



## AIRWORTHINESS DIRECTIVE

Issue 3

TYPES AFFECTED:

BLANIK L13  
BLANIK L13 A1  
BLANIK with power pack modification.

SUBJECT:

Aerotow release hook modification.

BACKGROUND:Issue 1 (1972 publication) -

Two recent incidents of abortive aero tow rope release have occurred in which the tug, glider and their crews' safety was seriously jeopardised. In both cases the glider pilots release technique was faulty but an inadequacy in the operation and design of the release hook mechanism compounded the affect of the deficient release technique.

The release mechanism has an excessive over-centre toggle lock in the linkage which requires an excessive release knob operating load if the tow rope tension is not relaxed sufficiently by correct tow rope release technique. Additionally, under a straight ahead tow rope tension, a pinching action is imposed on the tow rope ring as the release hook opens.

ISSUE 2 (25/10/84 publication)

As part of the follow up on an accident investigation two aspects of aerotow release behaviour were found during October 1984.

- (1) Release beaks modified exactly (30° cut off angle) to AD 15 Issue 1 MAY still grip the standard GFA big ring sufficiently to cause a "hang up".
- (2) The big "tost" ring (German specification 65-091) is also likely to hang up, unless the beak is further relieved (in excess of 30°).

ISSUE 3 (18/8/87 publication)

Revised from operational experience.

NOTE: ISSUE 3 DATED 2/9/1987 totally supersedes and invalidates Issue 2

REQUIRED MODIFICATIONS:

- (1) The toggle link stop pin is to be removed and a 11 mm steel bush is to be fitted over the stop pin so that the toggle link over centre travel will be limited to 2 mm. It will be also necessary to re-work the toggle return spring to fit over the bush. (Hole through bush to suit size of existing bolt).
- (2) To overcome the pinching action on the tow rope ring the tip of the hook must be modified as shown on the enlarged detail of the attached drawing (Sheet 3). As the hook is hardened steel the tip profile must be modified by grinding to the shape shown.
- (3) Hacksaw off the bungee hook, such that there is no possibility of a towrope or ring catching and causing a "hang up" (Sheet 4).

Issued by:

Chief Technical Officer  
Airworthiness

Sheet 1 of 4

For and on behalf of:

GLIDING FEDERATION OF AUSTRALIA

2/9/1987

GFA/AD 15	Issue 3
2/9/1987	Sheet 2 of 4

# TEST REQUIREMENTS:

It is necessary to verify that following mods (1) and (2) the ability of the beak to "nip" and hold the ring (both GFA and Tost) has been removed.

## SHEET 3 ILLUSTRATES A TEST METHOD:

- (1) Remove the nose cone
- (2) Using a lever against the release housing, through the ring, apply a load to the ring, pulling on the beak in a forward direction.
- (3) The final load developed at the beak should be equal to the weak link strength - 1100 lbs (500 kg) (Use a 10 : 1 lever and a 50kg spring balance).
- (4) Function the front cockpit release handle and check for smooth release with no tendency for the beak to "nip" and hold the ring.
- (5) Measure by spring balance the front cockpit pilot effort to release the ring loaded to 1100 lbs.
- (6) If the pilot effort exceeds 15 kg (GFA MOSP) then the following action is to be taken:-
  - (a) Disconnect the belly (winch) release cable at the RH end of the cross shaft assy on Frame No. 1.
  - (b) Repeat (5). If the load still exceeds 15kg (GFA MOSP) then either -
    - (1) The overcentre set to modification (1) needs to be reduced by increasing the bush diameter
    - or
    - (2) the assist return spring mounted on the LH side of the Frame 1 cross shaft (some Blaniks, not all Blaniks) is too strong.
  - (c) Where it is necessary to operate on aerotow, with the belly hook disconnected to keep the pilot effort down, then Part 1 of the Maintenance Release is to have the following endorsement -

ITEM No.	MAINTENANCE TO BE PERFORMED	DUE DATE OR TIME IN SERVICE	MAINTENANCE CERTIFIED AND AUTHORISATION NUMBER	DATE
	BEFORE WINCH LAUNCHING THE			
1	BELLY RELEASE MUST BE			
	RE-CONNECTED			

ADDITIONALLY both cockpits must be placarded "AEROTOW ONLY".

- (d) Where testing is only done with one type of ring group (i.e. GFA or Tost) the log book entry must clearly state which group was used and further state that a second test must be completed before operating with the alternative ring group.

PLACARDS: Where only one ring group is tested both cockpits must be placarded  
 "USE GFA RINGS ONLY" - deleting ring type as required.  
 TOST

COMPLIANCE: The above modifications are mandatory and must be carried out before the next aerotowed launch or within 3 months for Blaniks not currently being aerotowed.

The modification may be carried out by persons holding GFA Airworthiness Authorisations endorsed for carrying out standard repairs, but the modification must be inspected and certified by entry in the glider's log book by a GFA authorised C. of A. inspector. (any type).

MODIFICATION

Fit 11 mm. O.D.  
STEEL BUSH OVER PIN  
TO LIMIT OVER CENTRE  
TRAVEL TO 2 mm.  
BUSH LENGTH TO BE  
NEAT FIT BETWEEN  
HOUSING SIDE PLATES.  
REWORK SPRING END  
TO FIT.

OVER CENTRE TRAVEL WAS 4mm APPROX,  
NOW REDUCED TO LESS THAN 2mm.

SIDE PLATES

MODIFICATION

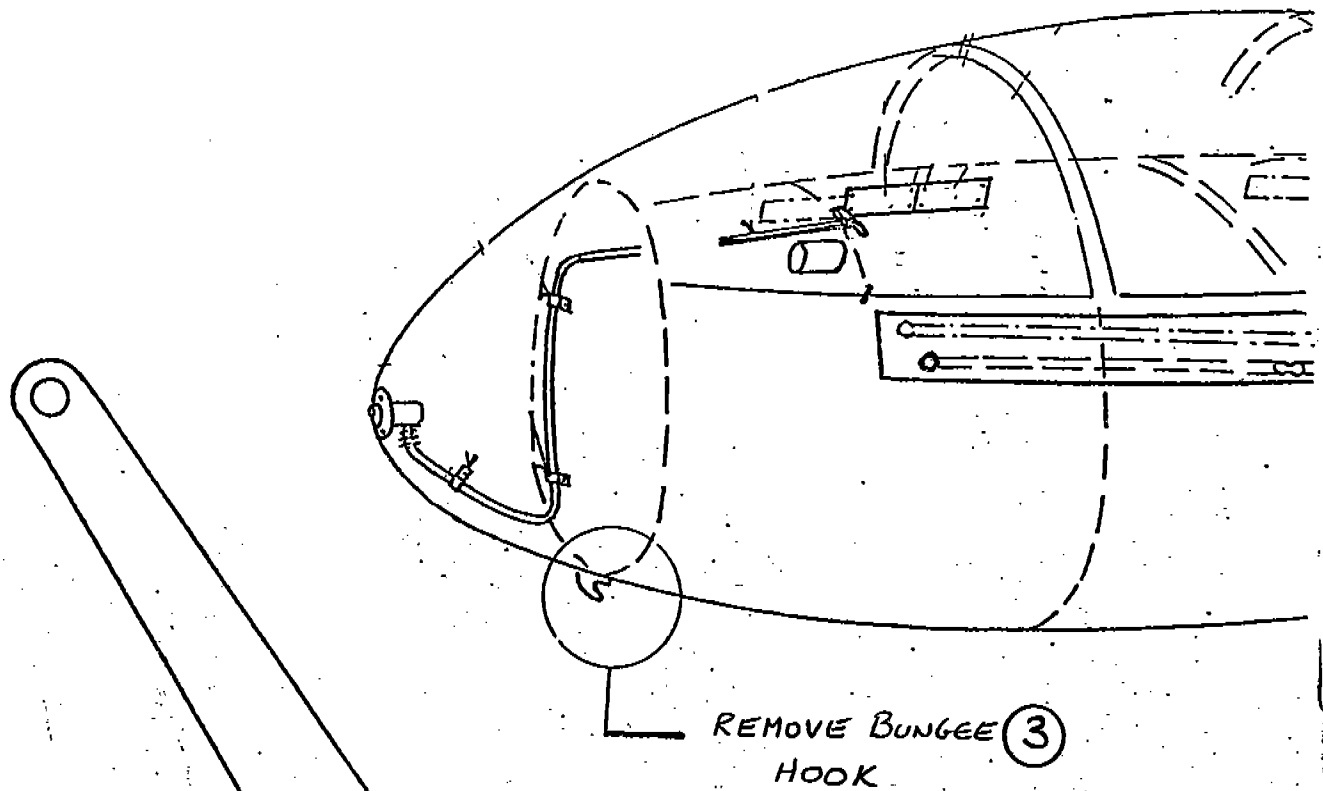
(2)

GRIND OFF SHADED  
SECTION OF HOOK  
AND ROUND OFF  
THE END OF  
THE HOOK

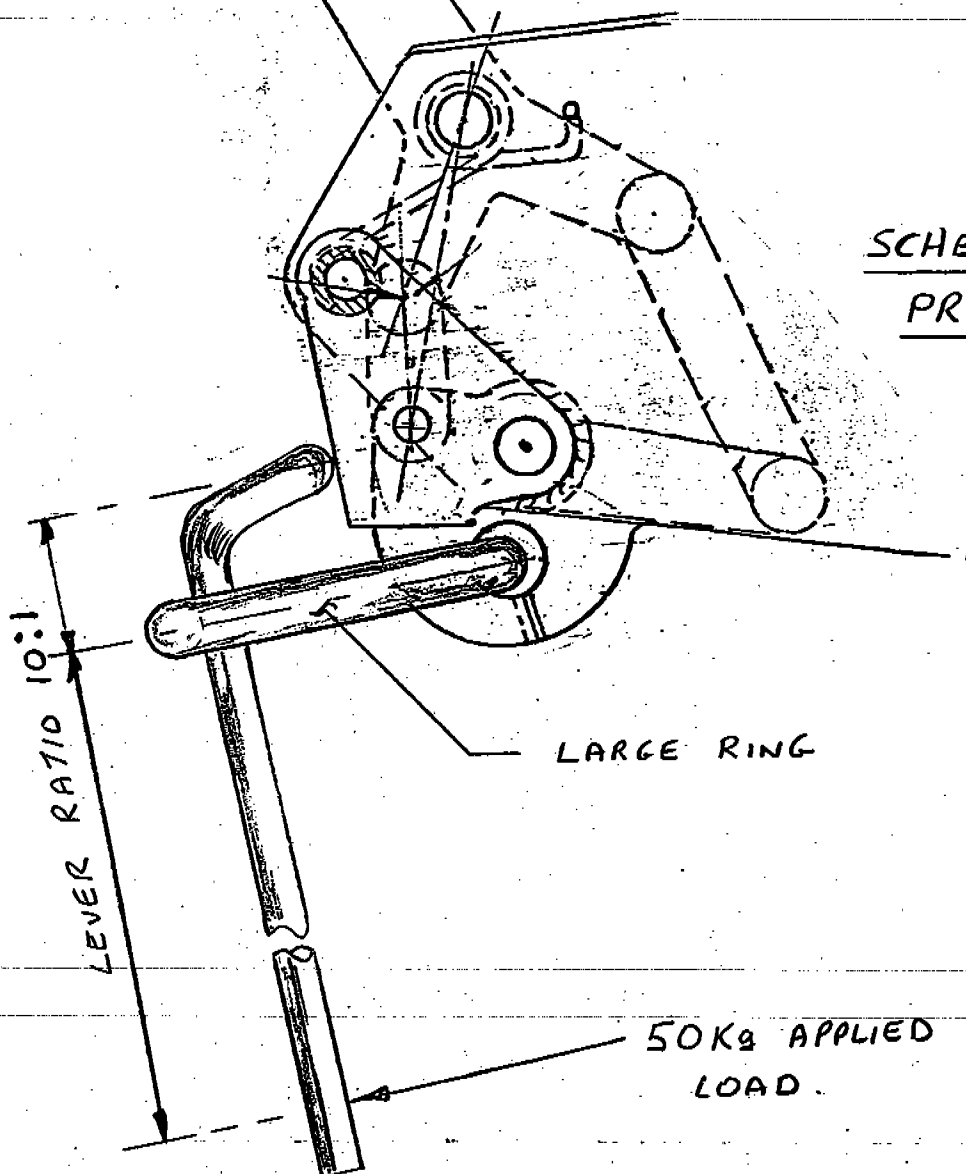
MINIMUM 45°

THIS LINE PARALLEL TO BOTTOM OF SIDE PLATES

ENLARGED DETAIL OF HOOK.

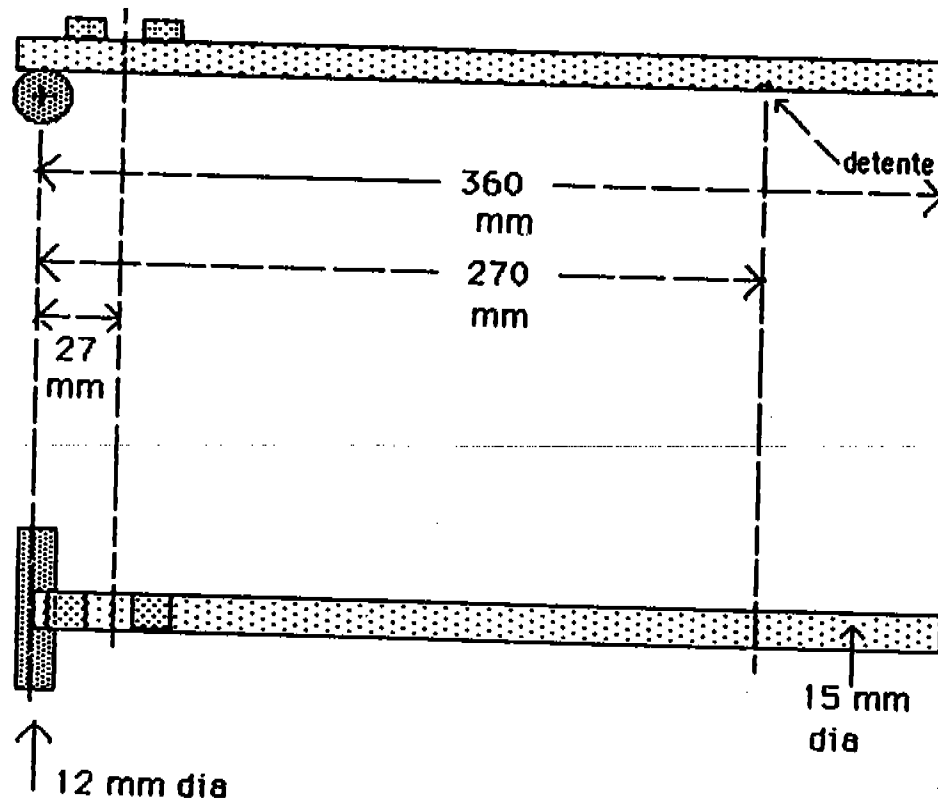


SCHEMATIC TEST  
PROCEDURE



# BLANIK RELEASE TESTER

design - Keith Hayden, Orons Club



mild steel throughout - welded construction