

## Chapter 1 GROUND HANDLING

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## Introduction

1. Due to the revised wing fold mechanism fitted to this aircraft, certain changes in the ground handling equipment and procedures are necessary to retain the ability to hold one wing folded while retaining freedom of operation of the other wing, and to enable the wings to be folded manually. In all other respects the information and illustrations in A.P. 101B-1202-1A, Cover 1, Sect. 2, Chap. 1 are equally applicable to this aircraft.

## Lock to hold one wing folded (fig 1)

2. To lock one wing in the folded position, while retaining freedom of operation of the other wing, a locking strut, Ref No. 26NA/95627, should be inserted under the jack ram eye-end connecting pin. The locking strut is held in position by a locating pin which is inserted through the two transverse diaphragms and the locking strut, and locked by an attached quick-release pin. It should be noted that both wing fold jury

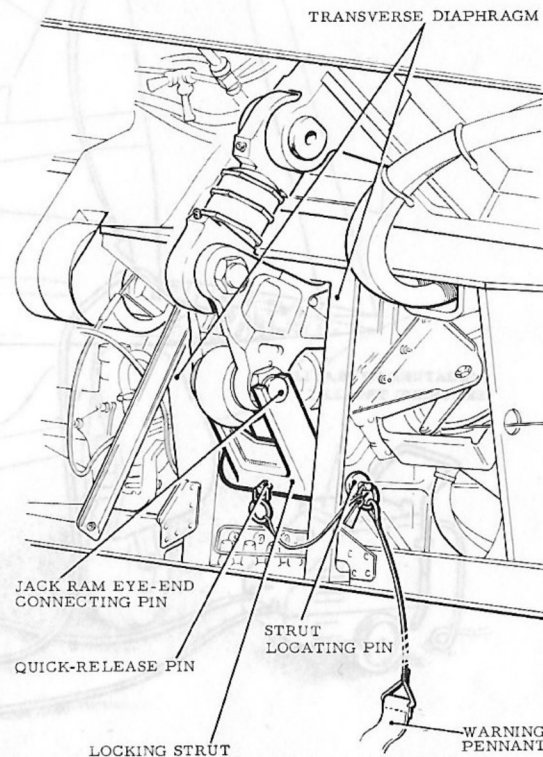


Fig. 1. Wing fold locking strut

struts (A.P. 101B-1202-1A, Cover 1, Sect. 2, Chap. 1) must be removed before a selection can be made on the wing fold selector.

## Wing folding and spreading

## Hydraulic operation

3. Wing folding and spreading is normally operated by the aircraft general services hydraulic system (Sect. 13, Chap. 6) and is controlled by a selector lever, located on the pilot's starboard console. With the hydraulic system pressurized, selection of this lever to the WING FOLD or WING SPREAD position will result in simultaneous operation of both wings to the selected position. A solenoid-operated lock, incorporated in the selector lever mechanism, prevents a FOLD selection being made when the aircraft is airborne, or a SPREAD selection when the wing fold jury struts are in position. A central INTERRUPT position enables the wings to be arrested during a folding or spreading operation, prior to a reverse selection.

4. Hydraulic pressure is automatically available when the engines are running; for servicing operations, a hydraulic servicing trolley should be connected to the general services hydraulic system servicing connections (A.P. 101B-1202-1A, Cover 1, Sect. 2, Chap. 2).

5. Folding and spreading the wings when the aircraft is supported on jacks is permissible, provided that the spar latch pins are inched into and out of engagement in the spar latch bushes. The engagement and disengagement of the latches must be closely observed; in the event of excessive malalignment between the latch pins and bushes, the operation must be terminated. It should be noted that aircraft-on-ground conditions must be simulated by removing fuse A5 and B5 from panel R-C before a selection to WING FOLD or WING SPREAD can be initiated (pre-Mod 1468).

#### Caution...

Owing to the limited deckhead clearance, folding and spreading the wings is NOT permissible in carrier hangers when the aircraft is supported on jacks.

#### Emergency hydraulic operation

6. No emergency hydraulic pressure supply for wing folding is available from within the aircraft. Should the wings fail to respond to a normal WING FOLD selection, an external hydraulic pressure supply, from a miniature servicing trolley (A.P. 101B-Cover 1, Sect. 2, Chap. 4), or an emergency wing fold accumulator, should be used. The pressure line of either the trolley or accumulator is to be connected at the appropriate wing break (fig 2); the suction line of the miniature servicing trolley should be fitted to its appropriate connection in the general services hydraulic system servicing pocket (A.P. 101B-1202-1A, Cover 1, Sect.

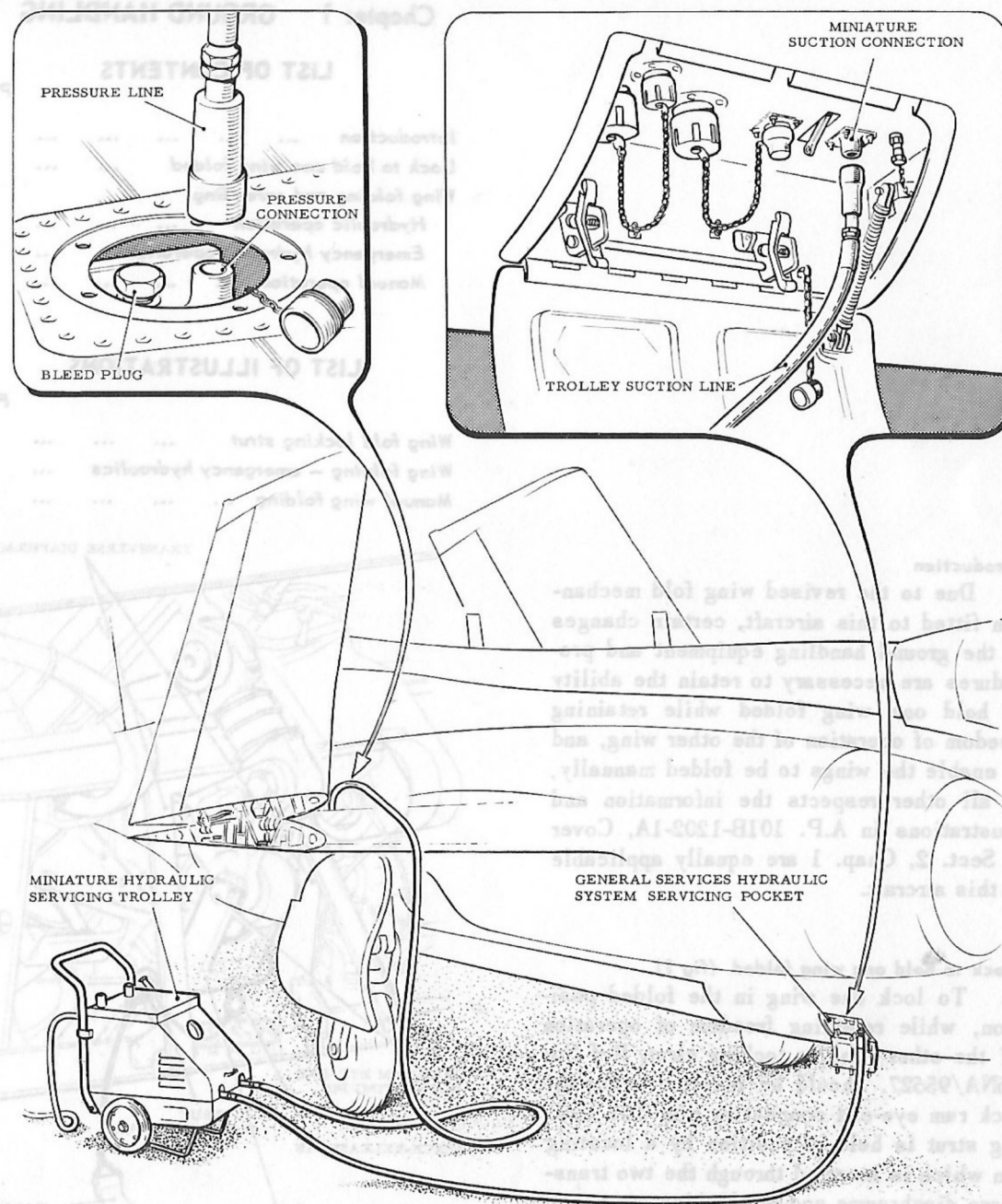


Fig.2. Wing folding – emergency hydraulics

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2, Chap. 2). Each wing break connection folds its respective wing only; to fold both wings, both connections must be used in turn. The wings cannot be operated to the spread position by this method.

7. If the selector lever can be selected to the WING FOLD position, the selection should be made and the servicing trolley started. If the selector lever cannot be operated, the bleed plug adjacent to the wing break connection should be slackened off during the time the servicing trolley is connected and locked again immediately the wing reaches the fold position. This action permits fluid from the 'spread' side of the wing fold jack to escape, preventing a hydraulic lock within the system.

**Note...**

*After the wings have been folded using an external supply the fluid level in the aircraft general services hydraulic fluid reservoir must be checked and the wing fold service bled (A.P. 101B-1202-1A, Cover 2, Sect. 3, Chap. 6V).*

**Manual operation (fig 3)**

8. **Folding.** Should damage to hydraulic piping or components preclude all possibility of hydraulic operation, the wings can be manually folded as follows:-

- (1) Move the wing fold selector lever to the WING FOLD position, if possible, or slacken the bleed plug at the wing break connection (para 7).
- (2) Remove access panel No. 492 (port) or 493 (starboard), in the lower surface of the inner plane, giving access to the rear spar latch pin mechanism.
- (3) Install a rear latch pin extractor, Part No. YB6-88-711, on to the latch jack

by removing the quick-release pin from the extractor, attaching the fulcrum bracket to the latch jack, inserting the lever between the crosshead and the jack body and re-inserting the quick-release pin through the fulcrum bracket and lever. Withdraw the rear latch pin as shown in detail A.

- (4) Position, directly beneath the front spar latch pin, a hydraulic jack (Ref No. 4Q/2293) with adapter head (Ref No. 4Q/2661) and adapter (Ref No. 26NA/95632) mounted on a Mk.1 trestle (Ref No. 4Q/2294).
- (5) Remove access panel No. 505 (port) or 506 (starboard) in the upper surface of the inner plane and unlock the front latch pin mechanism by depressing the arm of the cam to lift the lockstrut out of engagement with the step in the locking arm.
- (6) With the lockstrut still disengaged from the locking arm, slowly extend the jack beneath the front latch pin to locate the adapter with the latch pin; continue extending the jack to lift the latch pin out of engagement with the outer plane front spar latch fitting. On completion, retract and remove the jack.

**Caution...**

*During operation (6), care must be exercised to ensure that the jack and associated equipment does not foul the inner plane, and that the jacking operation is terminated as soon as the latch pin reaches its normal limit of travel.*

- (7) (a) *Pre-Mod 1736 aircraft only.*  
Remove access panel No. 446

(port) or 449 (starboard) at the wing tip, secure a suitable strop to the exposed lifting pin (detail B) and attach the strop to the hook of a mobile crane or suitable lifting tackle.

- (b) *Post-Mod 1736 aircraft only.*  
Remove access panel No. 530 (port) or 531 (starboard) at the wing tip, secure a suitable strop to the exposed lifting pin (detail B) and attach the strop to the hook of a mobile crane or suitable lifting tackle.

**Note...**

*It is recommended that a mobile crane, facing inboard at the tip as shown in fig 3, be used to fold the wing. The crane must be moved progressively inboard as the wing is being folded to maintain a vertical lift, except when the wing approaches the vertical position where the jib of the crane should lead the wing by a few inches to move the wing tip over top dead centre.*

- (8) Commence lifting the wing into the folded position. When the fully folded position is reached, fit the wing fold jury strut.
  - (9) Detach the strop from the crane. Remove the strop from the wing tip lifting pin and, if necessary, refit all access panels.
9. **Spreading.** Although it is possible to spread the wings manually by reversing operation (7), (8) and (9) of para 8, no facilities are available for manual insertion of either the front or rear spar latch pin after completion of the spreading operation.



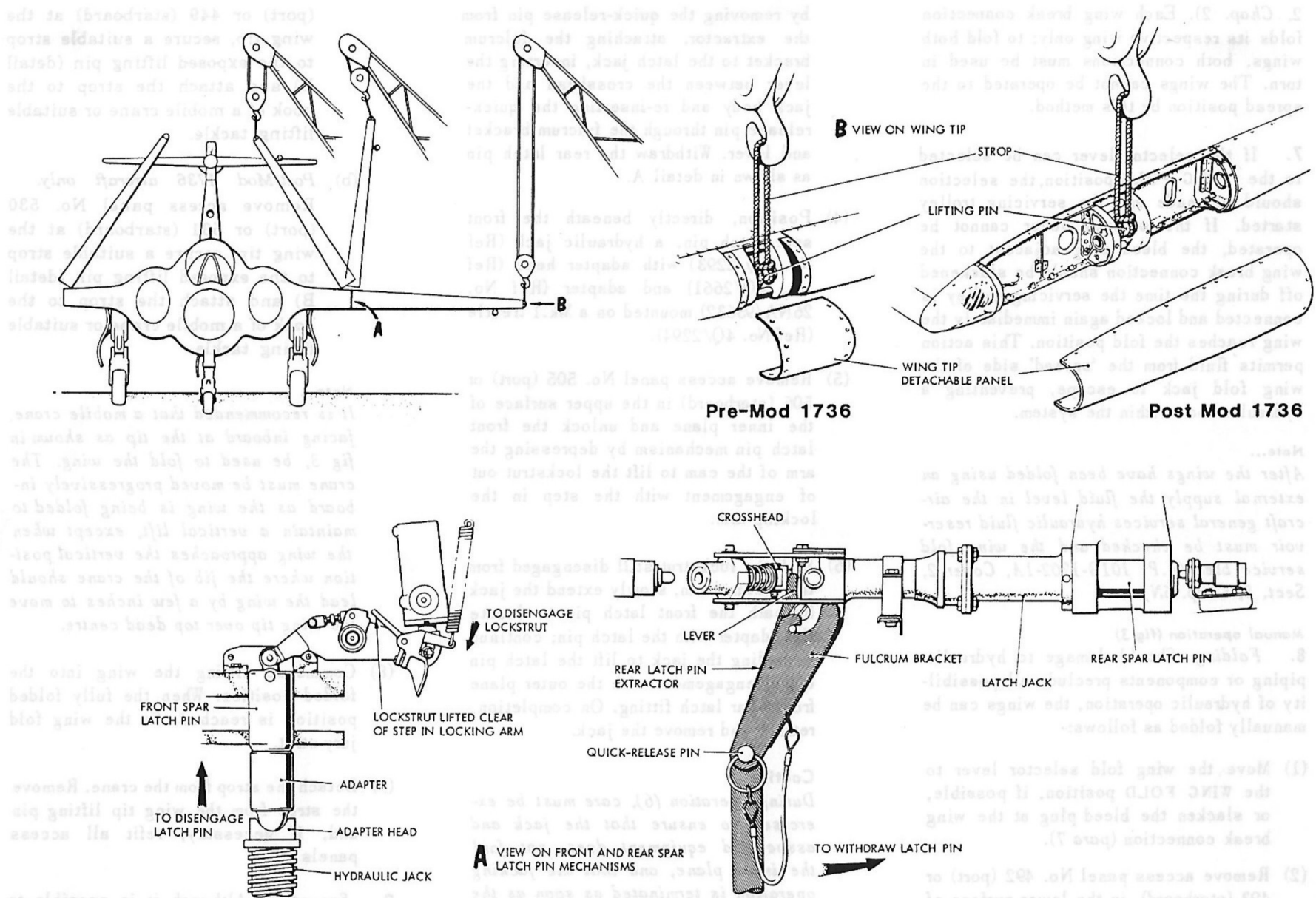


Fig. 3 Manual wing folding  
(Mod 1736 incorporated)