

## MANDATORY BULLETIN

MB No: L 13/079a

Concerning: Manual for Operation and Maintenance of the L13 Blaník Sailplane without overhauls, Part 1, Edition-August 1, 1985

Reason: Determination of allowable plays in deflections of elevator trim tab and method of their measuring and inspection in operation.

To be carried out at the latest by: On receiving this Bulletin

To be carried by: Manual for Operation and Maintenance Holder


Costs to be covered by: No cost arise

Necessary material to be supplied by: Revised pages are enclosed

Bulletin becomes effective: Since the date of receiving

Manhours required: 0

Total number of pages: Title page and 5 enclosures (pages 1b, 1f, 31, 32, 38)

  
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manufacturer

Engineering data contained in this Bulletin are CAI APPROVED.

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LIST OF EFFECTIVE PAGES

Section	Page	Date
Title page	1	Aug 1/85
	1a	Aug 1/85
List of effective pages	1b	Mar 25/97
	1c	Aug 31/95
	1d	Aug 31/95
	1e	Aug 31/95
Log of revisions	1f	Mar 25/97
	1g	Aug 31/95
Contents	2	Aug 31/95
	3	Aug 31/95
	4	Aug 1/85
	5	Aug 1/85
	6	Aug 1/85
	7	Aug 1/85
	8	Aug 1/85
	9	Aug 1/85
	10	Aug 1/85
	11	Aug 1/85
	12	Aug 1/85
	13	Aug 1/85
	14	Aug 1/85
	15	Aug 1/85
	16	Aug 1/85
	17	Aug 1/85
	18	Aug 1/85
	19	Aug 1/85
	20	Aug 1/85
	21	Aug 1/85
	22	Aug 31/95
	23	Aug 1/85
	24	Aug 1/85
	25	Aug 1/85
	26	Aug 1/85
	27	Aug 1/85
	28	Aug 1/85
	29	Aug 1/85
	30	Aug 1/85
	31	Mar 25/97
	32	Mar 25/97
	33	Aug 1/85
	34	Aug 1/85

Section	Page	Date
	35	Aug 1/85
	36	Aug 1/85
	37	Aug 1/85
	38	Mar 25/97
	39	Aug 1/85
	40	Aug 1/85
	41	Aug 1/85
	42	Aug 1/85
	43	Aug 1/85
	44	Aug 1/85
	45	Aug 1/85
	46	Aug 1/85
	47	Aug 1/85
	48	Aug 1/85
	49	Aug 1/85
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	65	Aug 1/85
	66	Aug 1/85
	67	Aug 1/85
	68	Aug 1/85
	69	Aug 1/85
	70	Aug 1/85
	71	Aug 1/85
	72	Aug 1/85
	73	Aug 1/85
	74	Aug 1/85
	75	Aug 1/85
	76	Aug 1/85
	77	Aug 1/85
	78	Aug 1/85

LOG OF REVISIONS

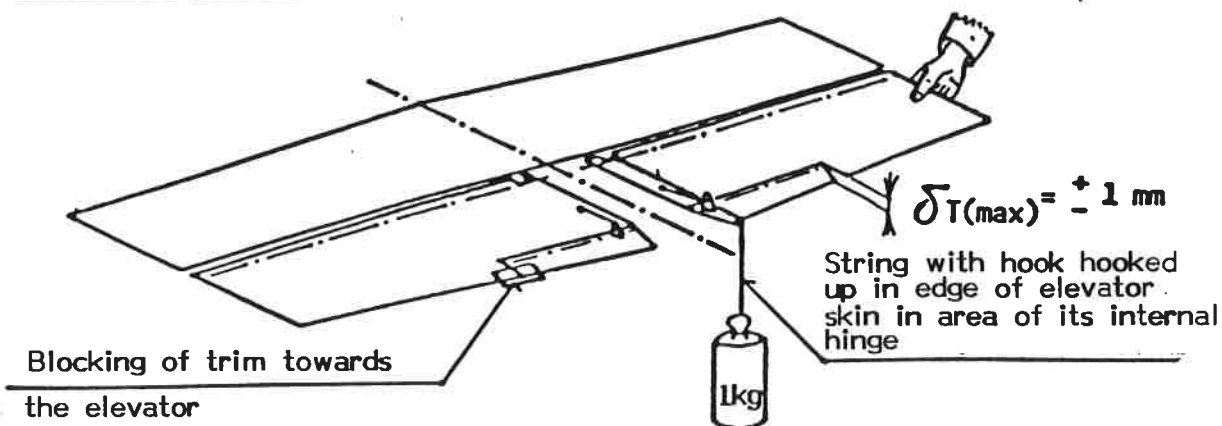
The list of all the pages affected is indicated in table. If an amendment or edition to the text of this Manual are necessary, the holder will be notified of this by the Amendment service which will send him the new (amended) pages. The holder of the Manual is obliged to make a record about the amendment in the table, to insert the new pages and, where applicable, to remove the existing pages. The amended pages will be marked with the number and the date of issue of the amendment at the bottom of the page.

A marginal notation will be used to indicate those parts of the contents of a page that have been amended.

No.of Amen.	No. of bulletin	No. of the pages affected	Date of iss. of new pages	Date of entry and signature
1	L13/073a	1b, 1c, 1d, 1e, 1f, 1g, 2, 3, 22, 196, 197	Aug 31/95	
2	L13/079a	1b, 1f, 31, 32, 38	Mar 25/97	

- Rudder control - measured on the foot control pedals ..... 3 mm
  - Elevator trim tab control - measured on the tab trailing edge in vertical plane with neutral position of the elevator as well the tab .....  $\pm 1$  mm
- Measure the clearances in the tab control by the following procedure:
- block one of the tabs in suitable way on the trailing edge to the elevator (e.g. using two metal sheet strips connected with bolt and nut)
  - load the other tab with a moment induced by a weight of 1 kg hung-up through a string on the tab trailing edge in the area of control levers (see Scheme No. 1)
  - measure the surface clearance ( $\delta_T$  mm) which is understood as a vertical distance between the trailing edge of the tab and the elevator
  - a clearance which is in upward direction will be evaluated only subjectively by comparison with a clearance measured in downward direction
  - use the same procedure also for the other tab

Scheme No.1: Measuring of clearances in rotation of elevator trim TAB



If the measured clearances  $\delta_T$  exceed the admissible value  $\pm 1$  mm they must be fully eliminated by tightening the control strings (possibly cables) through tightening sleeves of bowdens on fuselage frame No.14 (for gliders up to 17<sup>th</sup> series even with use of string tighteners at rear control lever of trim tabs in pilot's cockpit). Adjust the bowden tighteners in even way so that the difference in tab deflections does not occur. If the bowden tighteners travel is not sufficient for total clearance elimination it is necessary to screw in the tighteners to the stop (so that the largest possible travel remains for following adjustment of clearances), to change the strings or cables in the bowdens, to attach them to surfaces and readjust them.

To ensure sufficient irreversibility (self-locking ability) of the trim tab control system it is necessary to tighten each of their control levers in the cockpit with tightening moment of 2 Nm.

The pull rods may not be bent or otherwise deformed. The pulleys and stranded wires may not be damaged. The control pull rods of wing and brake flaps may not be damaged and must move easily in the guides and be without a clearance. The supporting pin on the countershaft in the fuselage may not be scuffed and the supporting runner (see Fig. 6.1, detail B) may not be open. Replace the damaged parts.

Check the locking of all pins

- Verify the condition of the following glued joints:  
Inner pull rods, dwg. No. L13.411-12, of the control of wing flaps, Fig. 6.1, position 15. Glued on one side of the pull rod is an eye, while a threaded tube for a fork is on the opposite side of the pull rod.

Procedure of the check:

It is performed by two workers. One of them holds the handle for the control of wing flaps in open position, while the other one grasps the wing flap by the leading edge and trailing edge (in the spot of rib) and applying force in the direction of extension and retraction, check to see that the pull rods of wing flaps control are not released (in glued joints). This procedure is performed on the left and also on the r.h. wing flap. When a failure of some of glued joints is detected, replace the faulty part and announce the fault to the manufacturer.

Legend to Fig. 6.1

(1) Handle of wing flaps control, (2) Handle of brake flaps control, (3) Pull rod of wing flaps control, (4) Pull rod of brake flaps control, (5) Joint of the pull rod, (6) Guide, (7) Pull rod of wing flaps in the fuselage, (8) Pull rod of brake flaps in the fuselage, (9) Bracket, (10) External shaft, (11) Internal shaft, (12) External torsion tube, (13) Internal torsion tube, (14) Lever, (15) Pull rod of wing flap, (16) Lever of brake flap, (17) Pull rod of brake flap, (18) Guide, (19) Carrier, (20) Flange for bush fixing, (21) Ball journal, (22) Lever of wing flaps, (23) Lever of brake flaps, (24) Runner, (25) Wing flap, (26) Brake flap, (27) Double-arm lever of brake flap, (28) Pull rod of interconnection of the upper and lower brake flaps, (29) Suspensions of brake flaps, (30) Guide pulleys.

- Check integrity of whole control route of the elevator trim tabs.
- 6.4.5.1 The adjustment of the elevator control must be done so:
- that the double-arm lever would not bump into the fuselage bulkhead No. 14
  - that sufficient clearance is secured between the control lever handle and the rear instrument board
  - max. clearance at the end of control levers (with blocked control surfaces) is max. 2 mm.
- 6.4.5.2 Check the intactness of stranded wires of the elevator control.
- 6.4.5.3 Check the tension of the elevator stranded wires
- the upper wire must be tensioned to the following value:
    - older stranded wires that have been already in operation
      - to 392 + 49 N (40 + 5 kp)
    - new stranded wires that have not yet been in operation (in case of replacement) - to 392 + 196 N (40 + 20 kp).
- The first tensioning should principally be performed to the upper limit of tolerance.
- 6.4.6 Check the whole line of ailerons control for intactness
- Check the hubs of ailerons control on the 1st rib for cracks and release of joints.
- 6.4.7 Check the control of wing and brake flaps.
- Check to see that the surface of pull rods of brake and wing flaps in the fuselage is free from mechanical damages and that pull rods do not seize in their guides on the left side of the fuselage. Replace the faulty guides for new ones. The pull rods must move smoothly along the whole length of their travel (provided that the final assembly of the soaring glider has not yet been performed).
- Check the connecting tie rods going from the flap to the front position. In operation the tie rods are buckling stressed and therefore, check above all their straightness