

CHAPTER

05

**TIME LIMITS /
MAINTENANCE CHECKS**

CONTENT

Name of item	Chapter Section/Subsection Subject	Page
GENERAL	05-00-00	05-1
SCHEDULED PART REPLACEMENT	05-10-00	05-2
REGULAR MAINTENANCE	05-20-00	05-3
PLAN OF GREASING	05-21-00	05-4
SCHEDULED MAINTENANCE	05-22-00	05-15
ON-CONDITION MAINTENANCE	05-50-00	05-37
HEAVY / VERY HEAVY LANDING	05-51-00	05-38
EXCESS OF MAXIMUM LOAD LIMITS	05-52-00	05-39
EXTRAORDINARY BATTERY MAINTENANCE	05-53-00	05-40

EFFECTIVITY: All

05 - CONTENT

page 1
2011-02-02

INTENTIONALLY LEFT BLANK

GENERAL

This chapter contains periods of regular servicing including the list of precesses to be carried out during regular maintenance.
Furthermore this charter contains precesses to be carried out during irregular/on-condition maintenance.

EFFECTIVITY: All

05-00-00

page 05 - 1
2011-02-02

SCHEDULED PART REPLACEMENT

The parts listed in the table should be replaced at the date of expiry.

Item	Time of operation	Notes
Rubber hoses with jackets (in engine compartment only): a) fuel and oil hoses; b) 1 pcs of hose of fuel pressure measurement c) 1 pcs of hose of oil pressure measurement.	10 years	The hoses with jackets are provided with MoN marks. It is possible to use AEROQUIP hoses with unlimited life time instead of rubber hoses. These hoses are without jackets and are provided with shield and AEROQUIP - AE marking.
Red rubber hoses of airplane fuel system.		Only in airplane with FACET fuel pump - up to airplane production No. 0014.
Red rubber hoses of airplane brake system.		It is possible to use AEROQUIP hoses with unlimited life time instead of rubber hoses. These hoses are provided with metal shielding and AEROQUIP placard.
Green rubber oil hoses without jackets in engine compartment.	15 years	
Red rubber hoses of main fuel tank venting.		
Two red rubber hoses of engine manifold pressure measurement.		
Green rubber hoses of pitot-static system.		It is possible to use transparent silicone hoses of unlimited life time instead of rubber hoses.
Green rubber hoses of vacuum system.		
Emergency batteries.	6 years	
Batteries a) ELT E-01 b) ELT remote control: - Li-ion - Alkaline.	2 years 8 years 4 years	According to battery manufacturer.
POINTER 3000 ELT battery.	3 years	According to manufacturer data.

REGULAR MAINTENANCE

As soon as the prescribed flight time is covered the following regular activities are carried out:

- a) greasing of airplane parts according to greasing plan (section 05-21-00)
- b) scheduled maintenance (section 05-22-00).

NOTE

This manual does not contain description of pre-flight inspections - these inspection are issued in Z 143 L or Z 143 LSi aircraft Flight Manual (Chapter 4).

PLAN OF GREASING

PLAN OF GREASING				
Greased spot	Name of process	Specification	Way of application	Note
50 hrs period				
A	Engine oil replacement	Acc. to chapter 12-10-00, FILLING OF ENGINE OIL	---	Replace oil in engine after the first 25 flight hours
100 hrs period				
D	Rudder hinge	MIL-G-7711 A (M)	manual, spray	Filling the felt dust protectors with grease.
E	Elevator hinges			
F1	Rudder control			
F2	Nose wheel steering			
G	Throttle control			
H	Propeller control			
I	Mixture control			
J	Carburetor rating control (only Z 143L)	MIL-G-81322 E or MIL-G-3545	manual	
K	Bearing of main landing gear			
L	Bearing of nose landing gear			
Once a year				
Q	Pitch trim	MIL-G-7711 A (M)	spray	
R	Canopy rails		manual, spray	
S	Shimmy damper			
T1	Pulleys of wing flap control			
T2	Pulleys of rudder control			
U	Wings mount	MIL-C-14201 A	spray	Anticorrosion preservation.
V	Braces of nose landing gear mount			
W	Main landing gear mounts (left, right)			
X	Engine mounts			
Y	Mounts of horizontal stabilizer and its braces			

EFFECTIVITY: All

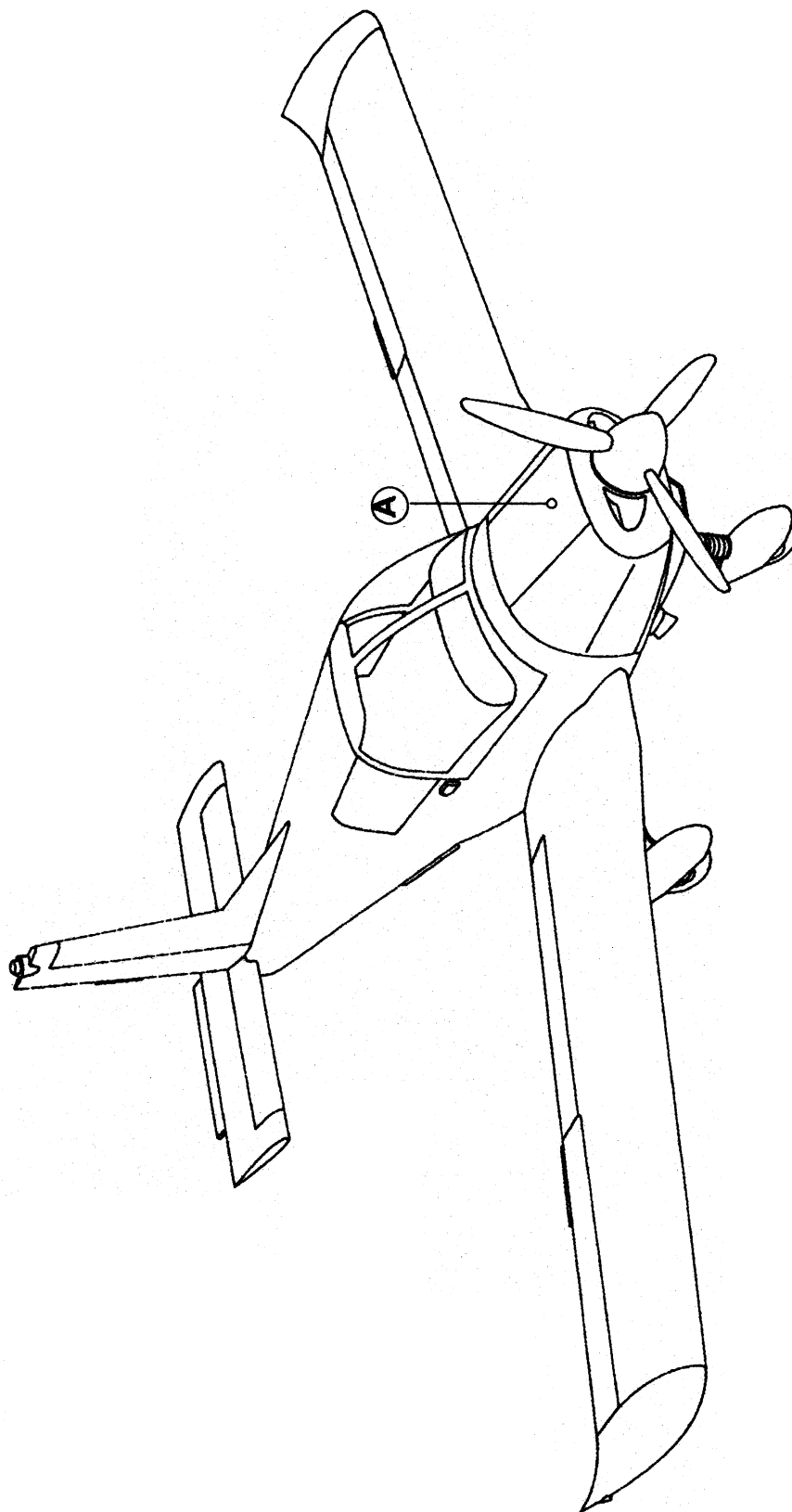
PLAN OF GREASING				
Greased spot	Name of process	Specification	Way of application	Note
Once per 5 year				
AA	Elevator control	MIL-G-7711 A (M)	manual, spray	
AB	Rudder control mechanism			
AC	Brake pedals and pedal brake units			
On-condition greasing				
---	Canopy jettisoning control	MIL-G-7711 A (M)	manual, spray	
---	Canopy lock			
---	Trim tab hinge			
---	Rudder trim tab			
---	Fwd seat rails			
---	Fwd seat adjustment			
---	Covers and doors			
---	Heating and ventil control			
Greasing during REMOVAL / INSTALLATION				
---	Axles of main landing gear wheels	MIL-G-81322 E nebo MIL-G-3545	manual	
---	Axle of nose landing gear wheel			
---	Brakes	MIL-G-7711 A (M)	manual, spray	
---	Lever of ailerons and wing flaps			
---	Upper side of nose landing gear			
---	Bottom mount of oleo shock absorber			
---	Shimmy damper mounts			
---	Joining bolts of fwd and rear fuselage section			
	Elevator and rudder mounts			
	Aileron and flap mounts			

EFFECTIVITY: All

05-21-00

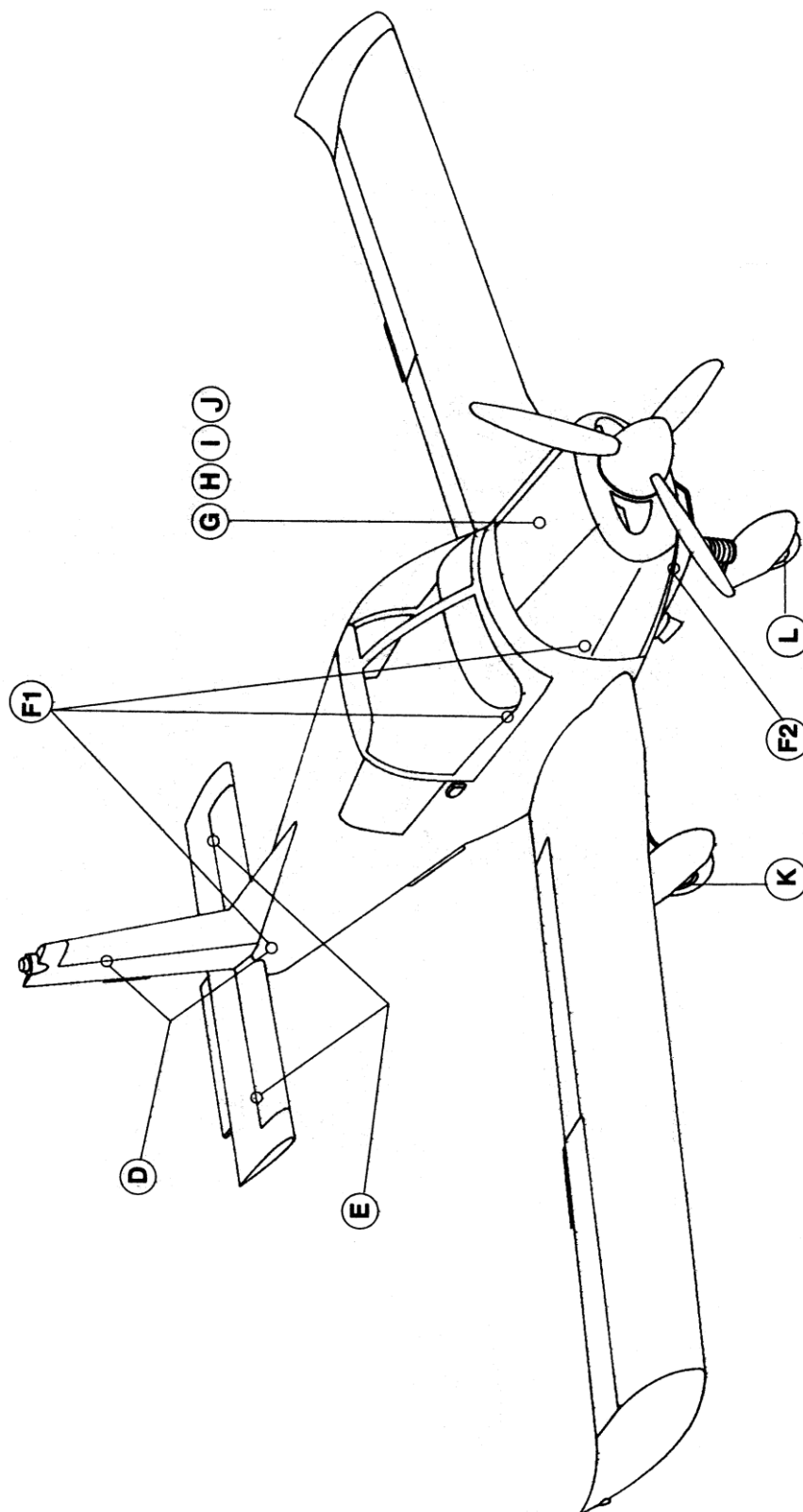
page 05 - 5
2011-02-02

PLAN OF GREASING - 50 HRS PERIOD



EFFECTIVITY: All

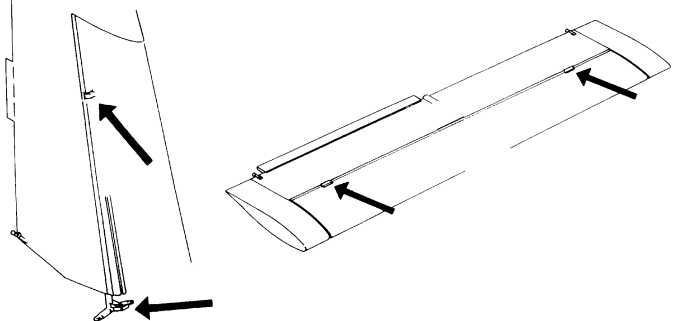
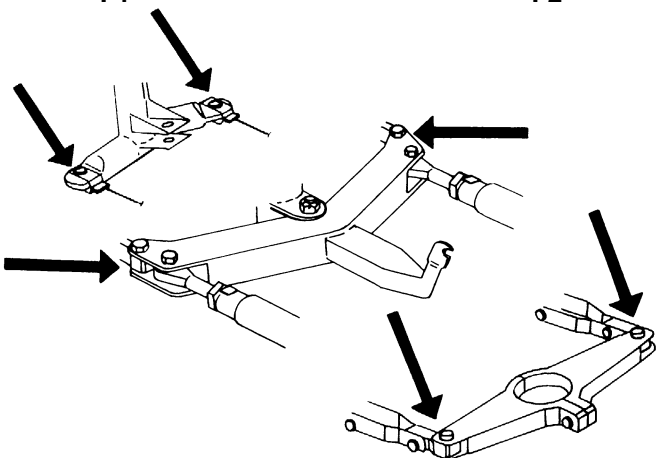
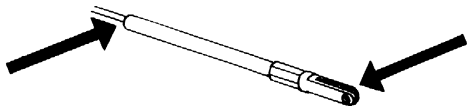
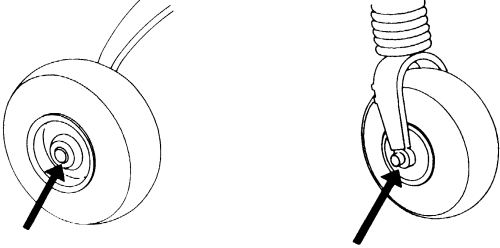
PLAN OF GREASING – 100 HRS PERIOD



EFFECTIVITY: All

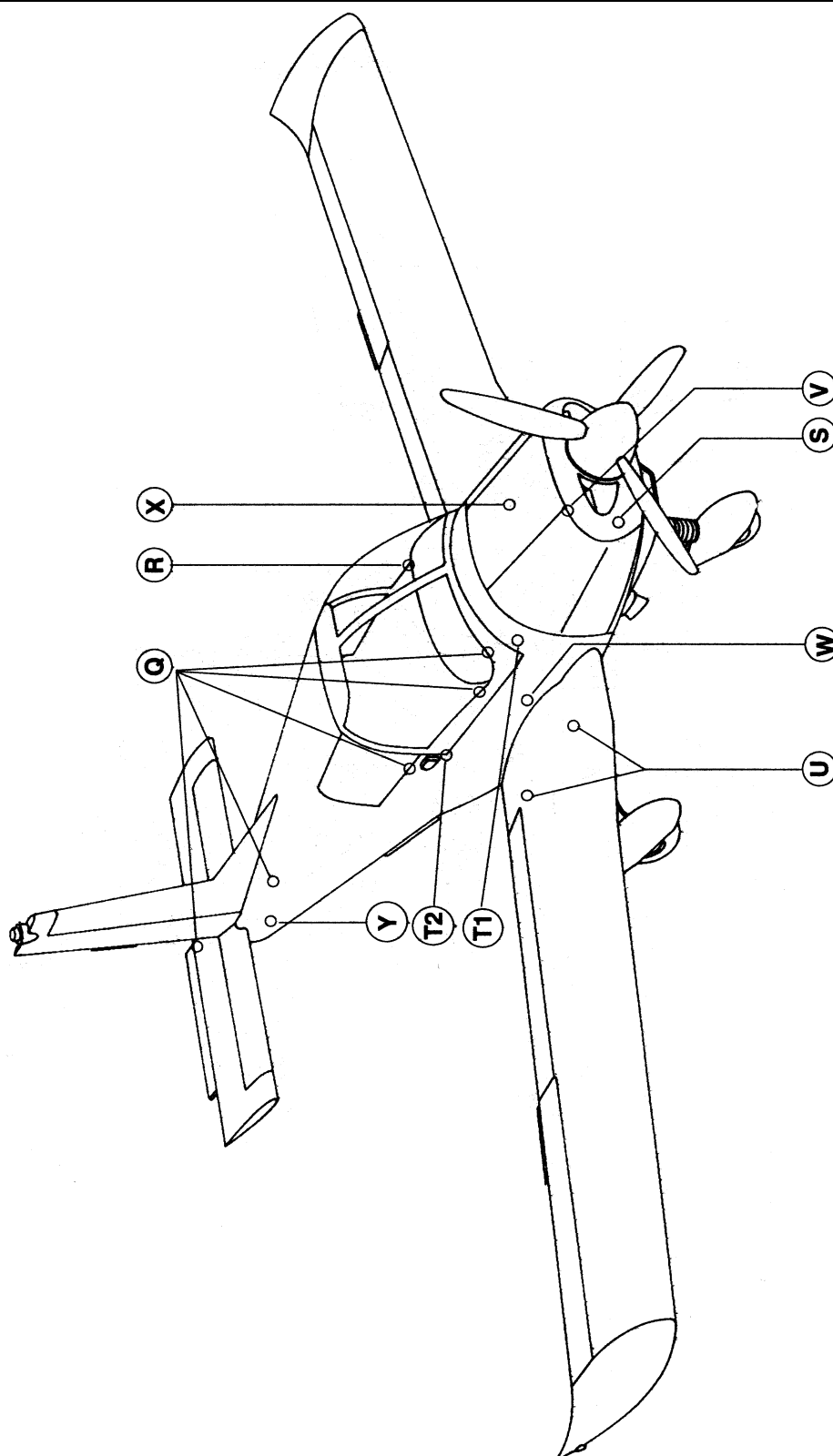
05-21-00

page 05 - 7
2011-02-02

PLAN OF GREASING – 100 HRS PERIOD		
Greased point	Name of process	Illustration
D E	Rudder hinges Elevator hinges	
F1 F2	Rudder control Nose wheel steering	
G, H, I, J	Throttle control, Propeller control, Mixture control, Carburetor heating control (only Z 143L)	
K L	Bearings of main landing gear wheels Bearings of nose landing gear wheels	

EFFECTIVITY: All

PLAN OF GREASING – ONCE A YEAR

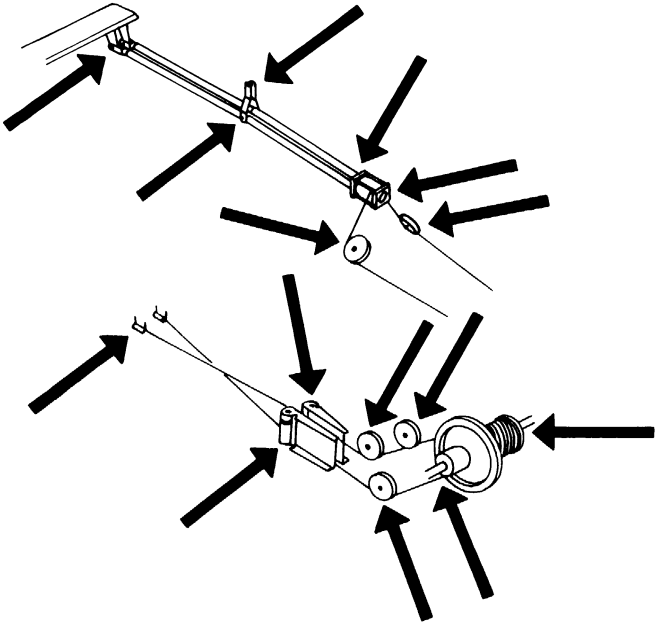
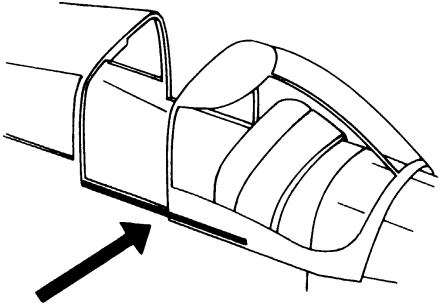
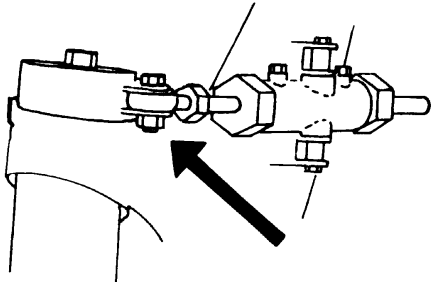


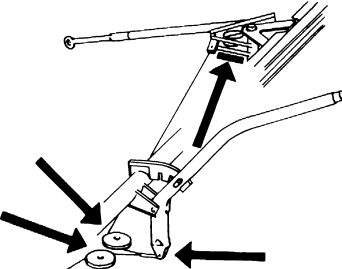
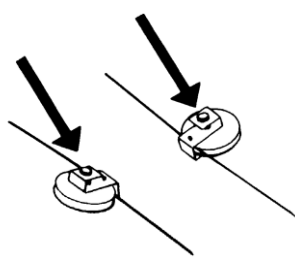
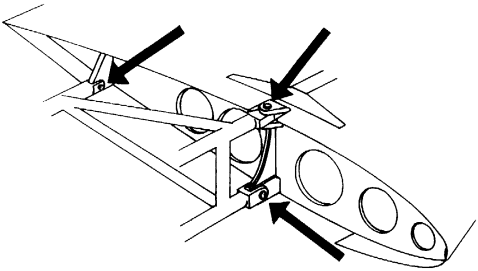
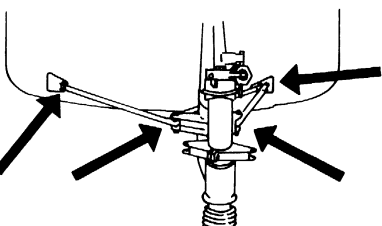
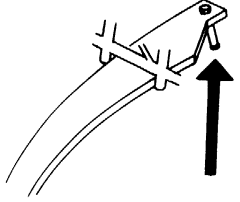
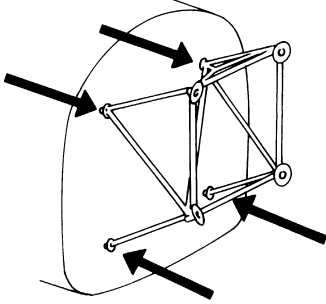
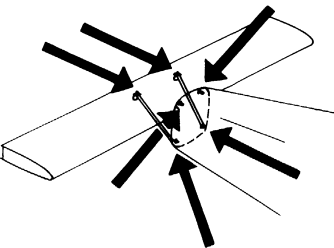
EFFECTIVITY: All

05-21-00

page 05 - 9
2011-02-02

PLAN OF GREASING – ONCE A YEAR

Greased point	Name of process	Illustration
Q	Pitch trim	
R	Rails of sliding canopy	
S	Shimmy damper	

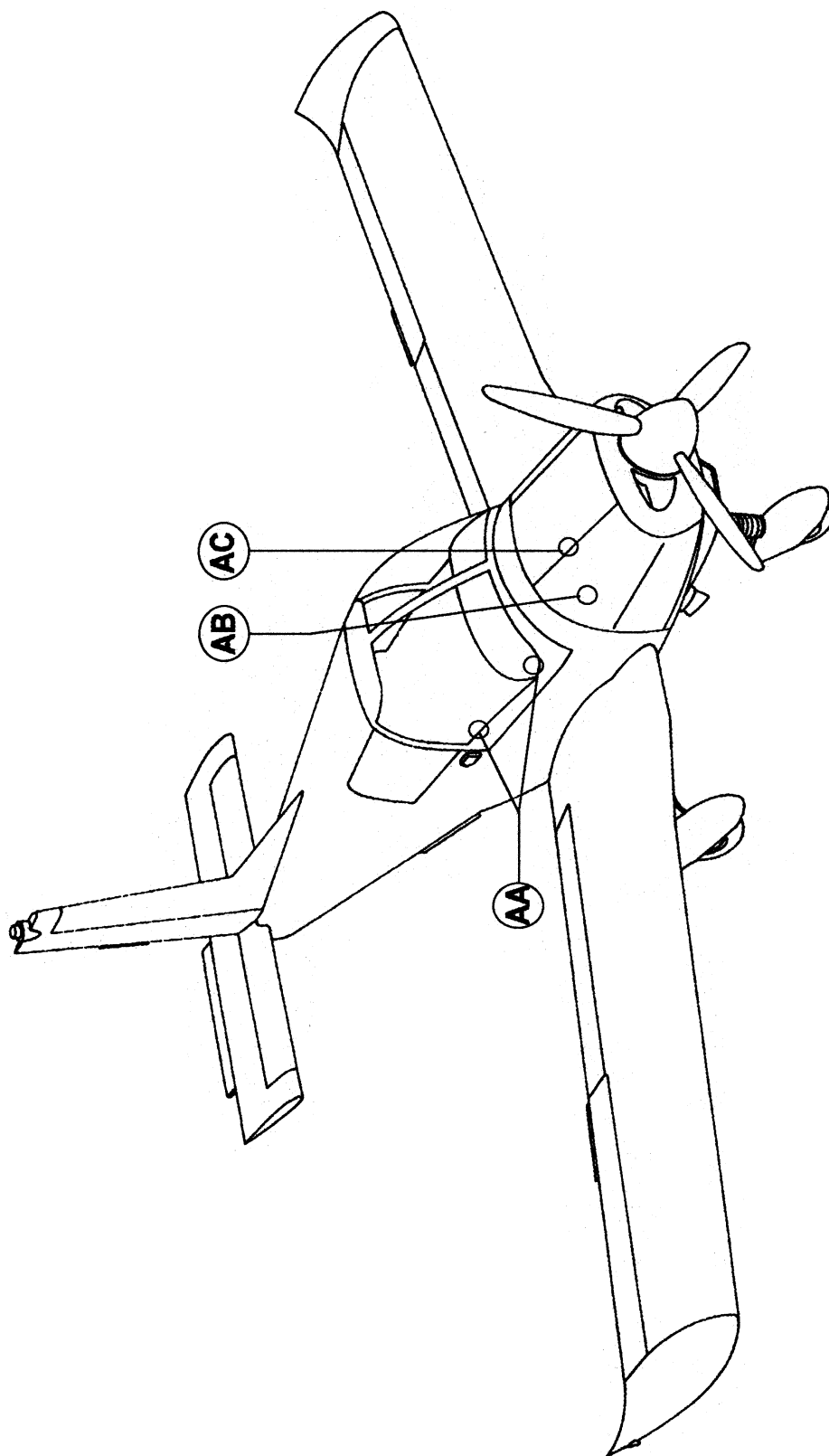
PLAN OF GREASING – ONCE A YEAR		
Greased point	Name of process	Illustration
T1 T2	Pulleys of wing flap control Pulleys fo rudder control	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>T1</p>  </div> <div style="text-align: center;"> <p>T2</p>  </div> </div>
U	Wing mouts	
V W	Braces of nose landing gear mounts Main landing gear mounts (left, right)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>V</p>  </div> <div style="text-align: center;"> <p>W</p>  </div> </div>
X	Engine mounts	
Y	Mounts of stabilizer and stabilizer braces	

EFFECTIVITY: All

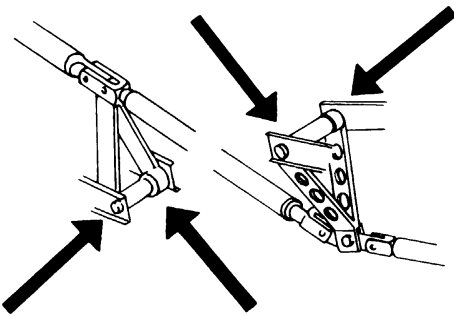
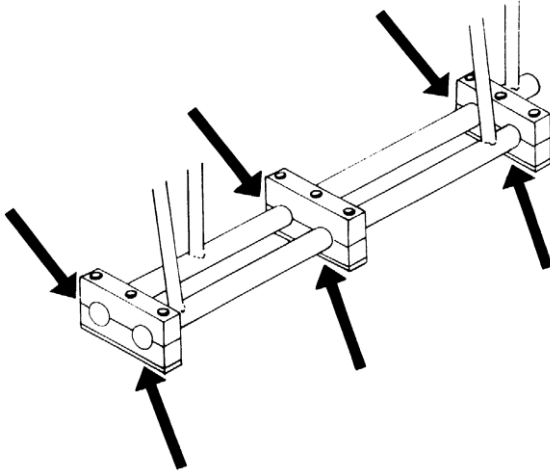
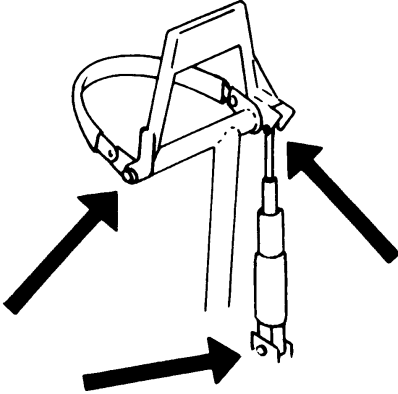
05-21-00

page 05 - 11
2011-02-02

PLAN OF GREASING – ONCE PER 5 YEARS



PLAN OF GREASING – ONCE PER 5 YEARS

Greased point	Name of process	Illustration
AA	Elevator (pitch) control	
AB	Countershaft of rudder control	
AC	Brake pedals and foot-pump	

EFFECTIVITY: All

05-21-00

page 05 - 13
2011-02-02

TYPES OF APPROVED GREASES

Applied to	Specification	Model (commercial mark)
Unmovable airplane parts, i.e. wing mounts	MIL-C-14201 A	WD-40
Remaining parts of airplane	MIL-G-7711 A (M) MIL-G-3545 MIL-G-81322 E	AeroShell Grease 6 AeroShell Grease 5 AeroShell Grease 22

DEGREASING AGENT

All airplane parts	-----	Natural Blue Cleaner and Degreaser (LOCTITE)
		LPS Precision Clean Multi-Purpose Cleaner/Degreaser

SCHEDULED MAINTENANCE

AIRPLANE MAINTENANCE

The airplane maintenance is based upon carrying out following inspections:

- 1) Pre-flight check (Z 143L or Z 143LSi Airplane Flight Manual – Chapter 4).
- 2) Inspection carried out after the first 25 and 50 flight hours
 - a) Engine inspection and its installation after the 25 flight hours since the time of new/overhauled engine installation to airplane according to checklist INSPECTION AFTER FIRST 25 FLIGHT HOURS / PERIODIC INSPECTION AFTER 50 FLIGHT HOURS.
 - b) Airframe inspection after the first 50 flight hours since the use of airplane in operation according to checklist INSPECTION AFTER FIRST 50 FLIGHT HOURS and the checklist INSPECTION AFTER FIRST 25 FLIGHT HOURS / PERIODIC INSPECTION AFTER FIRST 50 FLIGHT HOURS.
- 3) Periodic inspection
 - a) 50 hrs inspection – scheduled maintenance check at 50 flight hours intervals. The works are within the scope issued in the checklist INSPECTION AFTER FIRST 25 FLIGHT HOURS / PERIODIC INSPECTION AFTER 50 FLIGHT HOURS.
 - b) 100 hrs inspection – scheduled maintenance check made at 100 flight hours intervals within the scope issued in checklist PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION, column „flight hrs“.

NOTE

During 100 hrs inspection even 50 hrs inspection issued in point a) should be carried out.

- c) Annual inspection – scheduled maintenance check at 12 months intervals within the scope issued in the checklist PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION, column „calendar period“. Annual inspection is considered the 100 hrs inspection. The date of its completion is simultaneously the beginning of new 12 month period and simultaneously the beginning of interval of 100 hrs periodic inspection.

NOTE

During annual inspection even 50 hours inspection issued in point a) should be carried out.

- d) Special works – in the intervals according to the checklist PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION, column „flight hours-spec“ and „calendar period“. Carry out special works during next 100 hrs, or annual inspection.

INSPECTION CHECKLIST

All the inspections mentioned in this chapter are made out in form of checklist.

First column of each checklist table contains number of this manual chapter containing the information and advises on recommended procedures.

The actions prescribed for each 100 hrs or annual inspection are in pertinent column of the checklist tables marked with ring. These works are widened for special works carried out in periods issued in column „spec“.

ALLOWANCE

CAUTION

THE ALLOWANCES DETERMINED FOR INTERVALS BETWEEN INSPECTIONS SHOULD NEVER BE CUMULATED TO DETERMINE THE DATE OF INSPECTION - see NOTE.

1. The allowance according to number of flight hours

flight hrs	25	50	100
allowance	+5	+5	+5

The above issued allowances may be applied only after the finished flight the beginning of which started before the prescribed period of inspection had been reached. It is also applicable if it is necessary to fly to the location of inspection execution. The inspections may be carried out in advance.

NOTE

The 100 hrs inspections should be completed after 105 flight hours (i.e. 100+5 hrs) **at the latest since the last 100 hrs or annual inspection**. Time of operation by which the 100 hrs interval was exceeded, must be included into the interval for another 100 hrs inspection. 5 hrs allowance must not be used for putting-off the next 100 hrs inspection.

The same allowance is valid for other inspections.

2. The allowance applied at anual inspections

The annual inspection should be competed after 12 month at the latest since the last annual innspection with the possibility to use the whole month for carrying the inspection out.

Example:

- annual inspection was completed January 10th, 1998
- the next annual inspection should be completed until January 31th, 1999 at the latest.

The anual inspection may be carried out sooner.

3. The allowance applied for special works

a) Flight hrs	400	500	1000	1500	2000	3000
Allowance	+20	+20	+30	+30	+40	+40

- b) The calendar period (number of years of operation) of issued special works is maximum.

Special works may be carried out sooner.

DEFINITION

- 1) The term „make outer appearance check“ means:

- detection of corrosion
- visual detection of cracks (*)
- detection of failures and deformations
- check of proper joint locking
- detection of loosed or defective rivets
- check of proper bolt tightening
- check of intactness of inslulation of electric cables
- check of intactness of holes and their jackets
- check of play in bearings and hinges

* Recommendation

The magnifying glass used for crack detection should be of 4x power.

- 2) The term „check serviceability“ means turning the instrument or system to operation and verifying the system/instrument serviceability.

EFFECTIVITY: All

INSPECTION AFTER FIRST 25 FLIGHT HOURS

PERIODIC INSPECTION AFTER 50 FLIGHT HOURS

Production number of airplane: _____ Registration Mark: _____

Total flight hours: _____

Chapter	Procedures to be done	Note	Carried out	Supervised
28	FUEL Check out appearance and cleanness of inlet sieve of carburetor; clean sieve (<i>Z 143L airplane</i>). Check out appearance and cleanness of inlet sieve of injector; clean sieve (<i>Z 143Lsi airplane</i>). Make outer appearance check of engine fuel pump. Check engine pump vent to detect fuel or oil.			
71	POWER PLANT Check cleanness, intactness, and operation time of air filter element.	**		
72	ENGINE Check oil tightness of valve rocker arm lids. Check if the engine has not been overheated (Change of cylinder color Perform the engine test			
74	IGNITION Change place of spark plugs (cylinders and position in cylinder). Make outer appearance check of HT cable end pieces. Make outer appearance check of HT cable harness, and HT cable connections to spark plugs and both magnetos.	***		
78	EXHAUST Make outer appearance check of exhaust collectors and noise silencers. Check tightness of cylinder – exhaust pipe coupling flanges.			
79	OIL Check tightness of engine lube system. Make outer appearance check of sieve in oil suction port; clean the sieve. Drain-off the oil and check the oil filter (detection of metal elemens) and fill the oil again. Perform the entry to log book. Perform the engine test (after oil replacement).	****		

EFFECTIVITY: All

05-22-00

page 05 - 17
2011-02-02

INSPECTION AFTER FIRST 25 FLIGHT HOURS

PERIODIC INSPECTION AFTER 50 FLIGHT HOURS

- ** The conditions at which the air filter element should be replaced are issued in Section 71-60-00.
- *** In case the leaded aviation gas with lead content exceeding 0.05 % is used it is recommended to shorten the interval of spark plug replacement to 25 flight hrs.
- **** Follow the engine manufacturer bulletin No. 480 (last issue), or a bulletin by which it has been superseded.

Date _____

Signature _____

INSPECTION AFTER FIRST 50 FLIGHT HOURS

Production number of airplane: _____ Registration Mark: _____

Total flight hours: _____

Chapter	Procedures to be done	Note	Carried out
28	FUEL Make outer appearance check and tightness of airplane fuel system. Clean fuel filter element.		
55	STABILIZER Check locking of nuts fixing the horizontal stabilizer braces.		
57	WING Check proper tightening of panel screws under main fuel tanks. Check proper tightening of panel screws under auxiliary fuel tanks. Check proper tightening of nuts of conical pins of main wing mounts.		

Date _____

Signature _____

EFFECTIVITY: All

05-22-00

page 05 - 19
2011-02-02

PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION

Production number of airplane: _____ **Registration Mark:** _____

Total flight hours: _____ **Inspection made out:** 100 h 1 year

Page 1 of 11

Chapter	Procedures	Flight hrs.		Calendar period		Note	Carried out	Supervised by
		100	spec.	1 year	spec.			
-	PREPARATORY WORKS Check airplane accompanying documentation and record entered to airplane, engine, and propeller logbooks. Check bulletins accomplishment. Check instruments and aggregates with limited service life. Clean cabine and engine, and wash surface of airplane. Remove access port covers and lids to enable inspections.	o o o o o		O O O O				
21	ENVIRONMENTAL SYSTEMS Check serviceability of cockpit heating including its controls and heat exchangers. Check free movement of cockpit heating control. Check serviceability of cabin venting and its control. Check free movement of cabin venting controls.			O O O O				
23	COMMUNICATIONS Check serviceability of communication transceiver and communication with ground station. Test ELT batteries. Check serviceability of ELT. Check fixing of communication equipment. Check outer appearance of antennas and antenna cables, and antenna connection. Check electric harness of communication equipment. Check electric harness shielding. Check power and SRW of communication transceiver. Check service life of ELT batteries. Check outer appearance of static discharge wicks	o o o		O O O O O O O O O		**		
24	ELECTRICAL POWER Check outer appearance and fixing of alternator, tightening of alternator drive belt, and connection of electric harness. Check serviceability of emergency battery. Check fusible cut-out. Check and maintain board battery. Check battery fixing and make sure its surrounding is not traced with electrolite.	o o o		O O O	See Note see Note	*** ***		

* Delete what is not applicable.

** The battery service life is issued in section 05-10-00.

*** Check and maintain the battery if the period of last made maintenance is 3 month. This period may be prolonged to maximum 6 months if ambient air temperature was mostly less than 25°C. The battery fixing and surrounding should be checked in the same period.

EFFECTIVITY: All

PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION

Page 2 of 11

Chapter	Procedures	Flight hrs.		Calendar period		Note	Carried out	Supervised by
		100	spec.	1 year	spec.			
24	ELECTRICAL POWER (continue)							
	Check electric bonding.			o				
	Check and adjust alternator voltage if necessary.			o		*		
	Check board battery capacity.			o				
	Check condition of ELT battery.			o				
	Check capacity of emergency battery.							
	Check emergency battery service life.			o		**		
	Check emergency switches of audio annunciators.			o		*		
25	EQUIPMENT/FURNISHINGS							
	Make outer appearance check of seats.	o		o				
	Check serviceability of seat setting mechanism.	o		o				
	Check serviceability of fwd seat tilting mechanism.	o		o				
	Make outer appearance check and serviceability of seat safety belts.	o		o				
	Check fixing and locking crash hammer.	o		o				
26	FIRE PROTECTION							
	Check service life of board fire extinguisher.			o				
	Make outer appearance check, sealing and fixing of board fire extinguisher.			o				
27	FLIGHT CONTROLS							
	In case there's installed S-TEC system 55 Autopilot, check:							
	a) servos: condition, nuts securing, operation looseness	o		o		*****		
	b) rope tightening: 13 - 17 lbs (60 - 80 N)	o		o		*****		
	c) force for moment couplings overcoming	o		o		*****		
	d) quick disconnection of autopilot	o		o		*****		
	e) disconnection of trim servo	o		o		*****		
	f) condition of electric installation	o		o		*****		
	Check serviceability, and free and correct movement of manual and pedal controls within their full deflections.	o		o				
	Check the outer appearance of flight control elements including control stops, consoles, and pulleys.	o		o				
	Check cables of rudder control.	o		o		****		
	a) broken cable wires mainly in the vicinity of pulleys, b) cable tension..		500					

* This work is recommended.

** The battery service life is issued in section 05-10-00.

*** The calendar service life of first aid tool kit elements should not be expired.

**** Replace cable even if only one cable wire is detected broken.

***** Inspection according to Supplement No. 15 for Z 143 L or Supplement No. 10 for Z 143 LSi

***** Inspection according to Supplement No. 15.1 for Z 143 L or Supplement No. 11 for Z 143 LSi

***** Inspection according to Supplement No. 15 and Supplement No. 15.1 for Z 143 L or Supplement No. 10 and 11 for Z 143 LSi

EFFECTIVITY: All

05-22-00

page 05 - 21
2011-02-02

PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION

Page 3 of 11

Chapter	Procedures	Flight hrs.		Calendar period		Note	Carried out	Supervised by
		100	spec.	1 year	spec.			
28	FLIGHT CONTROLS (continue)							
	Check serviceability of rudder trim tab operation and control	o		o				
	Check serviceability of elevator trim tab:							
	a) tab deflection within its full extent, outer appearance of control cables (broken cable wires),	o		o		*		
	b) tension of control cable.		500					
	Check control of wing trailing edge flaps:							
	a) flap deflection, locking in all the position,	o		o				
	b) make outer appearance check of flap control incl. cables (broken cable wires),	o		o		*		
	c) check flap cable slacking in both wings.	o		o				
	Check play in all flight control system			o				
	Check visually presence of cracks in control element in both wings:							
	a) aileron bell cranks,		3000			**		
	b) wing flap bell cranks.		3000			**		
	FUEL							
	Check outer appearance of caps of over wing fueling receptacles.	o		o				
	Make outer appearance check of pipes, hoses, couplings, fuel selector valve, fuel filter, electric booster pump and fuel primer (if installed on Z 143L only).	o		o				
	Clean fuel filter.	o		o				
	Check untightness of fuel system visually.	o		o				
	Check serviceability of fuel selector valve by turning it to all positions, serviceability of booster pump and primer (if installed on Z 143L only).	o		o				
	Make outer appearance check and fixing bolts of carburetor (Z 143L) or injector (Z 143LSi).	o		o				
	Check outer appearance and fixing of outboard fuel tanks.	o	1500	o		***		
	Check outer appearance and fixing of main fuel tanks through wing inspection port.							
	Check packing of main tank fuel outlet and packing under the tank fuel units of both main fuel tanks through inspection port in wing skin.				5 let			
	Check fuel system venting.			o				
	Check service life of rubber hoses (if in use) and replace expired hoses.			o		****		

* Replace cable even if single cable wire is detected broken.

** Check after wing removal.

*** Without removal of wing panels under the main fuel tanks. Maximum calendar period for check is 5 years.

**** The time of expiry of rubber hoses is issued in section 05-10-00.

EFFECTIVITY: All

PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION

Page 4 of 11

Chapter	Procedures	Flight hrs.		Calendar period		Note	Carried out	Supervised by
		100	spec.	1 year	spec.			
31	INDICATING/RECORDING SYSTEMS							
	Check pressure in bottom web plate of main wing spar.	o		o				
	Check serviceability of light annunciation panel.	o		o				
	Check readability and color marking of instrument scales.	o		o				
	Check outer appearance and fixing of instrument panel.			o				
	Check coupling of hoses, and connecting of electric harness connectors to instruments.			o				
	Make instrument calibration.					*		
32	LANDING GEAR							
	Main Landing Gear							
	Check flight hours, eventually number of landings, to determine eventual landing gear leg and leg mount bolts replacement.	o		o		**		
	Make outer appearance check of main landing gear legs.	o		o				
	Check and remove play, if necessary, in main landing gear mounts.	o		o				
	Check holes of main landing gear mounts with micrometer.		See Note			***		
	Nose Landing Gear							
	Check functional of hydropneumatic shock absorber by swaying of aircraft fuselage (piston rod of damper must move continuous.	o		o		****		
	Check condition of nose landing gear control.	o		o				
	Check locking of nose landing gear fixing nuts.	o		o				
	Check condition of nose landing gear mounts and mounts struts.	o		o				
	Check tightness of hydropneumatic shock absorber and shimmy damper.	o		o				
	Check condition of piston rod cover.	o		o				
	Check fluid quantity and air pressure in hydropneumatic shock absorber.	o		o				
	Check fluid quantity in shimmy damper.	o		o				
	Check condition of hydropneumatic shock absorber.		o			*****		
	Check condition of groove on piston rod (callosity from balls, material roll-up).		o			*****		
	Check condition of aluminium ring for cover fixing.		o			*****		

- * Adapt the calibration period to meet user's country regulations.
- ** The flight hours and number of landings for replacement are issued in section 04-20-00.
- *** Check during each main landing gear removal.
- **** Or max. after 500 landing.
- ***** Performed to every five 100 hours inspection or max. after 2000 landing.

EFFECTIVITY: All

05-22-00

page 05 - 23
2011-02-02

PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION

Page 5 of 11

Chapter	Procedures	Flight hrs.		Calendar period		Note	Carried out	Supervised by
		100	spec.	1 year	spec.			
33	Check length of piston rod extension from value to cover ring (L = 190 ± 1mm).		0		***			
	Check condition of fork fixing and its anchorage.		0		***			
	Check clearances in attachment of hydropneumatic shock absorber piston rod.		0		***			
	Check visually all welds and around the fixing of nose landing gear.		0		***			
	Check cover damper fluid leakage.		0		***			
	Check fluid leakage around the piston rod.		0		***			
	Check filling valve fluid leakage		0		***			
	Wheels							
	Make outer appearance check of fairings of main landing gear.	0		0				
	Check wear – out, inflation, defects, and skidding of tire upon rim.	0		0				
	Check serviceability of wheel bearings.							
	Check rims visually to detect cracks:	0		0				
	a) external surface without tire removal,	0		0				
	b) internal surface.				see Note	*		
	Brakes							
	Check serviceability of brakes, and wear – out of brake disks and friction shoes.	0		0				
	Check outer appearance of brake pipes and hoses.	0		0				
	Check brake tightness and control.	0		0				
	Check serviceability of operation and parking brake.	0		0				
	Check free movement of piston rods of pedal brake units.	0		0		**		
	Check time of expiry of rubber brake hoses, if used, and replace expired hoses			0				
	LIGHTS							
	Check serviceability of internal lighting (cockpit floodlight, placard illumination, auxiliary light).			0				
	Check serviceability of external lighting, (position lights, landing and taxi lights, anti-collision beacon).			0				
	Check electric harness of airplane lighting and outer appearance of light covers.			0				

* Check during each tire replacement.

** Recommended play is between 7 to 12 mm.

*** Performed to every five 100 hours inspection or max. after 2000 landing.

EFFECTIVITY: All

PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION

Page 6 of 11

Chapter	Procedures	Flight hrs.		Calendar period		Note	Carried out	Supervised by
		100	spec.	1 year	spec			
34	NAVIGATION AND PITOT – STATIC							
	Check serviceability of alternate source of static pressure in flight by turning over the static pressure selector.		1000			*		
	Check outer appearance of pitot-static and stall warning system pipes, hoses, and couplings.			o				
	Check time of expiry of rubber hoses, if used, and replace expired hoses.			o		**		
	Check outer appearance and fixing of pitot and stall warning probes, and static vents.			o				
	Check outer appearance and cleanness of water traps.			o				
	Check tightness test of pitot-static and stall warning systems.			o				
	Check free movement of static pressure selector on ground by repeated turning over from end to end stops.			o				
	Check serviceability of transponder.			o		***		
	Check serviceability of navigation equipment using ground simulators, e.g. Bendix-King NAV 402 A, ATC 600 L etc.			o		***		
	Swing the compass.			o				
	Replace projection lamp display from SN3308 (if installed navigation system SN3308)			o		*****		
37	VACUUM							
	Check serviceability of vacuum system:							
	- without tester	o		o				
	- with tester (recommended).		400					
	Check outer appearance and time of expiry of rubber hoses.			o		**		
	Check outer appearance and serviceability of vacuum pump, governor and couplings.			o				
	Check outer appearance and serviceability of vacuum and governor filter elements.	o		o				
52	DOORS							
	Make outer appearance check of sliding cockpit canopy.	o		o				
	Check serviceability opening, sliding, and locking of sliding cockpit canopy.	o		o				
	Check serviceability of canopy jettisoning mechanism.	o		o				

* See TEST FLIGHT RECORD.

** Time of rubber hoses replacement is issued in section 05-10-00.

*** The inspection periods should be adapted and made in accordance with regulations applicable in user's country.

**** -

***** Replace projection lamp of navigation system SANDEL SN3308 after 200 hours or calendar 1 year, whichever comes first.

EFFECTIVITY: All

05-22-00

page 05 - 25
2011-02-02

PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION

Page 7 of 11

Chapter	Procedures	Flight hrs.		Calendar period		Note	Carried out	Supervised by
		100	spec.	1 year	spec.			
53 FUSELAGE	Make outer appearance check of aft fuselage section including auxiliary skid.	o		o				
	Check fuselage latticework including steps.	o		o				
	Check engine, nose landing gear, wing, and fwd and aft seat mounts to detect cracks.	o		o				
	Check external fuselage panels.	o		o				
	Check internal fuselage panels.	o		o				
	Check fwd/aft fuselage mounts and measure the length of mount bolts.		500					
	Measure the holes of main landing gear mounts with micrometer.		2000			*		
55 STABILIZERS	Measure the holes of wing mounts with micrometer..		3000			**		
	Make outer appearance check of stabilizer, and stabilizer struts and mounts including fuselage strut mounts.	o		o				
	Make outer appearance check of elevator, elevator hinges, and trim bar.	o		o				
	Make outer appearance check of fin including its joining with fuselage structure.	o		o				
	Make outer appearance check of rubber and rubber hinges.	o		o				
	Check mass balance of elevator.		1000					
	Measure the holes stabilizer and stabilizer and fuselage strut mounts.		3000			***		
56 WINDOWS								
	Check glazing of sliding cockpit canopy and fixed canopy to detect cracks and defects	o		o				

* After the main landing gear removal.

** After the wing removal.

*** After the stabilizer removal.

EFFECTIVITY: All

PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION

Page 8 of 11

Chapter	Procedures	Flight hrs.		Calendar period		Note	Carried out	Supervised by
		100	spec.	1 year	spec			
57	WINGS							
	Make outer appearance check of wing skin, wing tips, access port doors and wing panels under the main fuel tanks.	o		o				
	Make outer appearance check of all the wing mounts and locking conical pin nuts of main wing mounts.	o		o				
	Make outer appearance check of ailerons and flaps including hinges and hinges and mounts.	o		o				
	Make outer appearance check of mass balance of ailerons.	o		o				
	Check fixing of nuts of conical pins of main wing mounts.		300					
	Make outer appearance check of conical pins and bushing of main wing mounts.		3000			*		
	Measure the holes in main wing mounts with micrometer.		3000			*		
	Check play of rolled in bordering bushing of aft wing mount articulated bearing.		3000			*		
	Check visually web and flange plates of main wing spar between ribs No. 1 and 2.		3000			*		
61	VRTULE							
	Check propeller blade play in blade suspension: in blade pitch setting around vertical axis, and at the blade tips.	o		o				
	Make outer appearance check of propeller blades, propeller spinner and propeller flange.	o		o				
	Check fixing of fixing bolts with nuts and locking the nuts with stainless steel safety wire.	o		o				
	Check the propeller tightness in the area of propeller hub and blade roots.	o		o				
	Check locking of the nuts of fine blade pitch stops and leaning the fwd propeller hub plate upon these nuts: the plate should lean upon the nuts without any play.	o		o				
	Make outer appearance and serviceability check of propeller control: free movement and correct travel.	o		o				
	Check visually flat springs fixing the fwd end of teflex cable to detect cracks or deformations.	o						
	Check fixing of fwd tube of teflex cable to the bushing passage through firewall: the nut should be locked, the distance of checking pit upon the tube from the face of fwd bushing is within required range (<i>Z 143L airplane</i>).	o	500					
	Make outer appearance check of bowden cable (<i>Z 143LSi airplane</i>).		500					

* After the wing removal.

EFFECTIVITY: All

05-22-00

page 05 - 27
2011-02-02

PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION

Page 9 of 11

Chapter	Procedures	Flight hrs.		Calendar period		Note	Carried out	Supervised by
		100	spec.	1 year	spec			
71	POWER PLANT							
	Make outer appearance check of engine cowlings.	o		o				
	Make outer appearance and serviceability check of engine cowling locks.	o		o				
	Make outer appearance check of engine mount structure.	o		o				
	Make outer appearance check of rudder dampers to detect deformation, defects, and cracks.	o		o				
	Treat the engine mount dampers with suitable agent preventing rubber aging.	o		o				
	Make outer appearance check of firewall and instrument fixing to it.	o		o				
	Measure the holes in engine mount with micrometer.		See Note			*		
	Make flaw detection of engine mount structure.		Max. 3500			*****		
	Check cleanliness of air filter element.			o				
72	ENGINE							
	Check if the engine cylinder cooling ribs are not broken or broken off.	o		o				
	Make outer appearance check and fixing of accessories installed upon the engine.	o		o				
	Check cylinder compression.	o		o		**		
	Check cylinder valves.		400			***		
	Clean the space of fwd section of crankshaft.		400			****		
74	IGNITION		See Note					
	Removal spark plug from the engine and check outer appearance and setting of spark plug electrodes.	o		o				
	Make outer appearance check of ignition magnetos, breaker contacts, presence of oil in breaker contact space, ignition advance setting.	o		o				

- * Check of holes during each engine removal.
- ** The number of Service Bulletin for cylinder compression measurement is issued in section 72-10-00.
- *** It is suitable to shorten the period of cleaning to 100 flight hours if the leaded gas with volumetric content exceeding 0.05 % is in use.
- **** On condition (section 72-10-00).
- ***** Replace periods of the air filter element are issued in section 71-60-00.

EFFECTIVITY: All

PERIODIC INSPECTION AFTER 100 FLIGHT HOURS AND AFTER 1 YEAR OPERATION

Page 10 of 11

Chapter	Procedures	Flight hrs.		Calendar period		Note	Carried out	Supervised by
		100	spec.	1 year	spec			
75 AIR	Make outer appearance check of carburetor heating system (<i>Z 143L airplane</i>).	o		o				
	Check the heat exchanger of the noise silencer R.H. and the heating outlet, the interior and vortex inserts inclusive : condition, cracks, loosen or missing rivets (<i>Z 143L airplane</i>).	o		o				
	Make check of outer appearance and free movement carburetor heating control (<i>Z 143L airplane</i>).	o		o				
	Check flat springs fixing the front pipes of teflex control cables to detect cracks, deformations.	o		o				
	Make outer appearance check of internal covers and deflectors, including rubber sealing, ensuring the engine cooling.	o		o				
	Check correct cooling of engine instruments.	o		o				
	Check fixing of fwd tube of teflex control cable of carburetor heating to the bushing in firewall: the nut should be locked, the distance of check pit in tube from the face of fwd insertion piece should be within required limits (<i>Z 143L airplane</i>).		500					
76 ENGINE CONTROLS	Make outer appearance check, free movement, and correct travel of throttle and mixture controls within full range of movement.	o		o				
	Check flat fixing springs of fwd teflex control cable tubes to detect cracks and deformation.	o		o				
	Check fixing of fwd tubes of teflex cables to the bushing in firewall: the nuts should be locked, the distance of check pits in tubes from the face of bushing fwd insertion piece should be within required limits.		500					
	Make outer appearance check of bowden cable (<i>Z 143LSi airplane</i>).		500					
77 ENGINE INDICATING	Check outer appearance and serviceability of engine instruments.	o		o		*		
	Check fixing of engine instruments sensors.	o		o				
	Make outer appearance check of rubber hoses of manifold, fuel and oil pressure measurement.	o		o				
	Check service life expiry of above named rubber hoses.			o		**		
79 OIL	Make outer appearance check of hoses, oil separator, oil radiator and drain valve.	o		o				
	Make outer appearance check of oil system venting.	o		o				
	Check service life expiry of rubber hoses, if used.			o		**		

* Make check according to section 31-10-00.

** The service life needed for rubber hoses replacement is issued in section 05-10-00.

EFFECTIVITY: All

05-22-00

page 05 - 29
2011-02-02

Page 11 of 11

Signature

05-22-00

ENGINE TEST

Production number of airplane: _____ Registration Mark: _____

Total flight hours: _____ Date of previous inspection: _____

* Actions made during engine test	Engineer: Approved Yes - No	Supervisor: Approved Yes - No
Start and warm up the engine (Z 143L or Z 143LSi Airplane Flight Manual, Chapter 4).	—	—
Check propeller control: a) Set fine blade pitch angle (max. propeller speed) and adjust 1,800 RPM by throttle lever. b) Set propeller speed by slow movement of propeller control to 1,600 RPM and then set propeller speed to 1,800 RPM again. Repeat this action three times and make sure the change of propeller speed is continuous.		
Check operation of propeller governor: a) Set propeller to fine pitch angle (max. propeller speed) and adjust speed to 2,200 RPM by throttle lever. Reduce propeller control to 2,100 RPM. b) Increase manifold pressure by throttle lever for 3 in Hg (10 kPa); the original speed should remain the same.		
Check engine ignition: a) Set propeller to fine pitch angle (max. propeller speed) and adjust 2,000 RPM. b) Set magneto control switch from L + R to L position and record indicated RPM.: $n_L = \text{_____}$ RPM. c) Set magneto control switch from L + R to R position and record indicated RPM: $n_R = \text{_____}$ RPM. d) Compare measured RPM with those permitted: - Drop of RPM after turning the switch from L+R to R or L may be maximum 175 RPM. - Difference between n_L and n_R speed may be maximum 50 RPM.		
Check of carburetor heating (Z143L airplane): a) Turn carburetor heating for about 5 seconds and check indication of carburetor thermometer - the temperature should increase. b) Turn carburetor heating off - the temperature should decrease		
Cut off the engine (Z 143L or Z 143LSi Airplane Flight Manual, Chapter 4).	—	—
Date and signature		

* Maintain requirements of Z 143L or Z 143LSi Airplane flight Manual chapter 4, for engine test.

EFFECTIVITY: All

05-22-00

page 05 - 31
2011-02-02

INTENTIONALLY LEFT BLANK

RECORD ON FLIGHT TEST

2. In – flight and Post – Landing Check

Page 2 of 4

Procedures	Approved Yes – No
<p>Take off and Climb Check operation of wing flaps during retraction. The engine cowlings are not vibrating: i.e. the nose wheel is balanced well The oil and fuel pressures, and cylinder head temperature are within operational limits. The engine runs smoothly.</p> <p>V_{NE} never – exceed Speed The flight is never exceed speed and transition to straight – and – level flight does not exhibit excessive vibration.</p> <p>Stall: Engine mode of operation from idle run to take–off engine mode, all possible position * Wing flaps retracted, landing position, all possible positions * The aircraft stalls symmetrically, the stall audio warning annunciation is turned on about 9 to 18 km/h (5 to 10 kt) before reaching actual stalling speed.</p> <p>Alternative Static Pressure Source ** Changing over from main to alternative static pressure source may cause ± 1 kt (about ± 2 km/h) change of indication of airspeed indicator.</p> <p>In – Flight Maneuvers *** The engine runs in all controlled maneuvers smoothly. Max. engine take-off run are in: - max. 3 sec, max. 2520 ot/min. for Z 143L aircraft - max. 3 sec, max. 2830 ot/min. for Z 143LSi aircraft The oil and fuel pressures are within operational limits.</p> <p>Engine Acceleration and Propeller Control (Altitude 1640 ft, 500 m; airspeed 140 kt; 260 km/h) If the throttle lever is shifted from idle run position to take off position within 1 second the engine take off run: - max. 3 sec, max. 2520 ot/min. for Z 143L aircraft - max. 3 sec, max. 2830 ot/min. for Z 143LSi aircraft If the ± 25 kt (± 40 km/h) change of airspeed occurs the engine speed may vary for ± 50 RPM.</p> <p>Fuel System The engine run, during fuel valve change over between L, R, L + R positions, should be smooth.</p> <p>Cockpit The optical distortion caused by cockpit glazing should be within limits maintaining and ensuring the flight safety. The cockpit venting is controllable in full extent. The cockpit heating is controllable and the cockpit is fed with warm clean air without any trace of exhaust gas.</p>	

* Check and adjustment according to subsection 34-12-00.

** Check and adjustment according to subsection 34-11-00.

*** The allowed flight maneuvers are issued in Z 143L or Z 143 LSi Flight Manual, Chapter 2.

EFFECTIVITY: All

RECORD ON FLIGHT TEST

2. In – Flight and Post – Landing Check - continued

Page 3 of 4

Procedures	Approved Yes – No
<p>Instruments Turn-and-bank indicator: - pointer moves continuously without seizing, the pointer should stay motionless after four swings when returning from any position to neutral. Compass: The compass deviation in four directions: e. g. in runway direction and perpendicularly to it should not exceed $\pm 5^\circ$.</p> <p>COMM/NAV Equipment Radiostation: - range, audibility, and modulation correspond with the instrument specification, the instrument distortion and jamming is under the operational level of squelch control. ADF/Flug Gate Compass: - revolting of compass card manually by Heading Knob is continuous, during beacon flight – over, within 12 seconds, the pointer movements (360°) continuous. The other navigation equipment: To be checked if provided and necessary.</p> <p>Landing The aircraft is in landing configuration controllable well. The wing flaps are unlocked and extended without excessive load. Locking of wings flaps in present positions is reliable. Check engine idle run after landing: - check engine 600-650 RPM - oil pressure min. 170 kPa (25 p.s.i.) - fuel pressure min. 83 kPa (12 p.s.i.)</p> <p>NOTE</p> <div style="text-align: right; margin-top: 100px;"> _____ Signature </div>	

EFFECTIVITY: All

05-22-00

page 05 - 35
 2011-02-02

RECORD ON FLIGHT TEST

3. The Values Measured in Flight

Page 4 of 4

Mode of Operation	Theoretical data for 1080 kg (2380 lb) take off mass under ISA	Measured Values
Weather Condition	Air pressure QNH HPa; in.Hg*	
	Teplota vzduchu na zemi °C; °F*	
Climb	Engine speed 2400 ot/min	
	Maximum manifold pressure max. in.Hg	
	Max. cylinder head temp. max. 260°C; 500°F*	
	Max. oil temperature max. 118°C	
	Oil pressure 380-650kPa; 55-95 p.s.i.*	
	Fuel pressure 4-55 kPa; 0,5-8 p.s.i. (Z 143L)* 96-310 kPa; 14-45 p.s.i. (Z 143LSi)*	
Cruise speed in straight – and – level flight (altitude 500 m; 1640 ft ISA)	Minimum airspeed min. 211 km/h; 114 knots*	
	Engine speed 2200 ot/min	
	Manifold pressure 25 in.Hg	
Maximum speed in straight – and – level flight (altitude 500 m; 1640 ft ISA)	Oil pressure 380-650 kPa; 55-95 p.s.i.*	
	Fuel pressure 4-55 kPa; 0,5-8 p.s.i. (Z 143L)* 96-310 kPa; 14-45 p.s.i. (Z 143LSi)*	
	Minimum speed min. 230 km/h; 124 knots*	
	Engine speed 2400 ot/min	
	Manifold pressure max. in.Hg	
Never exceed speed (take – off engine mode)	Engine speed V _{NE} max. 306 km/h; 165 knots*	
	Maximum airspeed max. 2400 ot/min	
Stalls (engine idle run)	Stalling speed V _{SO} (wing flaps in LANDING position) max. 102 km/h; 55 knots*	
	Stall warning (9 to 18 kph; 5 to 10 knots above actual stalling speed)	
Flight maneuvers	Airspeed (max. 3s) max. 2520 ot/min (Z 143L) max. 2830 ot/min (Z 143LSi)	
	Oil pressure 380-650 kPa; 55-95 p.s.i.*	
	Fuel pressure 4-55 kPa; 0,5-8 p.s.i. (Z 143L)* 96-310 kPa; 14-45 p.s.i. (Z 143LSi)*	

* Cancel unused units

Test pilot

Date

Representative of repair station

EFFECTIVITY: All

ON – CONDITION MAINTENANCE

The on – condition maintenance of the airplane is carried out mostly after unusual operational occasion, that cause damage to airplane or deterioration of airplane flight features.

The procedures described further may be changed and/or supplemented according to range of detected damage in details.

EFFECTIVITY: All

05-50-00

page 05 - 37
2011-02-02

HEAVY / VERY HEAVY LANDING

A. HEAVY LANDING

The airplane should be checked in below described range in case neither the contact of main landing gear mud guards with bottom wing skin was detected nor the propeller and/or fuselage bottom skin hit the runway.

Range of inspection:

- a) Remove main and nose landing gears.
- b) Make outer appearance check of main and nose landing gear mounts to detect cracks, hole intactness, i. e. no deformation or dents.
- c) Check of main landing gear:
 - Check main landing gear legs by magnetic – particle method of flaw detection
 - Check intactness. i. e. no deformation and dents, of holes on main landing gear mounts as well as intactness of mount bolts, i. e. no cracks or deformation.
- d) Check tightness of airplane brake system.
- e) Check of nose landing gear:
 - Check tightness and intactness, i. e. no deformation, of nose landing gear oleo shock absorber.
 - Check intactness, i. e. no deformation of braces and holes, and no cracks, of nose landing gear braces and intactness of fixing bolts, i. e. without cracks or deformation.
- f) Check intactness of nose landing gear tire that may be damaged mainly upon side walls.

B. VERY HEAVY LANDING

The range of inspection described below is made after the heavy landing when the main landing gear mud guard hit was visually detected upon the bottom skin of wings, or the propeller or bottom fuselage skin touched the ground.

Range of inspection:

- a) Make airplane levelling, see section 08-20-00 and compare the results of levelling with data received during last levelling. In case the contacts deformation was detected it is necessary to get in touch with airplane manufacture or authorized repair shop.
- b) Take necessary steps to carry out repairs according to detected damage of bottom wing skin.
- c) Remove main and nose landing gear.
- d) Check airplane according to part HEAVY LANDING points b), d), e) and f).
- e) Make 100-hrs maintenance of fuselage, wing, airplane controls, tail unit, and propeller. Hand the defective propeller to repair shop or replace it with a new one.
- f) Replace main landing gear legs and its fixing mount bolts with new ones.
- g) Remove landing gear wheels and check them to detect possible defects.
- h) Check the engine mounts assy to detect deformation of braces and occurrence of cracks.
- i) Carry the exceptional board battery maintenance according to section 05-53-00 and check intactness of this fixing.

EFFECTIVITY: ALL

EXCESS OF MAXIMUM LOAD LIMITS

NOTE

The excess of limit G – loads may occur in incorrectly made flight maneuvers or during flight through heavy turbulence.

1. Survey of G - loads

Class N (standard): $n_{\max} = + 3.8$; $n_{\min} = - 1.52$

Class U (training): $n_{\max} = + 4.4$; $n_{\min} = - 1.76$

NOTE

The detection of g load is made by reading the accelerometer provided with two auxiliary pointers located in instrument panel.

Maximum take – off weight of N and U – classes is issued in the Z 143 L or Z 143 LSi Flight Manual, Chapter 2.

2. Procedure of check

After the flight the above listed G – load was exceeded proceed as follows:

a) Remove accelerometer and check operation accuracy at:

- vertical plane of scale and 0 up: pointer should indicate $+ 1 \text{ g} \pm 0.2 \text{ g}$;
- vertical plane of scale and 0 down: pointer should indicate $- 1 \text{ g} \pm 0.2 \text{ g}$;
- horizontal plane of scale: pointer should indicate $0 \text{ g} \pm 0.2 \text{ g}$

The damage accelerometer send to repair or replace..

b) Carry out the airplane levelling as recommended in section 08-20-00.

c) Compare results of levelling with those received during last levelling. In case the constant deformation was detected get in touch with airplane manufacturer or authorized repair shop.

d) Check the board battery and its fixing.

EXTRAORDINARY BATTERY MAINTENANCE

The exceptional board battery maintenance is carried out according to “Inspection and Maintenance of Board Battery” and “Board Battery Capacitance Test” of section 24-32-00 in following cases:

1. After mechanical damage of board battery or in case of suspicion of that, e. g. after fall of battery from low height, after hard hit of battery, and after very heavy landing.
2. After excessive electric battery load, e. g.:
 - a) Total time of engine start – up from board battery exceeded 90 seconds.
 - b) Short circuit of battery outlet cables and switches occurred.
 - c) In case the current exceeded 40 A and its actual value is unknown.
3. After the deep battery discharge:
 - a) After alternator failure in flight.
 - b) In case of board network failure.
 - c) In case the battery was used for feeding the appliances out of airplane.