

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF TRANSPORT

AIRWORTHINESS DIRECTIVE GLIDERS

GFA AD/129 L.E.T. KUNOVICE 16

GLIDER TYPE AFFECTED:

L-13 Blanik all serial numbers (Mandatory Bulletin No. L13/052 refers)

BACKGROUND:

A number of L-13 Blaniks operated in U.S.A. have been reported to have developed cracks in the bend radii of tailplane end ribs at outer elevator hinge attachments. It is likely that this defect would occur in gliders subject to frequent trailering.

REQUIRED ACTION:

Inspect and repair the tailplane if necessary according to the following instructions.

A. Inspection

- 1) Tear off fabric cover patch of the access hole in the elevator leading section at outer hinge attachment.
- 2) Remove cotter pin and outer hinge pin.
- 3) Tilt out elevator in the bearing of inner tailplane hinge attachment.
- 4) Inspect end rib radii on both LH and RH side tailplanes for cracks using magnifying glass. See Fig. 1, view "P" areas marked by arrows. If no cracks are found, re-install elevator (using a new cotter pin) and stick on a new fabric patch.

Material Information

Qty	Description	Dwg. No. - Std (Dimensions - mm)	Material	Note
2	Cotter pin	1.6x15 CSN 021781.09-K	CSN 411320.30 or MS 24665-34 Steel, cadmium or MS 24665-152 plated	1/16" dia x 5 1/8" long
2	Blinding patch	L13.303-09.09 ND (70 x 100)	CSB 804596 Aircraft fabric	

Should any cracks be found, reinforce tailplane end rib as instructed in para B below.

Caution: Should the cracks be longer than 10 mm a warning must be given in the maintenance release and aircraft logbook to replace the tailplane end rib during next overhaul or within 50 hours in service whichever comes first according to para. C of this Bulletin.

Tailplane end ribs must be inspected after every 250 flying hours.

B. Reinforcement of Tailplane end rib

- 1) Cut off wires or cables (on sailplanes certified by the ARB) at trim tab levers and remove elevator by sliding it out of the bearing of inner tailplane hinge attachment.
- 2) Carefully drill off original rivets pos. 3 and 5 using a 2.6 mm dia. drill and rivets pos. 4 and 6 using a 3 mm dia. drill. See Fig 1, view "P".
- 3) Drill holes at the ends of cracks using a 2 mm dia. drill and de-burr the holes carefully.
- 4) Locate angle pieces pos. 1 and 2 on the rib - see Fig. 1, view "P". Through original rivet holes mark-off and centre-punch holes on angle pieces. Drill holes dia 3.1 mm for rivets pos. 4, 5 and 6. Holes for rivets pos. 3 to be drilled using a 2.7 mm dia. drill and dimpled. Re-drill holes for rivets pos. 5 in the spar boom to the diameter of 3.1 mm.
- 5) Deburr carefully drilled holes in the angle pieces and the tailplane.
- 6) Locate angle pieces in correct position and rivet on.
- 7) Reinstall elevator (using a new cotter pin) and stick on a new fabric patch.
- 8) Removal and installation of elevator trim tab controls:
 - Remove upholstered side section in the cockpit at trim tab rear lever.
 - On sailplanes from 18th series onward there are no turnbuckles at trim tab rear lever and it is difficult to connect wires at special connection pieces. It is, therefore, recommended to remove complete controls (i.e. wires between trim tab rear lever and trim tabs) and to replace them by new ones.
 - On sailplanes up to 17th series and sailplanes-certified by the ARB it is sufficient to remove wires or cables (on sailplanes certified by the ARB) between connection pieces and trim tabs by disconnecting turnbuckles at trim tab rear lever in the cockpit and disconnecting wires or cables from connection pieces. The connection pieces are accessible from the inside of cockpit through access hole in the fuselage located between frames No. 13 and 14 on sailplanes up to 17th series or through access hole in the fuselage between frames No. 6 and 7.
 - Stretch out new wires (or cables) in the fuselage. Connect them to the connection pieces and fix to trim tab rear lever in the fuselage. Turnbuckle eyes at the rear lever to be screwed in turnbuckle nuts so that two threads can be seen beyond the nut.

Warning: When connecting new wires (cables) both the levers in the cockpit and the trim tabs are to be in neutral position.

- Stretch wires (cables) by hand by pulling on their ends and fix them to the levers on trim tabs.
Typical connection of wires is shown on Fig. 3, connection of cables on Fig. 4.
- Tie the ends of cable with locking wire and solder.
- Adjust trim tab deflections to $12^{\circ} \pm 1^{\circ}$ up and $35^{\circ} \pm 1^{\circ}$ down by means of turn-buckles between frames No. 14 and 15.
- Stretch the whole control cable system, if necessary, by means of turnbuckles at trim tab rear lever in the cockpit.
- Reinstall upholstered side section.

Material Information

Pos.	Qty	Description	Dwg No. - Std (Dimensions - mm)	Material	Note
1	2	Angle piece, LH	SK-L13.276-01	CSN 424253.61 or 2024T3)
2	2	Angle piece, RH	SK-L13.276-02 (Sh.0.8; 31x43)	Duralumin, tensile strength after hardening 392 MPa (40 kp/mm ²) (anodized)	
3	4	Countersunk rivet	2.6x6	CSN 424208.7 or AD Rivet	
4	4	- " -	CSN 022320.5 3x7	Duralumin, shear strength 245 MPa (25 kp/mm ²)	
5	4	Button-head rivet	CSN 022320.5 3x6	CSN	
6	4	- " -	CSN 022302.5 3x8		
-	2	Cotter pin	1.6x15		(a)
-	2	Blinding patch	CSN 021781.09K	CSN 411320.30 or MS 24665 - 133 Steel (cadmium plated))
-	2	Cable	L13.303-09.09 ND (70x100) 1.6	CSN 804596 Aircraft fabric)
-	2	Wire, front	CSN 024311.35 (L.3500)	Steel, single strand, 19 wires, construction 1+6+12, nominal breaking load 1900 N (192 kp)	(b)
-	4	Wire, rear	L13.406-07 (dia.1; L.5200)	CSN 426450.26 Steel wire, patented; tensile strength 2450 to 2744 MPa (250 to 280 kp/mm ²); Young's modulus 205800 MPa (21 000 kp/mm ²)	(c)
-	4	Wire, rear	L13.406-05.06 ND (dia.1; L.5500)	CSN 417353.1	(d)
-	8	Clamp	L13.406-05.05 ND (tu. 4x1; L.10)	Steel, tensile strength 343 to 441 MPa (35 to 45 kp/mm ²) (galvanized)	(c)
-	4	- " -	- " -		(d)

NOTES:

- (a) Applies to all L 13 sailplanes.
- (b) Applies to L 13 sailplanes certified by the ARB.
- (c) Applies to L 13 sailplanes from 18th series (except those certified by the ARB).
- (d) Applies to L 13 sailplanes up to 17th series (except those certified by the ARB).

Angle pieces pos. 1 and 2 can also be workshop - made according to Fig 5.

C. Replacement of tailplane end rib

- 1) For elevator removal refer to para A, items 1 and 2, and to para. B, items 1.
- 2) Mark off distance between inner and outer hinge attachment on the elevator.
- 3) Carefully drill off original rivets pos. 11 using a 2.6 mm dia. drill and rivets pos. 12 using a 3 mm dia. drill. See Fig. 2, view "T" (from Fig. 1.).
- 4) Remove tip piece.
- 5) Drill off three rivets pos. 13 fastening end rib to the spar using a 2.6 mm dia. drill. Remove end rib.
- 6) Make a 35 mm dia. hole in the spar and deburr carefully. See Fig. 2, view "R".
- 7) Install new end rib pos. 10 in the tailplane. Through original rivet holes in the spar mark-off and centre-punch roles for rivets pos. 13 on end rib.
Drill holes using a 2.7 mm dia. drill. Fasten end rib to the spar using e.g. two bolts.
M2. Reinstall tip piece and check the distance between hinge attachments (as marked-off before removing the original and rib). Through original rivet holes drill 2.7 mm dia. holes for rivets pos. 11 and 3.1 mm dia. holes for rivets pos. 12 in the end rib. It is necessary to keep the distance of 7 mm minimum between rivet holes and the edge of rib flange.
- 8) Remove end rib and dimple holes for countersunk rivets pos. 11 and 12.
- 9) Reinstall end rib and fasten in with three clecos at least.
- 10) Rivet end rib on the spar using three rivets pos. 13.
- 11) Remove clecos, reinstall tip piece and fasten it with several clecos again.
- 12) Fasten tip piece using successively rivets pos. 11 and 12.
- 13) Refer to para B, items 7 and 8 for installation of elevator and of elevator trim tab controls.

Material Information

Pos.	Qty	Description	Dwg No. - Std. (Dimensions - mm)	Material	Note
10	2	End rib	L13.301-04	(assembly))
11	44	Countersunk rivet	2.6x6	CSN 424208.7)
12	4	- " -	CSN 022320.5 3x6	Duralumin, shear strength 245 MPa (25 kp/mm ²))
13	6	Button-head rivet	CSN 022320.5 2.6x5) (a)
-	2	Cotter pin	CSN 022302.5)
-	2	Blinding patch	1.6x15 CSN 021781.09K	CSN 411320.30 or MS 24665-133 Steel (cadmium plated))
-	2	Cable	L13.303-09.09 ND (70x100)	CSN 804596 Aircraft fabric)
-	2	Wire, front	1.6 CSN 024311.35 (L.3500)	Steel, single strand, 19 Wires, construction 1+6+12, nominal braking load 1900 N (192 kp)) (b)
-	4	Wire, rear	L13.406-07 (dia.1; L.5200)	CSN 426450.26 Steel wire, patented; tensile strength 2450 to 2744 MPa (250 to 280 kp/mm ²); Young's modulus 205800 MPa (21 000 kp/mm ² ; modulus of rigidity 80360 MPa (8200 kp/mm ²)) (c)
-	4	Wire, rear	L13.406-05.22 ND (dia.1; L.1800))
-	8	Clamp	L13.406-05.06 ND (dia.1; L.5500)) (d)
-	4	- " -	L13.406-05.05 ND (tu. 4x1; L.10)	CSN 417353.1 Steel, tensile strength ₂ 343 to 441 MPa (35 to 45 kp/mm ²) (galvanized)) (c)
-	4	- " -	- " -) (d)

Notes:


- (a) Applies to all L 13 sailplanes.
 (b) Applies to L 13 sailplanes certified by the ARB
 (c) Applies to L 13 sailplanes from 18th series (except those certified by the ARB)
 (d) Applies to L 13 sailplanes up to 17th series (except those certified by the ARB).

COMPLIANCE:

Inspection is to be carried out before further flight and if no cracks are present the inspection is to be repeated at intervals not exceeding 250 hours in service. If cracks are detected proceed as set out in instructions.

Compliance is mandatory.

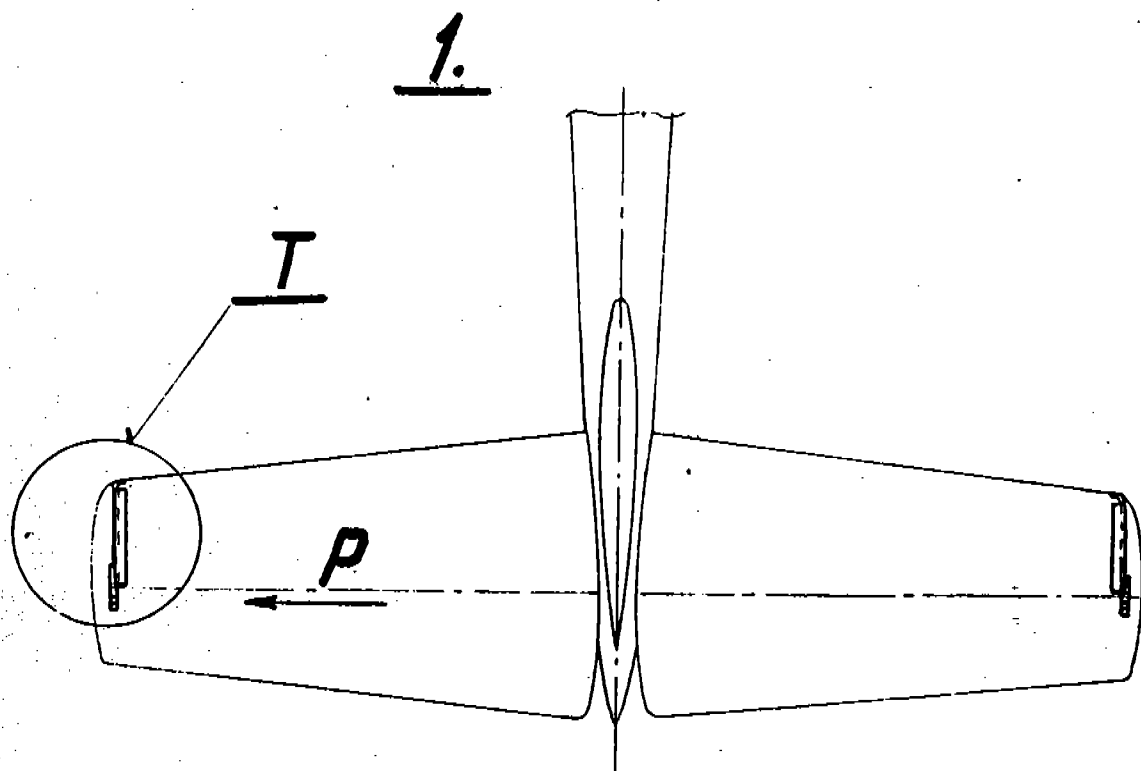
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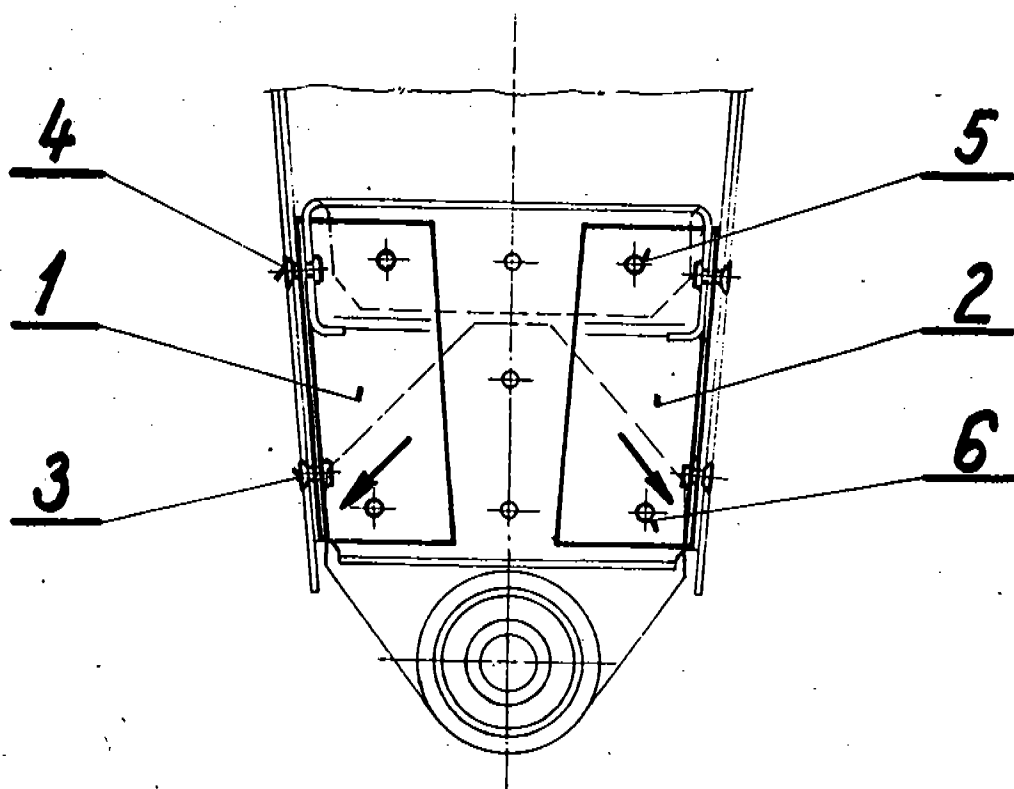
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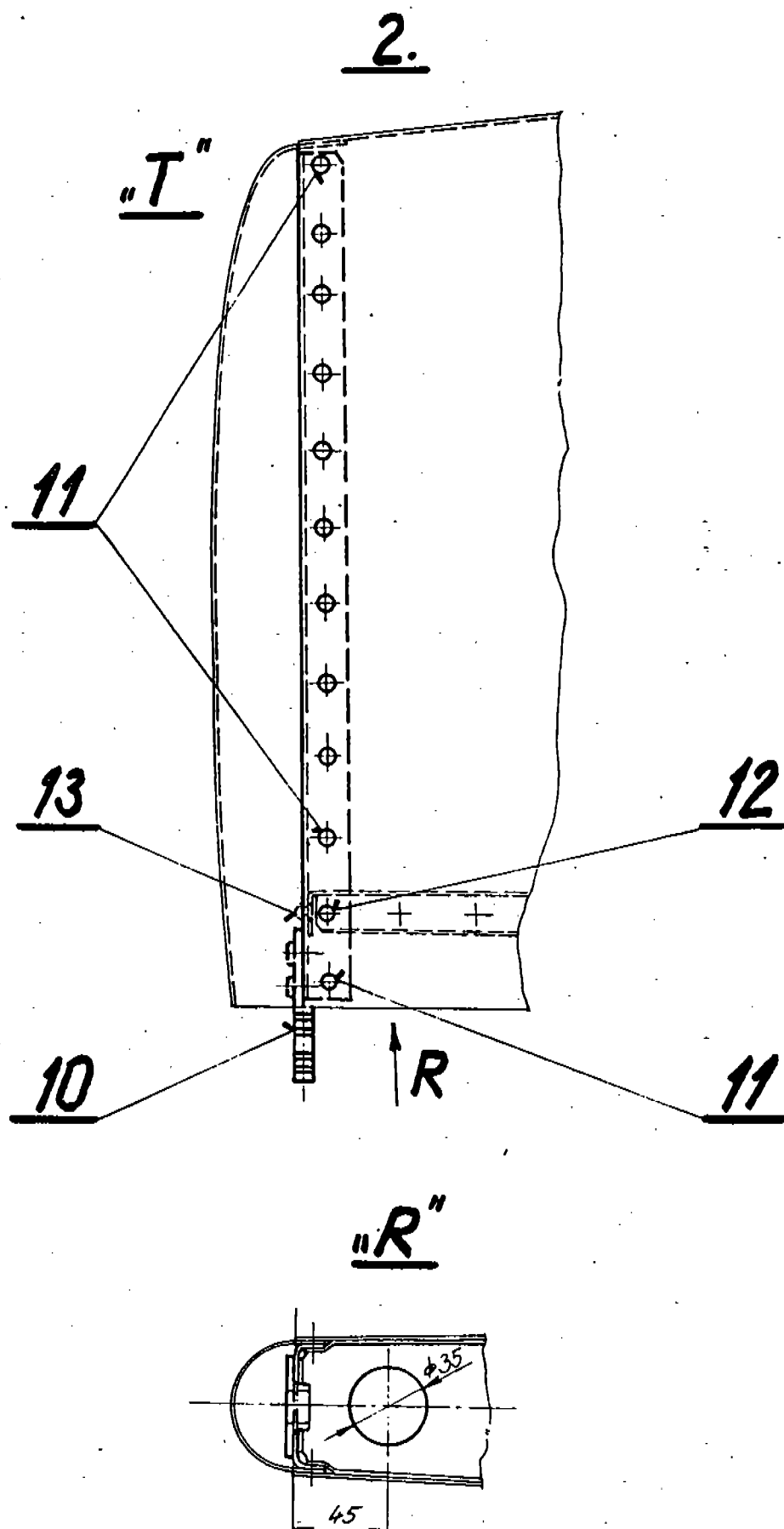
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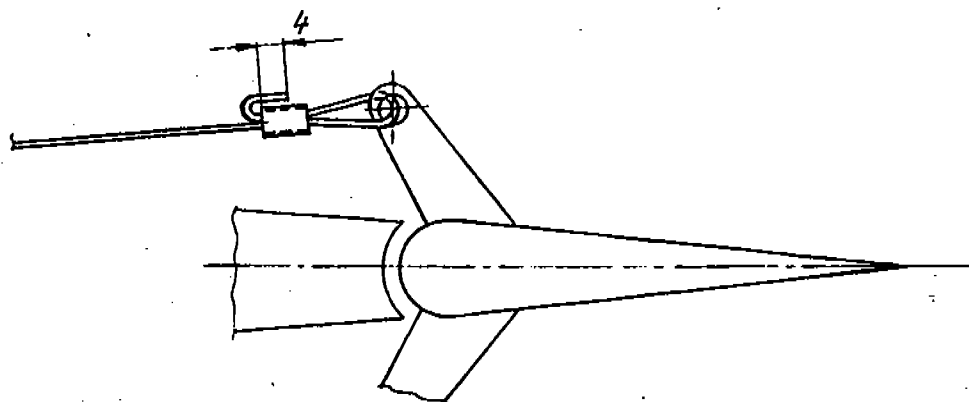
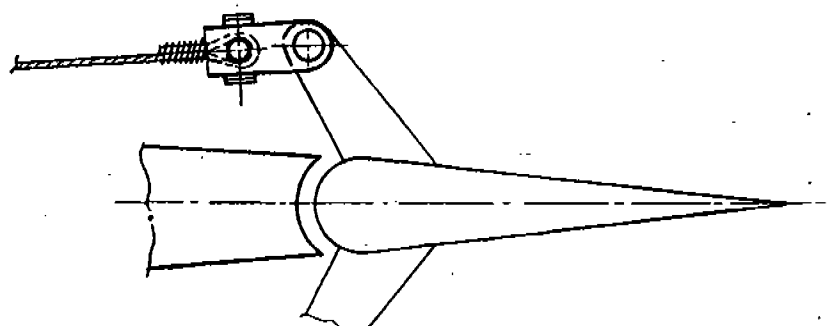
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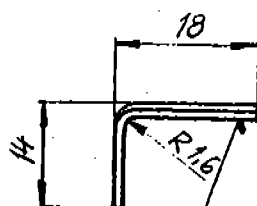
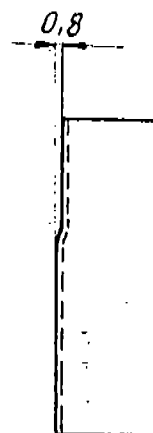
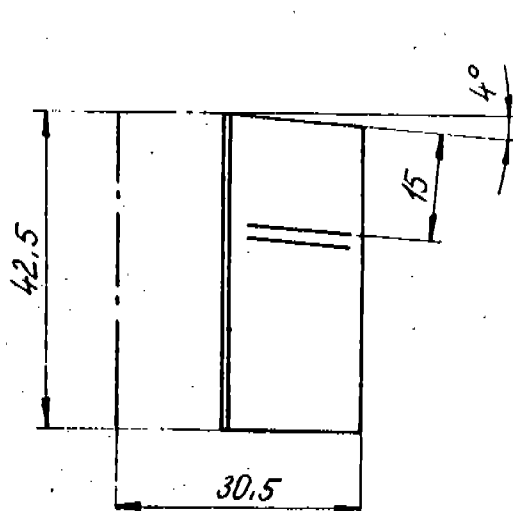
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