake cylinder anchor bolts in torque plate bushings for sloppiness. This can be accomplished by grasping the cylinder and moving it; slight movement is normal. Excessive movement is cause for removal and detailed inspection.
	O	O	8	Linings should be visually checked for extreme chipping on the edges. Lining worn to a minimum thickness of 0.100 inch (2.54 mm) must be replaced.
	O	O	9	Visually check torque plate for corrosion, cracks, loose anchor bolt bushings, or other visible damage. Anchor bolt bushings must be flat against torque plate surface.
	O	O	10	Check for any brake fluid leaks.
	O	O	11	Check brake fluid level.
Tail-wheel landing gear				
	O	O	1	Check tail-wheel landing gear for general condition.
	O	O	2	Check tail-wheel landing gear spring for dents, cracks, and delaminations.
	O	O	3	Check tail-wheel rubber tire condition.

Date:			Inspector:				
Serial No.:			Mechanic:				
Inspections							
as specified	each 50 hours	each 100 hours	O	O	4 Inspect tail-wheel spring and swivel arm mounting bolts for security.		
					<i>a) Standard: Full-swivel tailwheel</i>		
			O	O	1 Check swivel arm for dents and cracks.		
			O	O	2 Check tail wheel for free rotation and swivel feature.		
			O		3 Check swivel arm and wheel bearing clearance, service.		
					<i>b) Optional: Steerable tailwheel</i>		
			O	O	1 Check for general condition and function. Pay attention to the free movement of the rudder.		
			O	O	2 Check the connector springs for light precompression.		
			O	O	3 Check the wheelfork for free rotation and steering function, damage, dents, cracks and corrosion.		
			O	O	4 Inspect wheelfork for damage, dents, cracks and corrosion.		
			O	O	5 Inspect the axle bolt and nut for fretting, wear, damage, and stretch.		
			O	O	6 Lubricate tail wheel steering.		
					Wing		
			O	O	1 Check wing for dents, cracks, and delaminations.		
			O		2 Inspect wing spar main bolts for looseness and security.		
			O		3 Check the safety wire and the safety screw of the wing main spar bolt.		
			O		4 Inspect wing spar main sleeves for looseness and bearing load.		
			O		5 Inspect wing auxiliary spar attachment.		
			O		6 Inspect wing ventilation holes for obstruction.		
			O	O	7 Check inside wing structure in the area of access panels.		

as specified each 50 hours each 100 hours			Date:	Inspector:
			Serial No.:	Mechanic:
Inspections				
Stabilizer				
	O	O	1	Check stabilizer for dents, cracks; stone nicks and delaminations.
	O	O	2	Inspect stabilizer spars main bolts for looseness and security.
	O	O	3	Inspect stabilizer auxiliary spars attachment.
		O	4	Inspect stabilizer ventilation holes for obstruction.
Instruments				
		O	1	Inspect panel mounting for security and safety.
		O	2	Check operation, mounting, and wiring of switches for condition and safety.
		O	3	Check automatic circuit breaker mounting and wiring for condition and safety.
		O	4	Inspect stall warner system for condition and security of installation, perform operational check.
	O	O	5	Check wingtip position/strobe lights for security and operation.
	O	O	6	Inspect compass and compass deviation card for proper indication and compensation.
	O ¹		7	Magnetic compass compensation.
		O	8	Check pitot/static air pressure lines for condition and leaks, perform operational check.
Electrical system				
	O	O	1	Check engine bonding
	O	O	2	Check tank bonding (wing- and center tank)
		O	3	Check system wiring free from fraying or cracks
		O	4	Inspect battery and attachment
	O	O	5	Charge battery

1 Annual, each twelve calendar month

05-20-05

Significant Items Inspection

Every **1000 flight** hours the "Significant Items Inspection" must be performed **in addition** to the 100-hour inspection.

1000 hours	Date:	Inspector:
	Serial No.:	Mechanic:
Inspections EXTRA 300S		
Wing		
<i>Leading edge</i>		
O	1 Detailed visual inspection on the surface for erosion, scratches, stone nicks and impact damages.	
O	2 Detailed visual inspection on the bonding top/bottom for dents, cracks and delaminations.	
O	3 Inspect grounding rivets visually.	
<i>Main spar section</i>		
O	4 Check bonding skin/spar for delaminations by coin tapping (Refer to Chapter 20-10-05).	
O	5 Detailed visual inspection on the sparweb for dents, cracks and delaminations by visual inspection through wing access holes using a boroscope.	
<i>Auxiliary spar section</i>		
O	6 Check bonding skin/spar for delamination by coin tapping .	
O	7 Detailed visual inspection on the aux. spar web for dents, cracks and delaminations. Pay particular attention to the cutout for aileron cantilever.	
O	8 Inspect attachment fitting for damage, corrosion and link bolts security.	
<i>Spar carry-through</i>		
O	9 Remove spar cap paint by a solvent. Perform visual inspection for dents and cracks. Check for delaminations by coin tapping. Restore finish in accordance with Chapter 51-70-05.	
O	10 Remove spar web paint by a solvent. Perform visual inspection for dents and cracks. Check for delaminations by coin tapping. Restore finish in accordance with Chapter 51-70-05.	

1000 hours	Date:	Inspector:
	Serial No.:	Mechanic:
Inspections		
O 11	Check main bolt sleeves for secure bonding to the spar.	
	<i>Wing trailing edge</i>	
O 12	Check bonding top/bottom for cracks and delaminations by coin tapping (Refer to Chapter 20-10-05).	
	<i>Root and Tip</i>	
O 13	Check root rib for cracks, delaminations and secure bonding to skin and spars by coin tapping (Refer to Chapter 20-10-05).	
O 14	Inspect tip rib visually for general condition.	
O 15	Check metall fittings (power supply support) for secure bonding to the carbon laminate	
	Aileron	
O 1	Check root and tip rib bonding to the skin laminate by coin tapping.	
O 2	Check bonding skin/spar for delaminations by coin tapping.	
O 3	Check bonding top/bottom for cracks and delaminations by coin tapping (Refer to Chapter 20-10-05).	
O 4	Check hinge points (mounting brackets) and actuator for damages and cracks. Ensure proper attachment.	
O 5	Inspect spades visually for general condition. Check spade support for corrosion, cracks and deformations. Ensure proper attachment to aileron.	
O 6	Inspect ventilation holes for obstruction.	
	Surface general	
O 1	Check painting visually for general condition (blisters etc.).	
O 2	Check laminate for erosion, scratches and nicks.	
	Control system	
O 1	Inspect bell cranks for damage, corrosion, security of mounting and link bolts through wing access holes.	
O 2	Inspect control rods for corrosion.	
O 3	Check Rod end bearing for free movement and cleanliness.	

1000 hours	Date:	Inspector:	
	Serial No.:	Mechanic:	
Inspections			
	Vertical Stabilizer		
	<i>Leading edge</i>		
O	1	Check surface for erosion, scratches, stone nicks and impact damages.	
O	2	Check bonding left/right for dents, cracks and delamination.	
	<i>Front spar section</i>		
O	3	Check bonding skin/spar for delamination by coin tapping (Refer to Chapter 20-10-05).	
O	4	Detailed visual sheet metal attachment fitting for damage, corrosion and link bolts security.	
	<i>Rear spar section</i>		
O	5	Check bonding skin/spar for delamination by coin tapping .	
O	6	Detailed visual rear spar web for dents, cracks and delamination. Pay particular attention to the cut out for rudder cantilever.	
O	7	Check steel sleeve for secure bonding to the spar.	
O	8	Replace attachment bolts and stop nuts. Check for proper torque in accordance with Chapter 20-10-02.	
	<i>Root and Tip</i>		
O	9	Check root rib for cracks, delamination and secure bonding to skin and spars by coin tapping.	
O	10	Inspect tip rib visually for general condition.	
	Rudder		
O	1	Check tip rib bonding to the skin laminate by coin tapping.	
O	2	Check bonding skin/spar for delamination by coin tapping.	
O	3	Check bonding trailing edge for cracks and delaminations by coin tapping.	
O	4	Detailed visual of mounting brackets for damages and cracks. Ensure proper attachment. Replace bolts and stop nuts for new ones in any case. Check for proper torque in accordance with Chapter 20-10-02.	
O	5	Check actuator lever for damage, cracks and proper attachment.	
O	6	Inspect ventilation holes visually for obstruction. Refer to Chapter 05-20-01, Figure 2 "Drain and Vent Holes".	

1000 hours	Date:	Inspector:
	Serial No.:	Mechanic:
Inspections		
O 7	Check painting visually for general condition (blisters etc.).	
O 8	Check laminate for erosion, scratches and stone nicks.	
Horizontal Stabilizer		
<i>Leading edge</i>		
O 1	Check surface for erosion, scratches, stone nicks and impact damage.	
O 2	Check bonding top/bottom for dents, cracks and delamination.	
<i>Front spar section</i>		
O 3	Check bonding skin/spar for delamination by coin tapping.	
<i>Rear spar section</i>		
O 4	Check bonding skin/spar for delamination by coin tapping.	
<i>Spar carry-through</i>		
O 5	Remove spar cap paint by a solvent. Perform visual inspection for dents and cracks. Check for delamination by coin tapping. Restore finish in accordance with Chapter 51-70-05.	
O 6	Remove Spar web paint by a solvent. Perform visual inspection for dents and cracks. Check for delaminations by coin tapping. Restore finish in accordance with Chapter 51-70-05.	
O 7	Replace attachment bolts and stop nuts. Check for proper torque in accordance with Chapter 20-10-02.	
O 8	Check steel sleeves for secure bonding to the spar.	
<i>Root and Tip</i>		
O 9	Check root rib for cracks, delamination and secure bonding to skin and spars by coin tapping.	
O 10	Inspect tip rib visually for general condition.	
Elevator		
O 1	Check tip rib bonding to the skin laminate by coin tapping.	
O 2	Check bonding skin/spar for delaminations by coin tapping.	
O 3	Check bonding trailing edge for cracks and delamination by coin tapping.	
O 4	Detailed visual inspection of mounting brackets for damage, cracks and proper attachment. Replace bolts and stop nuts. Check for proper torque in accordance with Chapter 20-10-02.	

1000 hours	Date:	Inspector:
	Serial No.:	Mechanic:
Inspections		
O 5	Check center section for delamination by coin tapping.	
O 6	Detailed visual of actuator lever for damage, cracks and proper attachment.	
O 7	Detailed visual of mass balance attachment and mounting boom for deformation, corrosion and cracks.	
O 8	Detailed visual of trim tab hinges, actuator lever for damage, cracks, excessive wear and proper bonding to the laminate. Detailed visual for delamination.	
O 9	Inspect ventilation holes for obstruction.	
	<i>Surface general</i>	
O 10	Check painting for general condition (blisters etc.).	
O 11	Check laminate for erosion, scratches, stone nicks and impact damages.	
	Fuselage	
O 1	Inspect tubular steel frame visually for corrosion, scratches and damages.	
O 2	Check wing main spar attachment for damage and corrosion. Inspect for dents and cracks.	
O 3	Detailed visual of the sheet metal of the wing auxiliary spar attachment for damage, corrosion. Inspect the sheet metal supports using a fluorescent dye penetrant to insure no cracks are evident.	
O 4	Detailed visual of cockpit frame visually for dents, cracks and delaminations.	
O 5	Inspect main fuselage cover visually for dents, cracks and delamination.	
	Flight controls	
O 1	Detailed visual of torque tube for damages, cracks, free-play and stop adjustments.	
O 2	Detailed visual of bell cranks for damage, cracks, corrosion, security of mounting and link bolts.	
O 3	Inspect control rods for loose or popped rivets and general condition.	
O 4	Inspect sticks (rear & front) for full travel, proper rigging, free-play, security of mounting and direction of control surface movement with relation to stick movement.	

1000 hours	Date:	Inspector:
	Serial No.:	Mechanic:
Inspections		
O	5 Check rod end bearings for free movement and cleanliness.	
O	6 Detailed visual of trim actuator lever for damages and cracks. Ensure proper attachment and condition of friction.	
Main landing gear		
O	1 Inspect landing gear spring visually for dents, cracks and delaminations, especially at the axle attachment and the center bushing for wear and looseness.	
O	2 Check mounting clamp for damage and corrosion. Inspect for dents and cracks.	
O	3 Inspect mounting clamp bolts and nuts for fretting, wear, damage, stretch and proper torque (refer to Chapter 20-10-03).	
O	4 Check brakes discs for warping and wear. Inspect wheel brake cylinder mounting bracket for wear.	
O	5 Inspect brake lines for leakage, dents, cracks, chaffing, kinks and security of anchorage.	
O	6 Inspect axle attachment bolts and nuts for fretting, wear, damage, and stretch.	
O	7 Check tires for general condition.	
Tail-wheel landing gear		
O	1 Inspect glass fibre spring visually for dents, cracks and delaminations.	
O	2 Inspect mounting bolts and nuts for fretting, wear, damage, stretch and proper torque.	
Standard: Full-swivel tail-wheel		
O	1 Check tail-wheel for free rotation and general condition.	
O	2 Inspect swivel arm visually for damage, dents, cracks and corrosion. Check for swivel feature.	
O	3 Inspect axle bolt and nut for fretting, wear, damage, and stretch.	
O	4 Check rubber tire for general condition.	
Optional: Steerable tail-wheel		
O	1 Check tail-wheel for general condition and function. Pay attention to the free movement of the rudder.	

1000 hours	Date:		Inspector:		
	Serial No.:		Mechanic:		
Inspections					
<input type="checkbox"/>	2 Check connector springs for light precompression.				
<input type="checkbox"/>	3 Inspect wheelfork visually for damage, dents, cracks and corrosion.				
<input type="checkbox"/>	4 Inspect axle bolt and nut for fretting, wear, damage, and stretch.				
<input type="checkbox"/>	5 Check rubber tire for general condition.				
Engine compartment					
<input type="checkbox"/>	1 Check firewall for dents, cracks and deformation. Visual inspection of silicon seals for porosity and general condition.				
<input type="checkbox"/>	2 Inspect tubular engine mount for dents, cracks and corrosion. Check all bolts for security and condition.				
<input type="checkbox"/>	3 Visual inspection of rubber mounts (shock mounts) for porosity and general condition.				
<input type="checkbox"/>	4 Inspect flexible hose for damage and leakage.				
<input type="checkbox"/>	5 Visual inspection of fire sleeves for chaffing and general condition.				
<input type="checkbox"/>	6 Check electric wiring for proper connection.				
<input type="checkbox"/>	7 Check grounding straps for proper connection.				
<input type="checkbox"/>	8 Visual inspection of inverted oil system for general condition according to CHRISTEN 801 instruction. Refer to CHRISTEN Product Manual P/N: 70047-001 or to TEXTRON LYCOMING Operator's Manual P/N: 60297-21.				
<input type="checkbox"/>	9 Carry out general engine check as instructed by TEXTRON LYCOMING Operator's Manual P/N: 60297-21.				
<input type="checkbox"/>	10 Visual inspection of cowling for dents, cracks, delamination and smoke marks.				
Hardware					
<input type="checkbox"/>	1 Magnaflux or fluorescent dye-check of the wing main spar bolts by authorized personnel is required. (Remove only one bolt at a time). Inspect for security of the spar bolts and safety-screws.				
<input type="checkbox"/>	2 Check harness attachment fittings for cracks, deformations and corrosion.				
<input type="checkbox"/>	3 Check bolts and nuts in critical areas for fretting, wear, damage, stretch, proper torque and safety.				
<input type="checkbox"/>	4 Visual inspection of center tank fastening straps for cracks, damage and corrosion.				

<i>1000 hours</i>	Date:	Inspector:	
	Serial No.:	Mechanic:	
Inspections			
O	5	Visual inspection of battery fastening straps for cracks, damage and corrosion.	
O	6	Check the "quick pins" of the seat adjustment for cracks, deformations and corrosion. Inspect wear and proper function.	
O	7	Visual inspection of rudder pedal mounting to the attachment fittings. Check bolts for security.	
Surface general			
O		Visual check of painting for deteriorated paint.	

05-50-00

UNSCHEDULED MAINTENANCE CHECKS

Unscheduled checks are only performed after abnormal events, which could possibly have caused damage to the aircraft or impaired the airworthiness.

IMPORTANT

In case of abnormal events or any exceedance of given limitations (load factor, never exceed speed, etc.) the manufacturer has to be contacted to find appropriate maintenance procedures. Therefore the procedures described in the following could be subjected to changes.

05-50-01

Violent Stopping of the Engine (Propeller Strike)

In a case where the propeller has struck the ground or the engine has been stopped violently (shock loading), the complete engine has to be disassembled and checked by an authorized company. The crankshaft might be damaged. The propeller has to be checked and repaired by an authorized company according to MT-propeller instruction. Refer to MT-propeller "Operation- and Installation Manual E-124".

05-50-02

Hard Landing

After an extremely hard landing or other unusual loads on the landing gear, perform a check as described in the following, even when there are no obvious signs of damage: If there are indications that structural parts are damaged, the manufacturer has to be consulted for possible and suitable repair methods.

Date:		Inspector:		
Serial No.:		Mechanic:		
Inspections				
	Landing gear			
O	1	Examine landing gear mounting clamps for defects (e.g. cracks and deformed areas)		
O	2	Check clamp bolts of the landing gear for cracks, replace when necessary		
O	3	Examine wheel track and check if measurement correspond to the value given in Chapter 06-10-01.		
O	4	Remove and check the fairings for delamination, deformations and cracks		
O	5	Check the landing gear spring for delamination, deformations and cracks, especially in the area of the axle attachment		
O	6	Check fuselage structure in the area of landing gear attachment for deformation and cracks		
O	7	Examine wheel base and check if measurement correspond to the value given in Chapter 06-10-01.		
O	8	Check tires for cuts in the side wall		
O	9	Check wheel halves and brake discs for impacts, cracks and distortion according to CLEVELAND instruction.		
O	10	Check tail wheel for deformation and cracks, especially in the area of the axle attachment		
O	11	Check fuselage structure in the area of the tail wheel for deformation and cracks		
	Control surfaces			
O	12	Check control surfaces for proper operation		
O	13	Check control surface hinges for cracks, security and free movement		
O	14	Check the balance weights of the elevator for security of attachment		
O	15	Check the spades for security of attachment		
	Engine			
O	1	Check engine mount		

05-50-03

Engine Fire

After an engine fire, perform a check as described in the following:

For damage evaluation consult the manufacturer, before the aircraft is put back into service.

Date:		Inspector:	
Serial No.:		Mechanic:	
Inspections			
O	1 Check all cables and hoses, replace when necessary		
O	2 Check engine according to the Lycoming Manual		
O	3 Check fire wall and engine cowling for damage by high temperatures (e.g. signs of blister on the protective paint) If necessary repaint the fire protection paint ("WIEDOFLUGAT" Brandschutzfarbe N 56582 / T508) .		

05-50-04

Lightning Strike

In the event of a lightning strike in flight or on ground check the following:

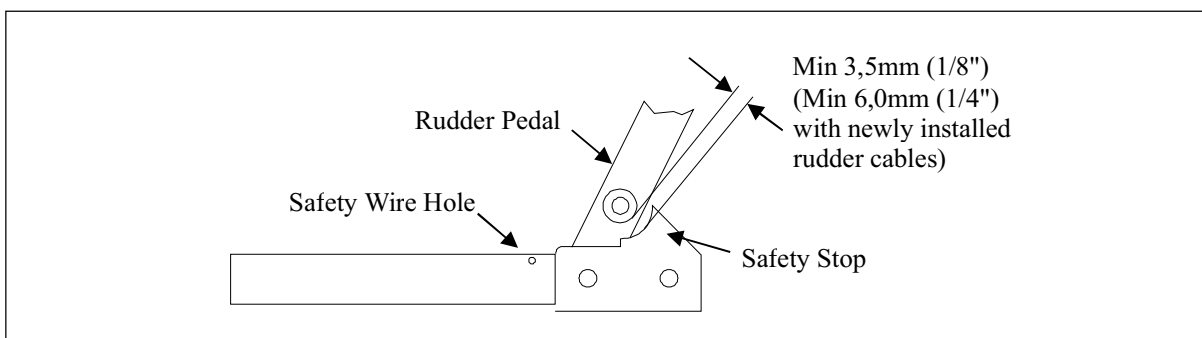
Date:		Inspector:	
Serial No.:		Mechanic:	
Inspections			
O	1 Check engine according to Lycoming Service Bulletin 401.		
O	2 Check the skin of the strike area for burns and melting		
O	3 Inspect bolts and fasteners for burns and melting .		
O	4 Check the electrical system, with running engine, for correct operation.		
O	5 Check the avionic and antenna for correct operation.		
O	6 Check the magnetic compass for correct readings.		

05-50-05

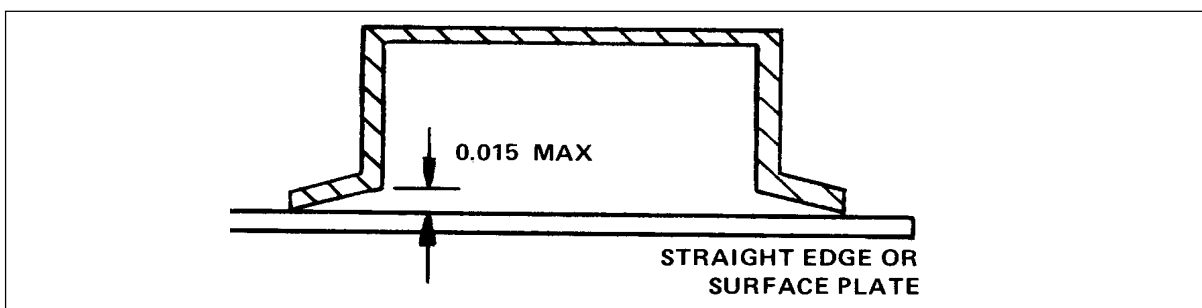
Flightline Inspections

These checks include pre-flight and postflight checks, as they are described in Sections 3 and 4 ("EMERGENCY PROCEDURES" and "NORMAL PROCEDURES") of the PILOT'S OPERATING HANDBOOK. When the aircraft is in operation, perform these checks daily.

as specified each 50 hours each 100 hours			Date:	Inspector:
			Serial No.:	Mechanic:
Inspections				
General				
O ²	O	O	1	Perform checks given for special equipment installed (refer to Chapter 95).
O ²	O	O	2	Reinstall access panels per Ch. 51.
O ²	O	O	3	Aircraft conforms to Specifications of respective Authority
O ²	O	O	4	All required airworthiness directives complied with.
O ²	O	O	5	All EXTRA mandatory Service Bulletins complied with.
O ²	O	O	6	All vendor Service Bulletins and Service Letters complied with.
O ²	O	O	7	Check for proper flight manual.
O ²	O	O	8	Aircraft papers in proper order.



*Minimum Clearance Check
 Figure 5*



*Coning Check
 Figure 6*

2 as required