



AIRWORTHINESS ADVICE NOTICE

TYPE AFFECTED: Jantar and Jantar Standard. All variants.

SUBJECT: Miscellaneous airworthiness information.

BACKGROUND: This AN records airworthiness information that is useful to know.

APPROVED MODIFICATIONS:

1. PZL Bielsko Bulletin BK-10/80 describes the optional installation of removable ballast blocks under the instrument panel on SZD-48-1 Jantar Standard 2's. Kits of parts are available through the Australian Agent.
2. PZL Bielsko Bulletin BK-048/96 describes the optional installation of factory winglets on SZD-48, SZD-48-1 and SZD-48-3 Jantar Standard sailplanes. Copies of the service bulletin may be obtained from the GFA Secretariat. Parts may be obtained from the manufacturer.

MANUFACTURER'S DATA:

Technical Support +48 33 812 50 26, office@szd.com.pl.

The service bulletin lists are available at www.szd.com.pl
They only list modern variants but seem to still support them all.

DEFECTS:

1. Applicable to:
SZD-48 and SZD-48-1 Jantar Std 2;
SZD-48-3 Jantar Std 3;
SZD-42-1 and SZD-42-2 Jantar 2A/2B.

Experience has shown that the locking washer on the connecting pin in the elevator and/or aileron connectors may work loose allowing the control to be connected incorrectly as shown in fig. 1.

Should the locking washer be loose then the defect must be rectified before next flight.

SIGNED:

EXECUTIVE MANAGER AIRWORTHINESS

For and on behalf of:

**THE GLIDING FEDERATION
OF AUSTRALIA**

The defect may be rectified by either replacing the washer with a new part (the best option) or by cold forming the washer until the hole is between 5.980 and 5.990 mm diameter.

Cold forming should be done by either pressing flat between plates or by placing a steel ball (~ 20 mm \varnothing) on the hole and then tapping with a hammer. If using the steel ball method the washer should be turned over and the process repeated.

Before pressing the washer on, the pin diameter should be checked for the correct size of 5.992 to 6.000 mm diameter.

Note: When cleaning the self-aligning ball bearing the pin should not be pressed out of the washer. All cleaning and lubrication of the bearing can be done with the pin in place.

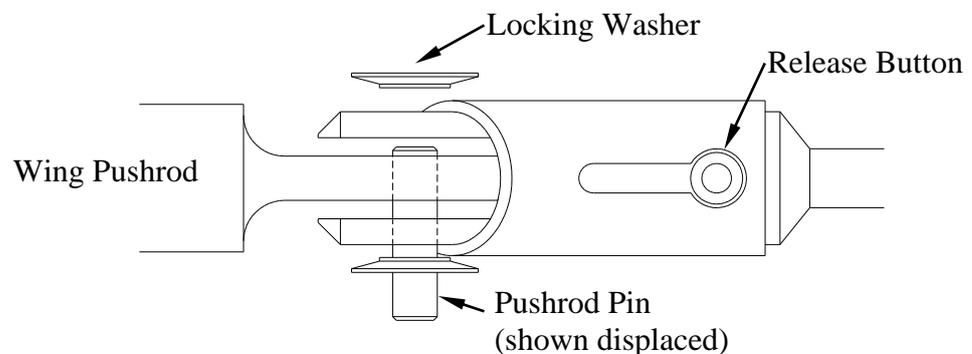


FIGURE 1. LOCKING WASHER SECURITY

There is no guidance in the manual about which way round the connectors should be assembled. To make visual inspection easier GFA recommends the couplings are installed as follows:

1. Ailerons - the button faces backwards
2. Rudder – the button faces forward so it can be seen through the window.

They can be installed either way but should not be.

2. **WARNING** about the release button shown above.

DI has caused unlock and a serious incident – elevator disconnected and pilot was lucky to get down uninjured, glider was written off. There have been other cases where it was found unlocked after DI – probable the DI inspector pushed it in and did not make sure it came out properly!

Make all DIs aware that they can cause a problem while checking these buttons. They must make sure they are properly out, they can be half out and not securely locked. The DI should not push in the button to check it! This is unnecessary and a risk. Rather inspect and ensure it is fully out. Note that the button can be felt when half out and not properly locked. It

is hard to see the aileron connectors but best done with a mirror and light. It can be felt if you know exactly what it is like.

It is important that quick-couplers are installed so they can be visually seen. It is dangerous to install so the button has to be felt to be in safety – this causes a risk of unlocking and incorrect check.

This is an effective lock if checked properly.

3. Scratch marks on the backside of the airbrakes were found on two Standard Jantars (1 and 3). With only little force it was possible to jam the airbrakes when they were extended. So far no incident has been reported but it is strongly recommended to check the airbrakes to prevent possible jamming and perform corrective actions if required (ie. Bevel (file) the corner or slightly bend the sheet metal). See figure 2.

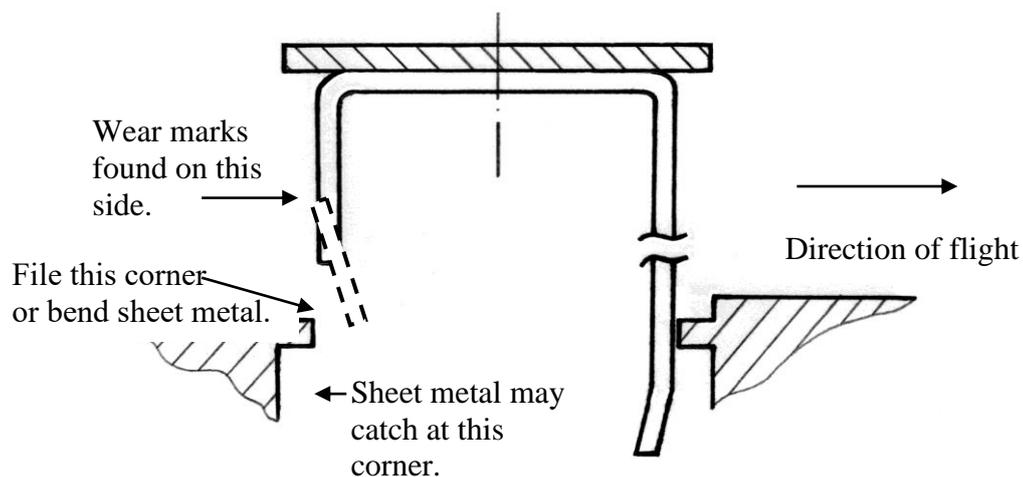


FIGURE 2. POSSIBLE AIR BRAKE JAMMING

4. Jamming of rudder pedals. While strapping into a Std Jantar 2, a pilot found that he could not adjust the rudder pedals forward or aft. The adjustment mechanism appeared to be working but the pedals were jammed at the extreme forward position. Investigation revealed that the pedals were jammed because the heel-rests on both pedals were bent downwards to the extent that the right pedal heel-rest was binding on the cockpit floor. The left pedal was also deformed, but to a lesser extent.

The heel-rests are obviously intended as a receptacle for pilots' heels and they are quite adequate for this purpose. However, there is another problem with the Jantar. Toe-straps are fitted to the tops of the pedals to keep the feet firmly on the pedals under negative G forces. They are rather small and many pilots have difficulty getting their feet fully under the straps. This then means that they cannot get their feet high enough on the pedals and their heels do not fit properly into the heel-rests, but fall into a position where they can (and do) apply a crushing load to the heel-rests. The more one tries to force the feet into the toe-straps, the worse

the problem becomes.

The heel-rests were carefully bent back to their correct position and the pedals were once more free to move. Pilots and inspectors should be made aware of this problem and the pedals checked for adequate floor clearance at regular intervals.

5. Rudder lower bracket:

A towing incident applied high twist load to the rudder. This did little apparent damage except for the rudder turning too much and coming out of the fuselage skin – a known defect addressed in AD224. See attached photo with a piece of red tape for scale.

However, on rudder removal it was found that the lower plywood support bracket had cracked loosening the steel bush. The plywood was stressed by the incident and had cracked radial to the hole. See picture below. The bush was loose and at risk of breaking out of the crack.



A second rudder was found cracked in the same location although it was believed undamaged. Both were repaired by reinforcing by an FRP repair around the plywood crack area to secure the bush again. The balance of

the rudder should not be critically affected as it is in front of the hinge but check as below.

MAINTENANCE TIPS:

1. The allowable centre of gravity positions for the control surfaces of the SZD-42-2 Jantar 2B and the SZD-48-1 Jantar Standard 2 are not recorded in the Maintenance Manual. These figures were included in the Flutter Analysis report and are reproduced here to aid inspectors.

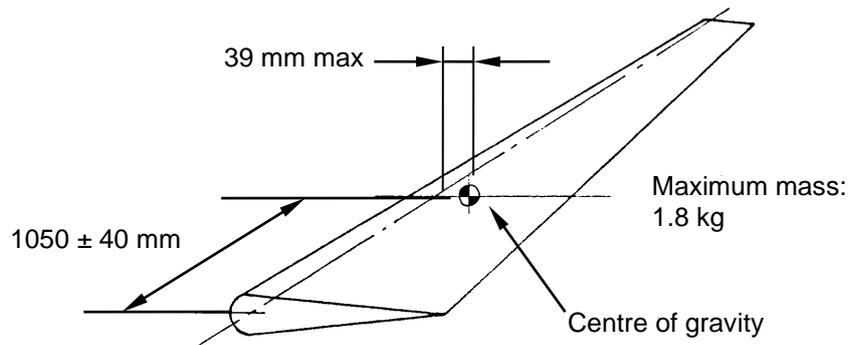


FIGURE 3. SZD-48-1 AILERON BALANCE

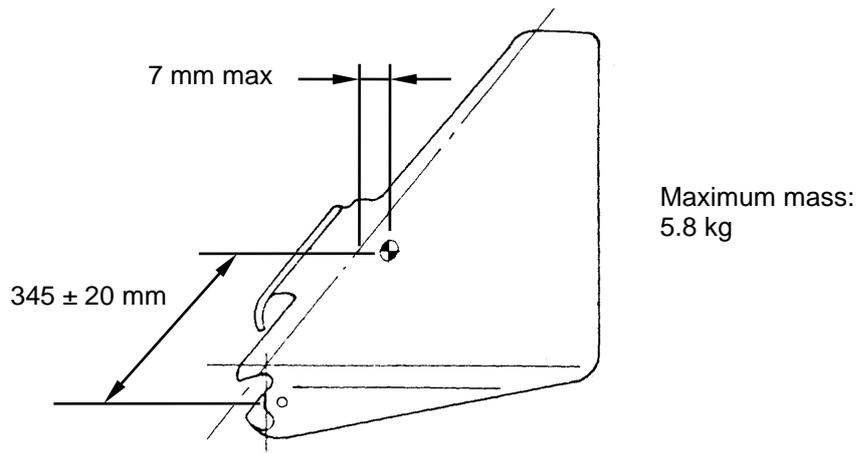


FIGURE 4. SZD-48-1 RUDDER BALANCE

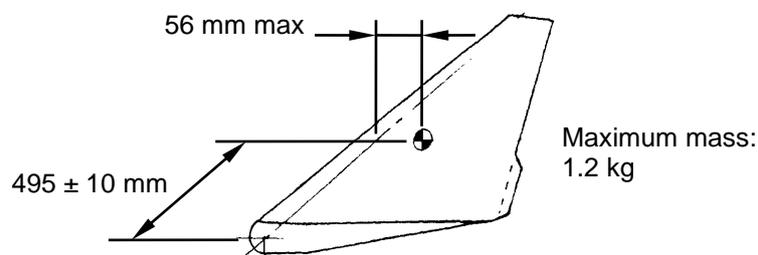
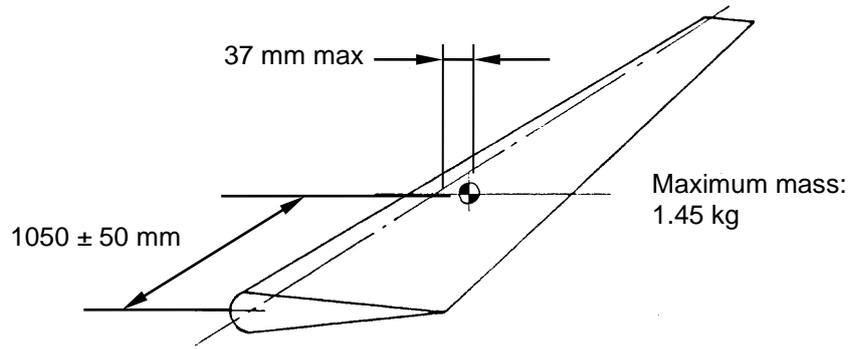
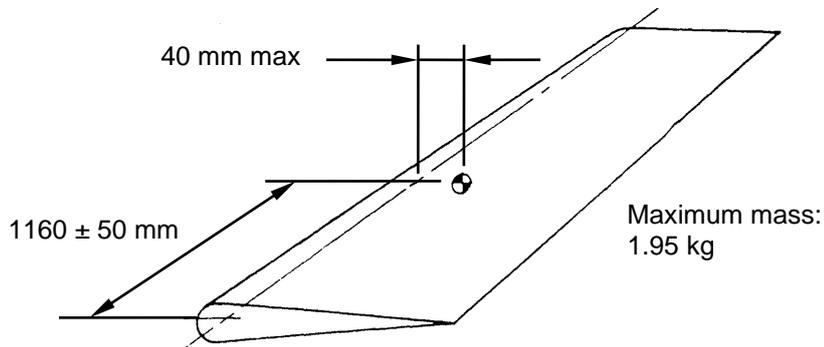
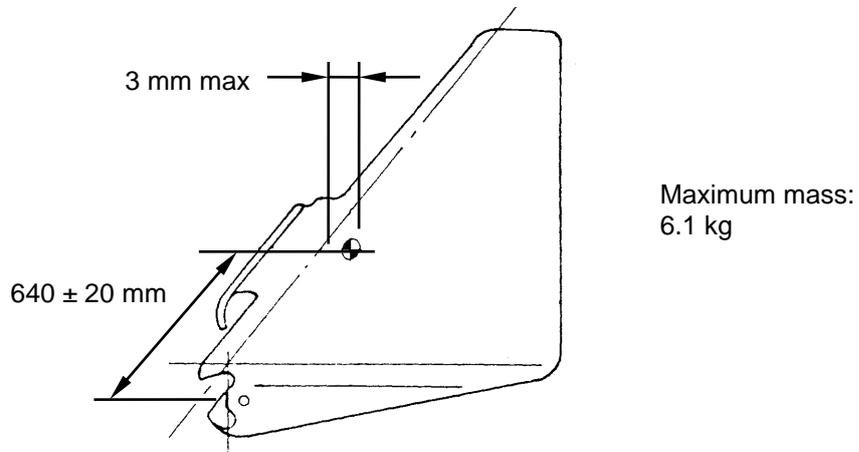
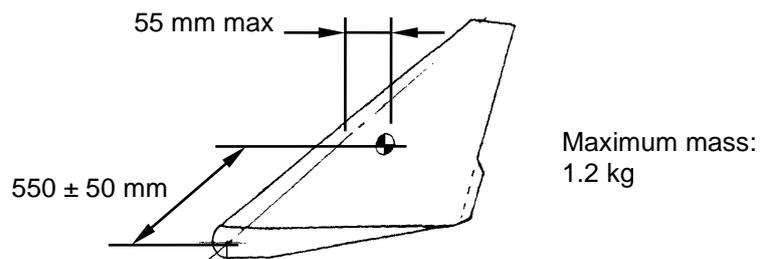


FIGURE 5. SZD-48-1 ELEVATOR BALANCE

**FIGURE 6. SZD-42-2 OUTER AILERON BALANCE****FIGURE 7. SZD-42-2 INNER AILERON BALANCE****FIGURE 8. SZD-42-2 RUDDER BALANCE****FIGURE 9. SZD-42-2 ELEVATOR BALANCE**

2. All the bolts in the control circuits are special Polish bolts that are a variety of lengths to suit the location. Be very careful that these bolts are not mixed up. If a long bolt is swapped into a short bolt location then the shaft can stick out and catch. If a short bolt is swapped into a long bolt location then the nylock nut may not engage sufficiently and may not be in safety. Check all bolts once installed do not catch and are in safety (ie 1 thread protrudes from the nylon lock.)

3. Airbrake freeplay:

On 3 Jantars, IZS, IZQ, GEE, both airbrakes were found to have a significant freeplay in the wing. The connections and controls in the fuselage are tight. The internals in the wing cannot be seen.

The LHS wing came up against a stop at full out which stops the freeplay. But the RHS does not and so could still chatter. However, in flight it gives no chatter. The airbrakes move together so are serviceable.

The limits of serviceability are not specified by the manufacturer. Further checks and feedback to GFA by other operators is requested.

4. AD 224; this was applicable to a range of serial numbers. However, the defect has been found in another S/N. ie the overlap of the skin was less than 5mm when adjusted to the maintenance manual but exceeded 5mm when adjusted to AD224. Please check the overlap when on the stops exceeds 5mm and that the stop is rigid enough. If not rigid the lower hinge may be cracked as above or other damage may be allowing movement.
5. The elevator pushrod is supported within the fuselage by two sets of rollers. Each set has three rollers arranged at 120 degrees around the rod. After prolonged service the rollers wear flats on the pushrod tube and permitted wear limits are shown in the attached bulletin BE 043/92. The pushrod's life may be extended by rotating the tube through 180 Degrees & reinstalling. Once wear has exceeded the permissible limits the tubing may be replaced in accordance with GFA Approved Modification 2010-3. BE-043/92, (Wear Limits for Pushrods) is attached. This is important as pushrods wear and need to be replaced. Be aware that they initially wear quickly but take a long time to pass the limit. New pushrods have been obtained from SZD but they are hard to transport and care to organize them coming out in a new glider trailer is a good way. A modification was available to manufacture new pushrods in Australia but it

needs to be re-approved if you want to use it. Contact GFA for details produced by John Ashford.

6. The glue attaching the canopy perspex to the frame has been known to fail on a Junior and other SZD sailplanes. One such example resulted in the full perspex departing the frame on a winch launch. The canopy was original, the glider a 1988 model. AWA 2015-3 was issued now cancelled. The glider had recently completed the manufacturers 3000-hour life extension inspection. Post examination showed a clean separation with little or no glue bonded to the perspex, the bulk of the glue remaining on the frame. The type certificate holder was advised but stated this was the first failure reported. It is highly recommended that canopies that are original as manufactured (the perspex never replaced) be regularly inspected for suspected glue failure. Any disbond identified must be repaired immediately.

7. It is known that Jantar types are subject to partial disbonding of the rudder guide tube from the fuselage wall. The guide tubes are originally anchored by pressing tube into the wet resin during manufacture. The rudder cables can place large side loads on the guide tube where it forms an S shape. Once disbonded, the rudder cables will try and cut the corners of the 'S', the guide tubes are not stiff enough to prevent this. This allows rudder pedal movement without the rudder moving. The most recent defect report states both left and right cable guide tubes were found totally disbonded in the centre fuselage section resulting in a complete loss of rudder movement. It was found that if the rudder was held in the neutral position, the rudder pedals could be cycled through the full range without resistance. Partial debonding still allows the control to work but as the disbond increases in length, the control on the rudder gets softer and less effective.



The above photo taken of the centre fuselage shows a secured bonded cable guide tube on the left, and a disbonded tube section sagging slightly on the right.

8. Service Bulletin BE-029/87 is applicable to multiple Jantar models and covers the optional modification for additional securing of the tailplane attachment bolt. Service Bulletin attached to this Advice Notice.

OTHER REFERENCES:

The GFA AD-AN-AWA Register is available from the website and is kept up to date and should be referred to for all ADs, ANs, AWAs.

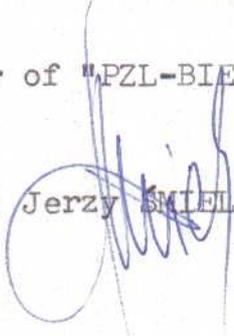
BULLETIN No BE-043/92 "JANTAR"

Ref: Appreciation of wear degree of the push-rod duraluminium tube surface in the location of contact with the ball bearing being used as the guiding rollers in the guides.

Way of introducing: as necessary.

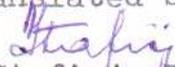
Elaborated in: PDPS-TKE.

Director of "PZL-BIELSKO"

Dipl.Ing. Jerzy  SMIELKIEWICZ

This is the translation of the original Polish text approved by the Airworthiness Authority.

Translated by:


W. Stafiej, D.Sc.

1. GROUNDS FOR INTRODUCING THIS BULLETIN.
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In the operation (inspections) it can appear the necessity of appreciation of duraluminium push-rod tubes surface wear in areas of contact with the ball bearings which are used as the leading rollers in guides (mainly in the wings).

2. LIST OF GLIDERS COVERED WITH THIS BULLETIN.
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This Bulletin covers these sailplanes of "JANTAR" family where the ball bearings have been used as the rollers of the push-rod guides which contact the push-rod (metal on metal). The described design is used in the sailplanes of SZD-48-1 "JANTAR-Std.2", SZD-48-3 "JANTAR-Std.3" and SZD-42-2 "JANTAR-2B" type.

3. DESCRIPTION OF THE INTRODUCED CHANGES.
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- 3.1. The allowed push-rod wear is defined.
- 3.2. When the allowed push-rod wear is exceeded the push-rod is allowed to be turned by 180° so that the contact takes place between the previous "wear surfaces".

4. LIST OF ENCLOSURES.
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No enclosures.

5. WAY OF INTRODUCING THE CHANGES OF THIS BULLETIN.
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- 5.1. The allowed limit width of the roller "trace" on the push-rod surface is 3,5 mm (Fig.1).
- 5.2. In case the allowed wear value is exceeded (even on one place-only) - disconnect the control system and turn the push-rod by 180°. Then secure it and check the adjustment.

6. FINAL STATEMENT.
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In case the push-rod has been turned due to its wear - make the record of this fact in the Glider Log Book in "Service Works" chapter.

- THE END -

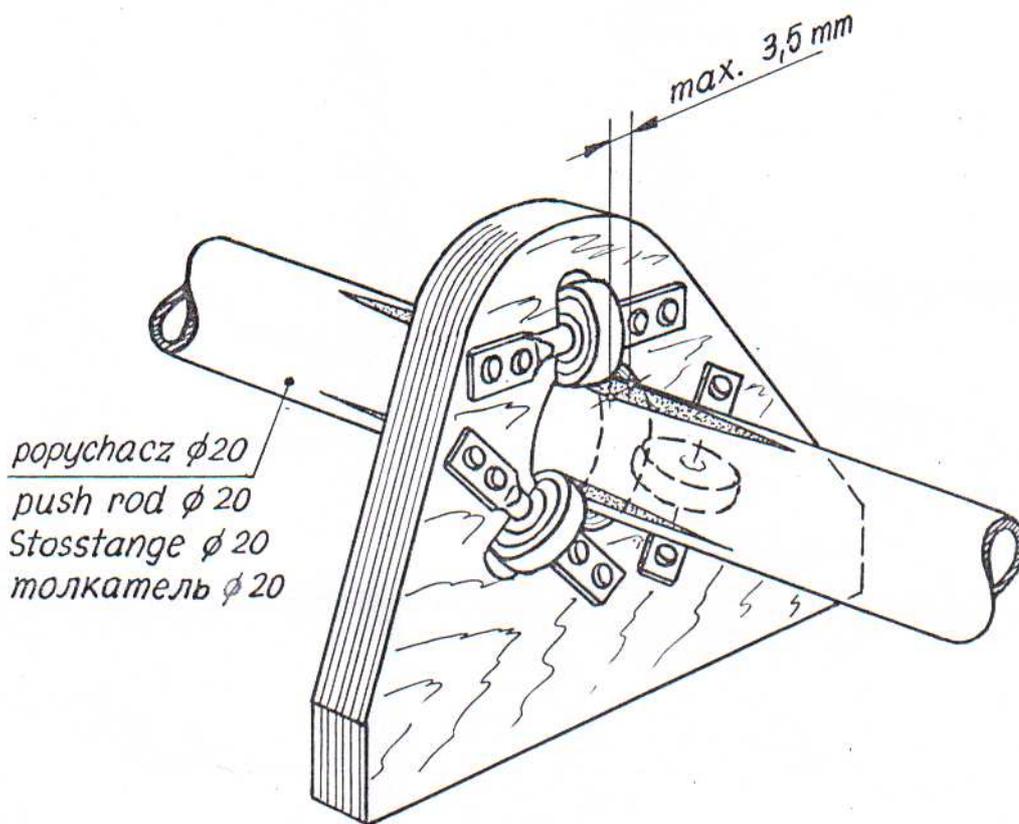


Fig.1.

BULLETIN No BE-029/87 "JANTAR"

Ref: Additional securing of the bolt connecting the tailplane with the fin against the automatic disconnection.

The Bulletin concerns the following glider types:

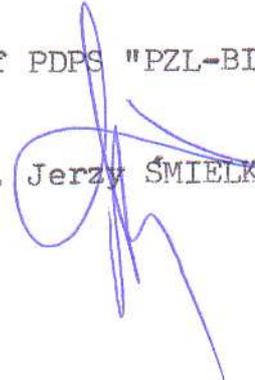
SZD-37X	SZD-38A	SZD-41A	SZD-48-1
SZD-37	SZD-41	SZD-41B	SZD-48-3 up to the
SZD-38	SZD-41-1	SZD-48	glider No B-1971 encl.

Way of introducing: Acc. to user's decision.

Elaborated in PDPS-TKE.

Director of PDPS "PZL-BIELSKO"

Dipl. Ing. Jerzy ŚMIELKIEWICZ



This is the translation of the original Polish text approved by C.A.C.A.

Translated by

Stalij
Wiesław Stafiej, D.Sc.

1. GROUNDS FOR INTRODUCING THIS BULLETIN.
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Due to the reported sometimes the doubts concerning the reliability of the securing of tailplane bolt against the accidental disconnection - "PZL-BIELSKO" has developed the way of additional securing, which every user can introduce on his glider acc. to his own decision and own expense.

2. LIST OF GLIDER FACT. NOS COVERED WITH THIS BULLETIN.
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This Bulletin covers all gliders of the "JANTAR" family with "T" tail, namely:

SZD-37x, SZD-37, SZD-38, SZD-38A, SZD-41, SZD-41-1, SZD-41A, SZD-41B, SZD-48, SZD-48-1 and SZD-48-3 up to the glider No B-1971 encl.

3. DESCRIPTION OF THE INTRODUCED CHANGES.
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The additional securing of the bolt connecting the tailplane with the fin, providing the bolt is correctly installed, is got by the M6 screw /Fig.1/.

It is screwed into the bolt pivot, as shown on the sketch of Fig. 2 so that its head touches the external lap.

4. LIST OF ENCLOSURES.
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No enclosures.

5. WAY OF INTRODUCING THE CHANGE.
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5.1. On the pivot of connecting bolt (44-40-00) the opening of $\varnothing 4,8$ (for M6 thread) should be traced and drilled through on the distance of 22 mm from the stop surface (in respect to the front nest sleeve face - see Fig.2). The opening axis should be parallel to the cuts for the locking spring. Smooth the opening edges.

- 5.2. After derrigging the tailplane insert the bolt (44-40-00) into the fin nests till the locking spring clicks. Using the \emptyset 4,8 hole trace the hole \emptyset 12 location on the fin left skin. Drill the preliminary opening (e.g. \emptyset ,8) and check it to be axial. Then enlarge it to \emptyset 12 or regain the axiality, if necessary, by means of fileing.
- 5.3. Make the M6 thread in the bolt.
- 5.4. Make the composite stop block in the from of the ring \emptyset 26/12 and 6 mm thick. Glue it in using the epoxy composition.
- 5.5. Check the correct securing with the screw. (taiplane derrigged). The srew head should contact the stop block.
- 5.6. On the glider ready for flight the bolt shall be secured with the M6 screw and the hole \emptyset 12 should be plugged with the \emptyset 25 ring of tixo-tape.

6. FINAL STATEMENTS.
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- 6.1. The change introduced should be notified in the Glider Log Book, chapter "Maintenance Works".
- 6.2. In the Technical Service Manual, chapter "Assembling and disassembling of sets" item "Horizontal tailplane assembling" after the sentence "... the spring which sinks into the slot of the bolt" add the wording:
"Secure with M6 screw acc to Bulletin No BE-029/87
"JANTAR".

- T H E E N D -

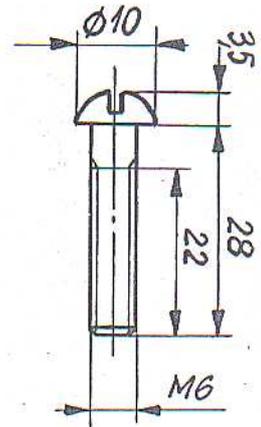


Fig.1.

Screw P-M6x28
acc. to stand. BN-76/1112-03
material - (steel) 10
amount - 1 piece

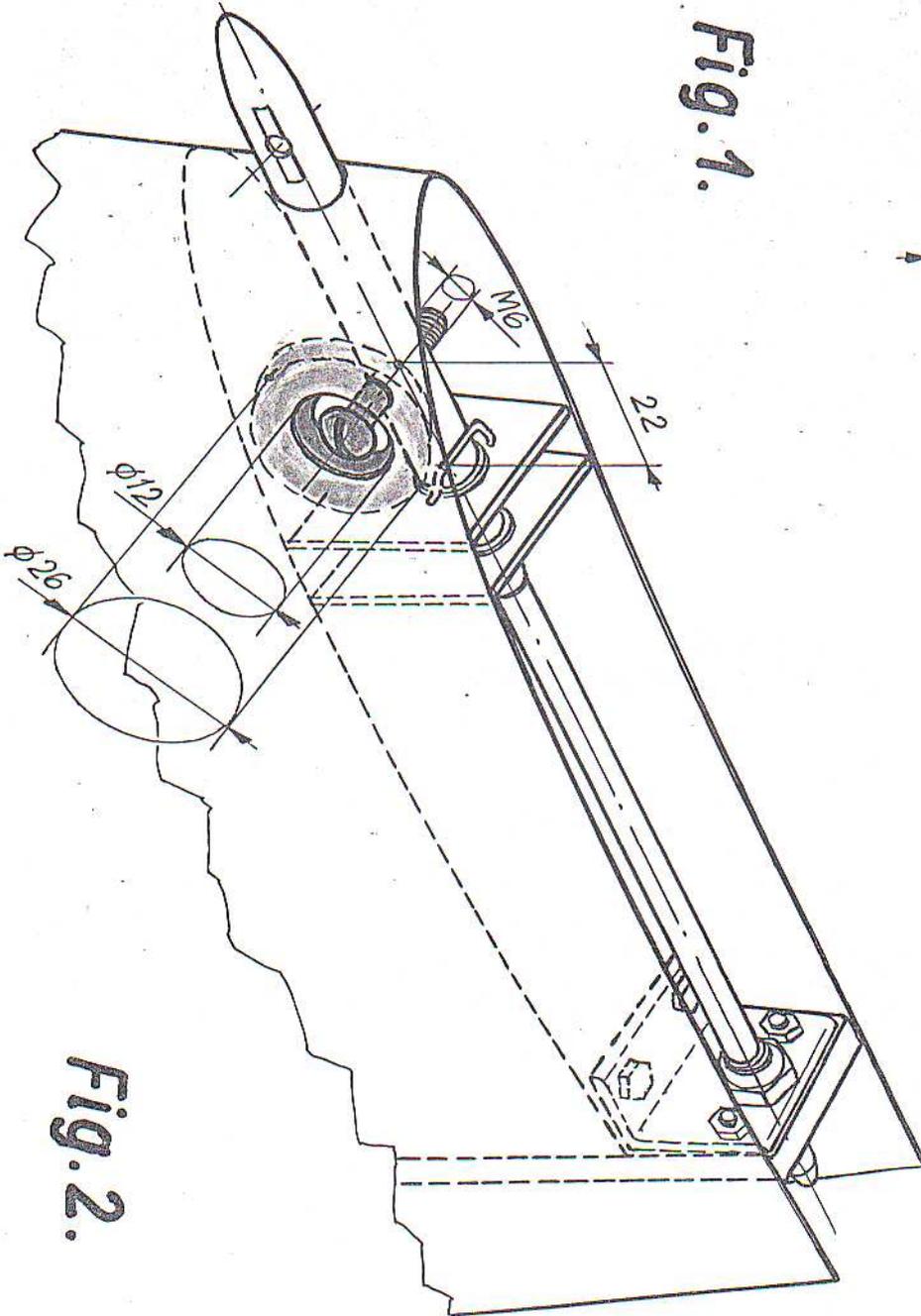


Fig.2.