M.I.C.M. - C.N.I.A.R.
INTREPRINDEREA DE CONSTRUCTII AERONAUTICE
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Căsuţa Poştală nr. 198

MANDATORY SERVICE BULLETIN

IS-28B2/E0-13

APPROVED BY:	DEPARTMENT OF CIVIL AVIATION with no. 2639/06.03.1985
PRODUCT:	IS-28B2 glider
OBJECT:	Safe life and service life increase
COMPLIANCE:	Endurance studies of the manufacturing plant and servicing experience

Revised translation: January 1987

DATE: 05.02.1985

1. PLANNING INFORMATION

A. Aplicability

This bulletin is applied to all the IS-28B2 gliders.

B. Reason

Increase of gliders safe life.

C. Description

This bulletin modifies the total safe life and service life of the glider, as follows:

- total safe life: 10.000 flight hours (or 30.000 landings);
- total service life: 20 years;
- safe life until the first general revision and between general revisions: 750 flight hours (or 3000 landings);
- service life until the first general revision and between general revisions: 6 years.

D. Compliance

Endurance studies of the manufacturing plant and experience concerning the IS-28B2 glider servicing.

E. Accomplishment

The bulletin shall be applied by:

- the user, for gliders under servicing;
- the manufacturing plant, for gliders under stockage or manufacturing.

F. Material - cost and availability

None.

G. Tooling

None.

H. Weight and balance

Not affected.

I. References

The report compiled by the manufacturing plant, concerning the study of gliders servicing behaviour and endurance tests.

J. Documents affected

The IS-28B2 Flight and Maintenance Manual, 3rd issue and 2nd issue are amended by the pages appended to the present bulletin.

2. USING INSTRUCTIONS

A. Work preparation

None.

B. Application

The modified pages of the IS-28B2 Flight and Maintenance Manual 3rd and 2nd issue shall be inserted.

C. Servicing indications

The following shall be complied with during servicing:
- total safe and service life;
- safe and service life between general revisions.

3. MATERIAL INFORMATION

A. Material list

None

B. Tooling list

None.

C. Supply indications

None.

4. IDENTIFICATION

The bulletin application shall be registered in the glider log book.

5. APPENDICES

- Amendment no.19 to the IS-28B2 Flight and Maintenance Manual, 3rd issue.
- Amendment no.14 to the IS-28B2 Flight and Maintenance Manual, 2nd issue.

Part no.	Amended page	Revision nature	Data of approval	Data of insertion	Signature
18.	0.3J; 6.25A 6.26A;6.28A 6.29A;	Rudder and elevator control modification	31.03.83		
19.	0.3K; 6.9B 6.10B;6.14C 6.15B.	Safe life increase.	6.03.85		
21.	0.3.M; 6.29B;	Modification of rudder control cable tension.	14.05.1987		
22.	0.2.2;0.3N 1.0.B;1.1.A 1.2.A;2.0.B 2.5.B;2.8.B 6.03/B; 6.31.A; A.8.1.A;	Glider fitting with air brake on upper-side and lowerside beginning with serial no.322.	1.04.88		
23.	A.9.1.	Front instrument panel equipment (Optional-Hungary)	29.07.1988		
24.	0.3.0 6.10.C 6.25.B 6.7.A	Additional indications for controls and vital points check.	30.04.1988		
25.		Increase of service life betweem two overhauls, from 8 to 12 years (for Romania only)			
26.	2.2.A. 2.5.C.	Increase of maximum weight for the gliders serial no. 342 and343 delivered to Hungary. 344	6.05.1987		
27.	6.45.A	Exceding of the leveling sizes tolerance for gliders S/N 343 and 344.	29.11.89		

*Only for Romania (Amendament 20).

WARNING !

The stabilizer shall be folded only after mounting the manoeuvring wheel.

6.3. MAINTENANCE WORKS

6.3.1. UNPERIODICAL INSPECTIONS

6.3.1.1. The daily inspection - is executed whenever the aircraft is prepared for flight activity.

This inspection is executed in compliance with paragraph 4.1.

6.3.1.2. The occasional inspection - is executed whenever abnormal events occurred (transport blows, landings outside the airfield, abnormal operation, etc).

When executing these inspections particularly insist on elements having been stressed or to which damages or abnormal operation were noticed.

After excessive stresses, the inspection shall be executed carefully to all vital elements (wing junction, tails and adjacent structures fittings, controls connection to control surfaces) inspecting at the same time the painting and skin condition which could indicate the possible local overstresses.

6.3.2. INSPECTIONS AND REVISIONS SUCCESSION

The maintenance works and the glider revisions have the following periodicity :

19

C= inpection after 100 flight hours.

R_1=revision after 200 flight hours or one year of operation.

R_2=revision after 400 flight hours or 4 years of operation.

R_G=general revision afer 750 flight hours or 6 years of operation, or 3000 landings.

During inspection after 100 hours execute a minute inspection of glider and greasing to the points indicated in this chapter diagrams.

During revision after 200 hours or a year of operation execute all the operations as for 100 hours and measure the control surfaces deflections and controls clearances.

The overhaul is executed by the manufacturing plant or by a specialized and authorized workshop, according to the approved Repair Manual.

19 The total safe life of the glider is 10,000 flight hours or 30,000landings (20 years) .

The only assemblies included in the glider construction, which have a limited safe life are the releases.

According to TOST specifications, the releases are dismounted and sent to revision after 2000 starts and 3 years of operation. For aircraft instruments produced by PZL company no total life is indicated.

24 CAUTION : In case of control dismounting or cables replacement, a special attention shall be paid to observe the cables crossing!

6.3.3. ADJUSTMENT

The adjustments executed by the manufacturing plant shall be checked at yearly revisions (or 200 flight hours).

The control surfaces deflections shall be measured in order to check the values indicated in paragraph 6.5.1. If these do not meet the tolerances, execute the adjustments again.

The total control clearances shall be less than the following values : - to control column (measured at end) for; elevator control - 4 mm ; ailerons control - 4 mm ;
- to rudder bar pedals 5 mm.

To measure the clearances, lock the control surfaces and measure the control lever extremity removal, in the direction of control movement.

6.4. SYSTEMS MAINTENANCE

6.4.1. MAINTENANCE WORKS PERIODICITY

	According to the indications	After every 750 hours	After every 400 hours	After every 200 hours	After every 100 hours
LANDING GEAR					
1. Visual check of landing gear holder and riveting to structure.					*
2. Visual check of wheel fork (distortion, cracks, corrosion).					*
3. Visual check of shock-absorber condition (greasing).					*
4. Inspection of wheels (main wheel and tail wheel), bearings, tyres.					*
5. Wheel brake (greasing of control and brake shoes).					*
6. Inspection of wheel fork-to-landing gear holder joint, by dismounting.				*	
7. Inspection of wheel fork-to-shock-absorber, shock-absorber fork joint, by dismounting and check.				*	
8. Inspection of braking surface on wheel hub.				*	
AIRCRAFT					
1. Visual check of glider exterior.					*
2. Visual inspection of glider structure condition.				*	
3. Visual check of skin junction areas on fuselage and wing.				*	
4. Visual check of wing junction (greasing).				*	
5. Wear check of wing-to-fuselage junction bolt.			*		
6. Visual check of tails junction (greasing).				*	
7. Cleaning of wing junction fittings with fine abrasive paper and greasing with vaseline.			*		
8. Plexiglass canopy (visual inspection).					*
9. Canopy hinges - inspection, greasing.				*	
10. Wear check of horizontal tails attachment bolt.			*		
11. Seats, padding, - adjustment, belts attachment.				*	
12. Dismounting of control, surfaces, inspection of hinges clearances.			*		
13. Visual check of instrument panel shock-absorbers, instruments, markings, labels.				*	
14. Replacement of instrument panel shock-absorbers.			*		
15. Compass trim.					*
16. Check of rubber or plastic pipes and, if necessary, replacement.				*	
17. Air scoops, pipes, sealings, wirings.				*	
18. Replacement of rubber elements to Braunschweig system.			*		
19. Water setter (Braunschweig) - drainage.				*	
20. Radio, antenna, wiring (if any)				*	
21. Check of board instruments in the workshop.			*		
CONTROLS					
1. Visual inspection of cables, pulleys, bearings, greasing, air brake lock turnstiles lock.				*	
2. Visual inspection of stick, under floor, greasing				*	
3. Visual inspection for trim tab condition and control line (greasing)				*	

	According to the indications	After every 750 hours	After every 400 hours	After every 200 hours	After every 100 hours
4. Visual inspection of joints, hinges, greasing.					*
5. Visual check of rudder pedal assembly, greasing.				*	
6. Skin and control surfaces structure.				*	
7. Visual inspection of releases, greasing.				*	
8. Dismounting of structure controls, replacement worn out elements, greasing, inspection.			*		
9. Inspection of fabric, control surfaces and, if necessary, replacement.		*			

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1. The works indicated in this column shall be performed after 200 flight hours or at least once a year , preferably at the beginning of the flight season.
2. The landing gear shall also be checked every time an abnormal landing occured (forced or heavy landing).

3. The trim shall be performed after every 1000 hours or after every installation of new instruments on the instrument panel, particularly those creating electromagnetic fields.

4. The works shall be carried out according to TOST maintenance and servicing instructions , type E 72 and E 73.
5. The check shall be carried out during the overhaul at 750 hours or if wrong indications occur.

19 NOTE: After carrying out the operations during the overhaul at 750 hours the cycle is repeated, till the total safe life is reached.

6.4.2. RELEASE MAINTENANCE

The control is transmitted through cable (see fig. 6-6).
This control maintenance consists in greasing to the points indicated in the diagram and checking the cable and connections integrity. At inspections, clean and wash the two releases, then grease with mineral oil, using a pipette. For other maintenance works the TOST instruction shall be consulted.

WARNING!

The perfect release operation is very important for the safety of flight.

6.4.3. CANOPY MAINTENANCE

Checking starts with a jettison simulation on the ground.

Item Number	Pages containing alterations	Nature of alteration	DATE approved	DATE Changing the affected page.	Signature
12.	26.C	Time increasement between 2 overhauls.	21.09.1982		
13.	15.A ; 23.A; 36.A;	Flying controls inspection	07.12.1982		
14.	26D; 36B; 37A;	Safe life increasing			
15.		Only in Romania			
16.	22.1; 26.F				
17.		Only in Romania			
18.		Only in Romania			
19.	9D;9.1;9.2; 9.3;9.4;16.D; 16.1;17.C;	Completion of weight and balance calculation			

7.5. INSPECTION AND REVISIONS SUCCESSION

The Maintenance works and the glider revisions have the following periodicity :

14 C= inspection after 100 flight hours.
R^1_1=revision afer 200 flight hours or one year of operation
R_2=revision afer 400 flight hours or 4 years of operation
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During inspection after 100 hours execute a minute inspection of glider and greasing to the points indicated in this manual.

During revision after 200 hours or a year of operation
9 execute all the operations as for 100 hours and measure the control surfaces deflections and controls clearances.

The overhaul is executed by the manufacturing plant or by a specialized and autherized workshop, according to the approved Repair Manual.

14 The total safe life of the glider is 10000 flight hours or 30,000 landings (20 years).

The only assemblies included in the glider construction, which have a limited safe life are the releases.

According to TOST specifications, the releases are dismounted and sent to revision after 2000 starts and 3 years of operation. For aircraft instruments produced by PZL company no total life is indicated.

7.6. AIR SUPPLY THE SHOCK-ABSORBER

If shock absorber losses liquid it must be sent to a specialised workroom for revision.

When shock absorber has located air and doesn't work right it could be air supplied as follows :

- ensure shock absorber full extension (suspended sail plane) ;
- unscrew the cover located inside cockpit under the backsedt; (wheel cover).

WARNING : Do not use oxygen supply.
When filling it may blow-up.

MAINTENANCE WORKS PERIODICITY

	According to the indications	After every 750 hours	After every 400 hours	After every 200 hours	After every 100 hours
LANDING GEAR					
1. Visual check of landing gear holder and riveting to structure.					*
2. Visual check of wheel fork (distortion, cracks, corrosion).					*
3. Visual check of shock-absorber condition (greasing).					*
4. Inspection of wheels (main wheel and tail wheel), bearings, tyres.					*
5. Wheel brake (greasing of control and brake shoes).					*
6. Inspection of wheel fork to landing gear holder joint, by dismounting.				*	
7. Inspection of wheel fork-to-shock-absorber, shock-absorber fork joint, by dismounting and check.				*	
8. Inspection of braking surface on wheel hub.				*	
AIRCRAFT					
1. Visual check of glider exterior.					*
2. Visual inspection of glider structure condition.				*	
3. Visual check of skin junction areas on fuselage and wing.				*	
4. Visual check of wing function (greasing).				*	
5. Wear check of wing-to-fuselage junction bolt.			*		
6. Visual check of tails junction (greasing).				*	
7. Cleaning of wing junction fittings with fibe abrasive paper and greasing with vaseline.			*		
8. Plexiglass canopy (visual inspection).					*
9. Canopy hinges - inspection, greasing.				*	
10. Wear check of horizontal tails attachment bolt.			*		
11. Seats, padding, - adjustment, belts attachment.				*	
12. Dismounting of control, surfaces, inspection of hinges clearances.			*		
13. Visual check of instrument panel shock-absorbers, instruments, markings, labels.				*	
14. Replacement of instrument panel shock-absorbers.			*		
15. Compass trim.					*
16. Check of rubber or plastic pipes and, if necessary, replacement.				*	
17. Air scoops, pipes, sealings, wirings.				*	
18. Replacement of rubber elements to Braunschweig system.			*		
19. Water setter (Braunschweig) - drainage.				*	
20. Radio, antenna, wiring (if any)				*	
21. Check of board instruments in the workshop.			*		
CONTROLS					
1. Visual inspection of cables, pulleys, bearings, greasing, air brake lock turnstiles lock.					*
2. Visual inspection of stick, under floor, greasing				*	
3. Visual inspection for trim tab condition and control line (greasing)				*	

	According to the indications	After every 750 hours	After every 400 hours	After every 200 hours	After every 100 hours
4. Visual inspection of joints, hinges, greasing.				*	
5. Visual check of rudder pedal assembly, greasing.				*	
6. Skin and control surfaces structure.				*	
7. Visual inspection of releases, greasing.					*
8. Dismounting of structure controls, replacement worn out elements, greasing, inspection.			*		
9. Inspection of fabric, control surfaces and, if necessary, replacement.		*			

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1. The works indicated in this column shall be performed after 200 flight hours or at least once a year , preferably at the beginning of the flight season.
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4. The works shall be carried out according to TOST maintenance and servicing instructions , type E 72 and E 73.
5. The check shall be carried out during the overhaul at 750 hours or if wrong indications occur.

14 NOTE: After carrying out the operations during the overhaul at 750 hours the cycle is repeated, till the total safe life is reached.