ARROW 1 SERVICE DATA

MAIN LANDING GEAR

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DESCRIPTION

GENERAL

1 Each main landing gear is equipped with a liquid spring shock absorber and two wheels, arranged in tandem, mounted on a bogie beam. The wheels have hydraulic disc type brakes which are applied automatically during retraction of the landing gear.

2 The landing gear is retracted hydraulically into a bay in the inner wing and when retracted is enclosed by a leg fairing, a pivot door and a wheel door. Extension of the gear is by gravity assisted by air loads when in flight.

3 The gear retracts forwards at an angle of approximately 45° to the aircraft centre line. This is achieved by setting the main pivot shaft at the appropriate angle. See fig 2. To bring the wheels into the same plane as the wheel bay, the lower portion of the main leg is rotated through an angle of 37-1/2° during retraction. To accommodate the wheels in the wheel bay they must be tilted rearwards during retraction. This is accomplished by shortening the leg, and pivoting the bogie beam from a tie-rod attached to the front of the leg. The shortening mechanism is arranged so that the liquid spring is unaffected by the shortening action.

4 The leg is braced fore and aft by a back-stay, and laterally by a telescopic side stay which also contains the down-lock. The down-lock is locked mechanically and unlocked hydraulically.

5 The up-lock is fitted in the wheel bay. It engages mechanically with a roller on the leg and is unlocked hydraulically.

MAIN LANDING GEAR (Fig 1)

6 The main leg incorporates a shortening mechanism, a torque fitting, and a sliding member which houses the shock absorber. At the lower part of the leg are located a pair of torque links, a bogie beam with two integral wheel axles, and a telescopic tie-rod. Between the sliding member and the wheel brake assemblies are located two brake torque links, one of which mounts a recuperator for the shock absorber. The recuperator is rendered inoperative on Arrow 1 aircraft.

CROSS-SHAFT AND BACK STAY (Fig 3)

7 The cross-shaft assembly on which the main leg is mounted, is located between the main spar and the front spar of the inner wing. The cross-shaft is in two sections. A spacer is fitted between the flanged inner face of each section to facilitate removal of the main leg from the aircraft. An integral lug on the spacer is the attachment point for the retraction jack rod. The rear section of the cross-shaft is integral with the back stay and incorporates a journal locating in a self-aligning rear bearing housed in a fitting attached to the main spar.

8 The main casing of the leg is mounted on the front half of the cross-shaft and is secured by a shear pin. The top of the main casing is tapered at its forward end and locates in a self-aligning bearing housed in a fitting attached to the front spar. The cross-shaft is retained in this bearing by a thrust collar which fits against the tapered face of the bearing and is secured by a washer and thrust nut. Protruding from the end of the shaft is a locking stud retained by a roll pin. A lock washer and nut fitted on this stud locks the thrust nut.

9 The back stay, which is integral with the rear section of the cross-shaft, is fitted to brace the main leg fore-and-aft. The lower end of the stay is attached to two lugs on the main casing.

MAIN CASING - EXTERNAL (Fig 1)

10 The main casing provides the lower attachment points for the back stay and the side stay, and the upper attachment point for the tie-rod. The back stay is attached to the main casing by a pin passing through two lugs on the casing. The lower end of the telescopic side stay is retained in an integral lug on the main casing. The lug also locates a fitting which carries the up-lock roller assembly.

UP-LOCK ROLLER ASSEMBLY (Fig 4)

11 The fitting securing the lower end of the side stay incorporates an integral lug which carries a spring housing for the leg fairing and also provides a vertically serrated back plate for the up-lock roller assembly. The

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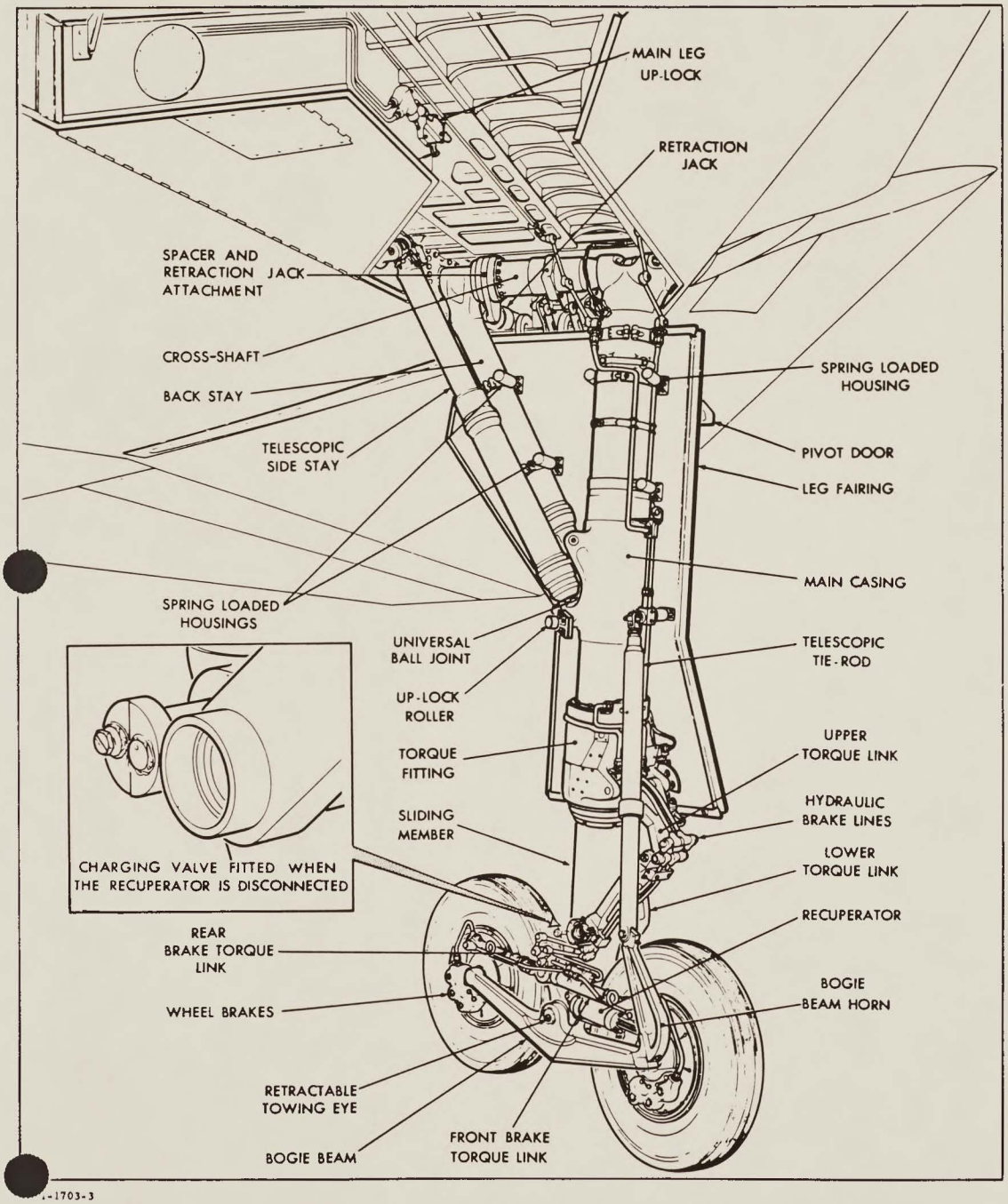

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FIG. 1 MAIN LANDING GEAR

roller assembly is attached to a horizontally serrated plate which is secured by four eccentric screws. A plate with horizontal and vertical serrations is fitted between the back plate and the roller assembly. The serrations, together with the eccentric screws, provide a two-way adjustment for the roller.

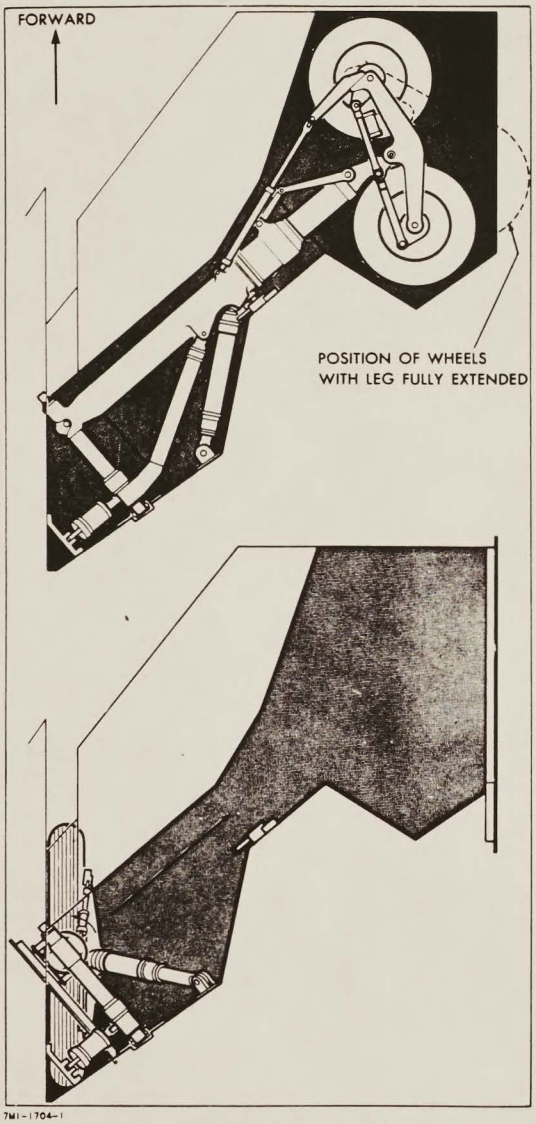

FIG. 2 MAIN LANDING GEAR OPERATION

MAIN CASING - INTERNAL (Fig 5)

12 Housed within the upper section of the leg is a shortening mechanism which withdraws the shock absorber together with the lower leg into the main casing during landing gear retraction. The shortening mechanism comprises a chain and sprocket assembly, a down-lock mechanism and a shortening sleeve.

CHAIN AND SPROCKET ASSEMBLY (Fig 6)

13 The chain and sprocket assembly consists of a double chain with one end attached to an adjustable drum mounted on top of a load transfer sleeve, and the other end to an operating cylinder in the down-lock mechanism. The drum is anchored to the main casing by a chain tension adjustment rod. The double chain passes around two sprockets attached to a fixed shortening bracket mounted on the front half of the cross-shaft, and also passes around a double sprocket attached to the top of the load transfer sleeve. The geometric arrangement of the chain and sprockets is such that, as the landing gear retracts, the chain pulls up on the operating cylinder.

14 The fixed shortening bracket is attached to the aircraft structure by an adjustment screw which passes through a barrel fitting and is retained in the fitting by a shear pin. Two locknuts secure the screw to the shortening bracket. Adjustment of the locknuts repositions the shortening bracket in relation to the structure and provides the adjustment for varying the amount of leg shortening. The chain tension adjustment is provided to remove any slack in the chain when the down-lock is fully engaged.

SHORTENING MECHANISM DOWN-LOCK (Fig 7)

15 The shortening mechanism down-lock engages to lock the leg in the fully extended position. The down-lock consists of an operating cylinder, a locking spring and a set of eight down-lock plungers. When the leg retracts, the operating cylinder is pulled upwards by the shortening chain to release the plungers from a recess around the lower section of the load transfer sleeve.

16 After the operating cylinder has moved upwards one inch it contacts the body of the down-lock and further movement of the shortening chain is transmitted through the lock to a shortening sleeve.

17 A double ball bearing fitted between the operating cylinder and the chain attachment prevents the rotary movement of the lower leg being transmitted from the operating cylinder to the shortening chain during landing gear retraction.

18 When the landing gear is lowered and the leg is fully extended, the locking spring pulls the operating cylinder downwards to force the plungers outward to lock the leg in this position. A telescopic rod attached to the operating cylinder moves a pivot lever to actuate a micro-switch mounted on the main casing. This micro-switch in conjunction with other down-lock switches supplies electrical power to the cockpit indicators.

ORTENING SLEEVE (Fig 5 and 7)

19 The shortening sleeve is connected to the down-lock by a spherical bearing. This bearing provides the inner section of the leg with a flexible joint which absorbs any movement within the main casing during landing. A pip-pin connects the lower part of the shortening sleeve to an attachment collar and to the top of the shock absorber cylinder.

20 Shortening movement is transmitted from the chain through the down-lock and shortening sleeve to the top of the shock absorber cylinder. As the shortening loads are applied to the shock absorber cylinder, it is withdrawn into the main casing without compressing the shock absorber piston rod.

21 A leg extension spring is fitted around the outside of the shortening sleeve and extends the leg as the landing gear is lowered. The spring is located between two friction washers, one being fitted at the bottom of the load transfer sleeve and the other supported by a flange at the base of the shortening sleeve.

OPERATING SLEEVE (Fig 5 and 8)

22 The operating sleeve serves to transmit the shortening movement from the attachment collar to a torque fitting located on the lower part of the main casing. The upper part of the sleeve, which carries the upper bearing, is

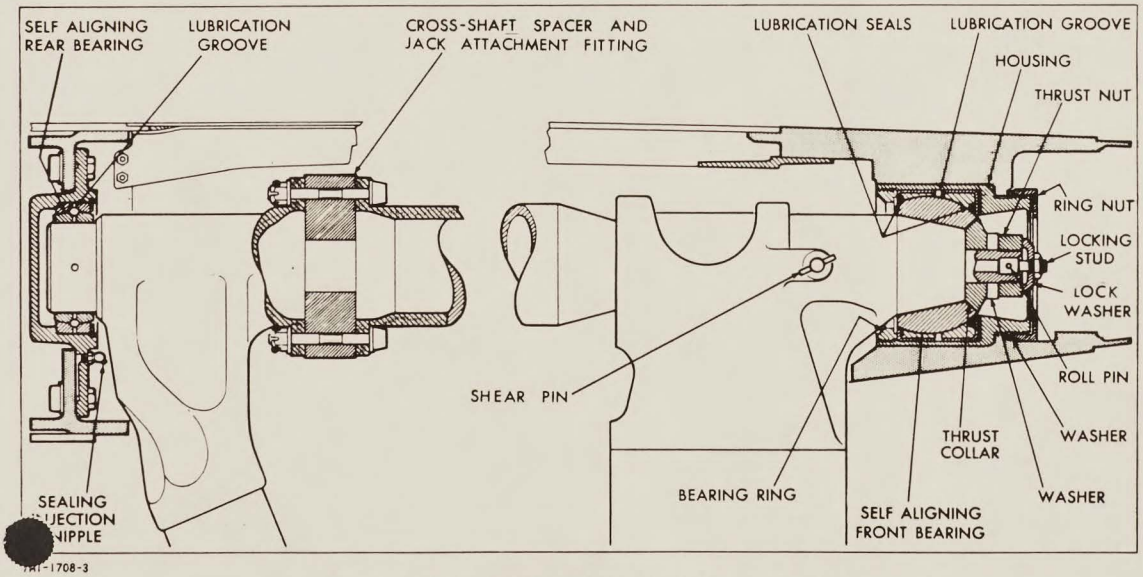

FIG.3 CROSS-SHAFT AND PIVOT BEARINGS

bolted to the attachment collar. The lower end, which carries the lower bearing, is attached to the torque fitting by four eccentric pins. The four pins protrude through the sleeve and retain the lower bearing.

23 The torque fitting is located at the base of the main casing with its lower end attached to the bottom of the operating sleeve. A bearing located on the upper end of the fitting slides over the finished surface of the main casing when the gear is retracted.

24 The torque fitting converts the shortening movement of the leg into a rotary motion and transmits this through the torque links to the lower leg. Secured to the inner surface of the torque fitting are two sets of helical cam tracks. Two cam followers are located between the cam tracks. The followers rotate on needle rollers and are secured to the main casing. During leg retraction the torque fitting is pulled upwards and the cam tracks impart the rotary motion to the torque fitting. The contour of the cam tracks is such that the

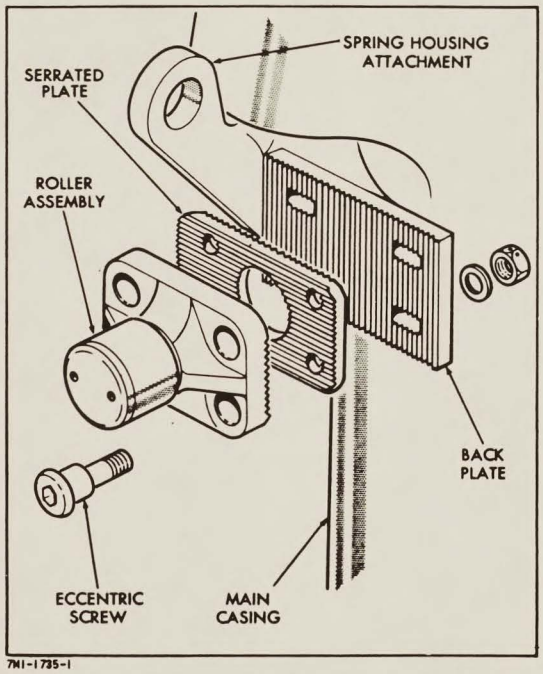

FIG.4 LEG UP-LOCK ROLLER ASSEMBLY

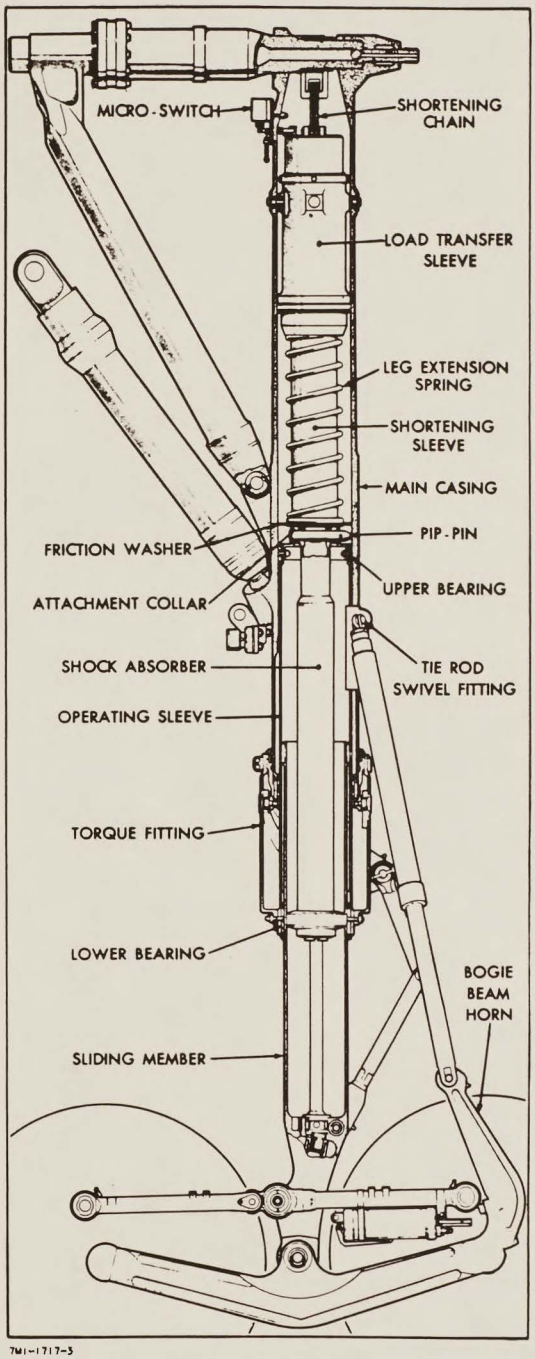

FIG.5 MAIN LEG SECTIONAL VIEW

first movement of the torque fitting is straight upwards and allows a castellated curvic coupling to disengage.

25 The curvic coupling is engaged during the final movement of the leg extension and prevents the torque fitting from rotating when the gear is fully extended. The curvic coupling consists of an upper half and a lower half. The upper half is splined to the torque fitting and is retained by pins and a band clamp. This half forms the upper section of the torque fitting which, together with the upper bearing, slides over the lower surface of the main casing. A scraper ring is attached to the upper end of the coupling to remove any accumulation of foreign matter from the sliding surface. The lower half is splined to the base of the main casing and is located by roll pins.

26 The four eccentric pins which locate the torque fitting to the operating sleeve also provide the means of positioning the torque fitting in alignment with the cam roller. A locking pad is fitted over each pin and these are secured by a band clamp around the base of the torque fitting.

SLIDING MEMBER (Fig 5)

27 The sliding member carries the lower part of the main leg assembly. The upper part of the member slides within the bore of the operating sleeve where it is located by a bearing and retained by the shock absorber. The bottom of the member is forked to accommodate a pivot pin which carries the bogie beam. An integral lug on the lower part of the member forms the main attachment point for two brake torque links. A ball type jacking point for jacking the main wheels is located on the bottom of the member.

SHOCK ABSORBER (Fig 5)

28 The liquid spring type shock absorber is housed within the sliding member and the operating sleeve. The cylinder of the shock absorber is connected to the shortening sleeve by a pip-pin and the piston rod end is attached to the bottom of the sliding member by a special retaining nut. The nut is locked by a tubular locking socket located between the fork of the sliding member.

TORQUE LINKS

29 The torque links are fitted to prevent rotation of the lower leg during taxying and landing and to transmit the rotary motion of the torque fitting to the lower part of the leg during landing gear retraction.

30 The upper link is attached to the two lugs on the lower part of the torque fitting and is connected to the lower link by a bolt, nut and a distance washer. The lower torque link fork end is attached to the sliding member by a hinge pin. The inboard fork of the lower torque link mounts a cam which actuates a recuperator valve housed in the sliding member. (Not fitted on Arrow 1).

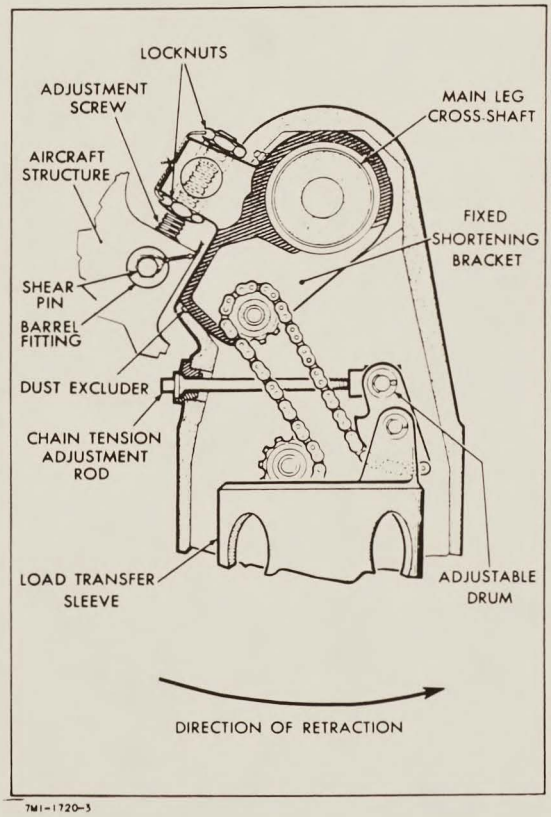

FIG.6 CHAIN AND SPROCKET ASSEMBLY

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BOGIE BEAM

31 The bogie beam pivots between the fork at the bottom of the sliding member. The pivot pin is secured to the beam by a bolt passing through the centre of the beam and is supported in two plain bearings, one in each arm of the fork. An earthing wire is attached to the lower end of the retaining bolt. Housed within the hollow pivot pin is a retractable towing eye which is spring-loaded to the housed position.

32 An integral axle at each end of the beam carries the twin tandem wheels. A bogie beam horn attached to the front of the beam provides the attachment point for the lower end of a telescopic tie-rod.

TIE-ROD

33 The telescopic tie-rod is fitted between a swivel fitting, attached to a lug on the main casing, and the bogie beam horn. The tie-rod is spring-loaded to the extended position and tilts the bogie beam forward when the landing gear is retracting. This locates the wheels in the correct position for stowage in the wheel bay. The spring-loaded tie-rod also dampens oscillation of the bogie beam when the aircraft lands.

LEG SHORTENING AND ROTATION
(Figs 5, 6, 7 and 8)

34 When the landing gear retracts, the distance between the sprocket on the fixed shortening bracket and the chain attachment point on the leg increases. See fig 6. This action pulls the free end of the chain, attached to the operating cylinder, in an upward direction. See fig 7. The operating cylinder is lifted, compressing the locking spring. When the lower and smaller end of the cylinder aligns itself with the down-lock plungers the plungers are forced inwards by the action of the tapered face and the down-lock is released. After the operating cylinder has lifted approximately one inch the plungers are fully released and the cylinder contacts the down-lock body. The chain movement is now transmitted through the down-lock to the shortening sleeve.

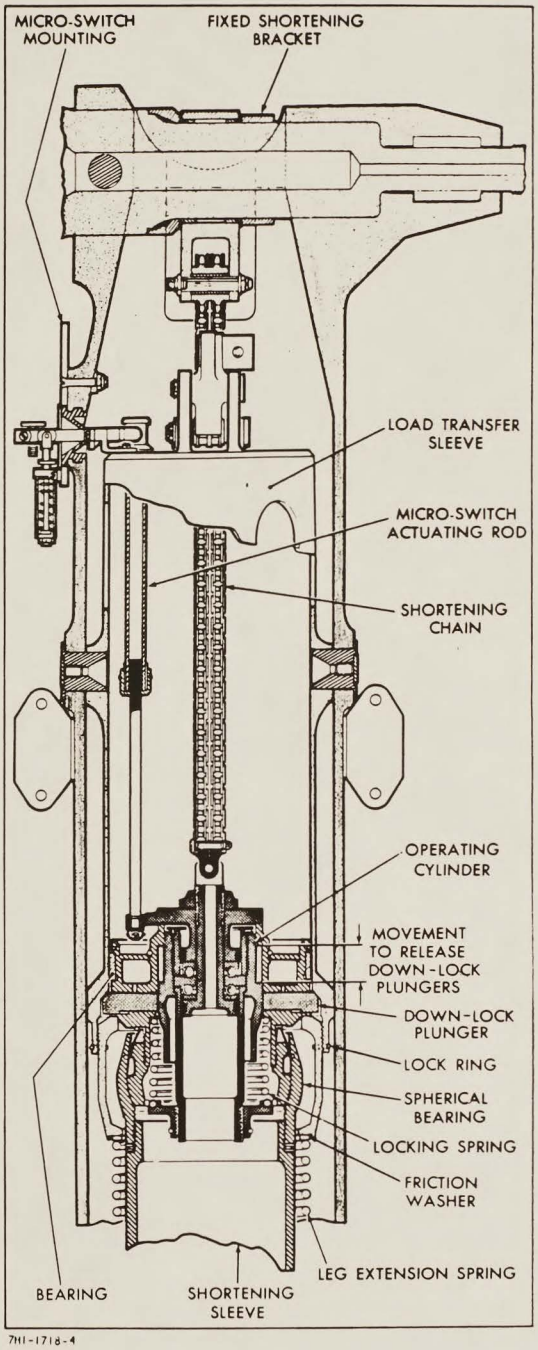

FIG. 7 MAIN LEG SHORTENING MECHANISM

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35 Further retraction of the leg now pulls the shortening sleeve upwards and compresses the leg extension spring. The shock absorber and operating sleeve, which are secured to the shortening sleeve, are pulled into the main casing and the leg is shortened progressively as the leg retracts. The sliding member and shock absorber which remain fully extended throughout the operation are lifted upwards with the operating sleeve. The spring-loaded telescopic tie-rod, which is secured to the main casing, tilts the bogie beam forward as the sliding member, shock absorber and operating sleeve are pulled into the main casing.

36 Simultaneously with leg shortening, the movement of the operating sleeve is transmitted to the torque fitting. The initial movement of the operating sleeve lifts the torque fitting upwards and disengages the castellated teeth of the curvic coupling. Further movement of the operating sleeve causes the stationary cam followers to impart a rotary motion to the cam tracks and the torque fitting. This motion is transmitted through the torque links to the sliding member and bogie beam.

37 With the main leg shortened and partially rotated, and with the main wheels tilted by the tie-rod, the main leg and wheels are correctly positioned for stowage into the wheel bay.

38 Leg extension together with rotation of the lower leg occurs as the landing gear is lowered. Lowering the leg progressively releases the tension on the leg extension

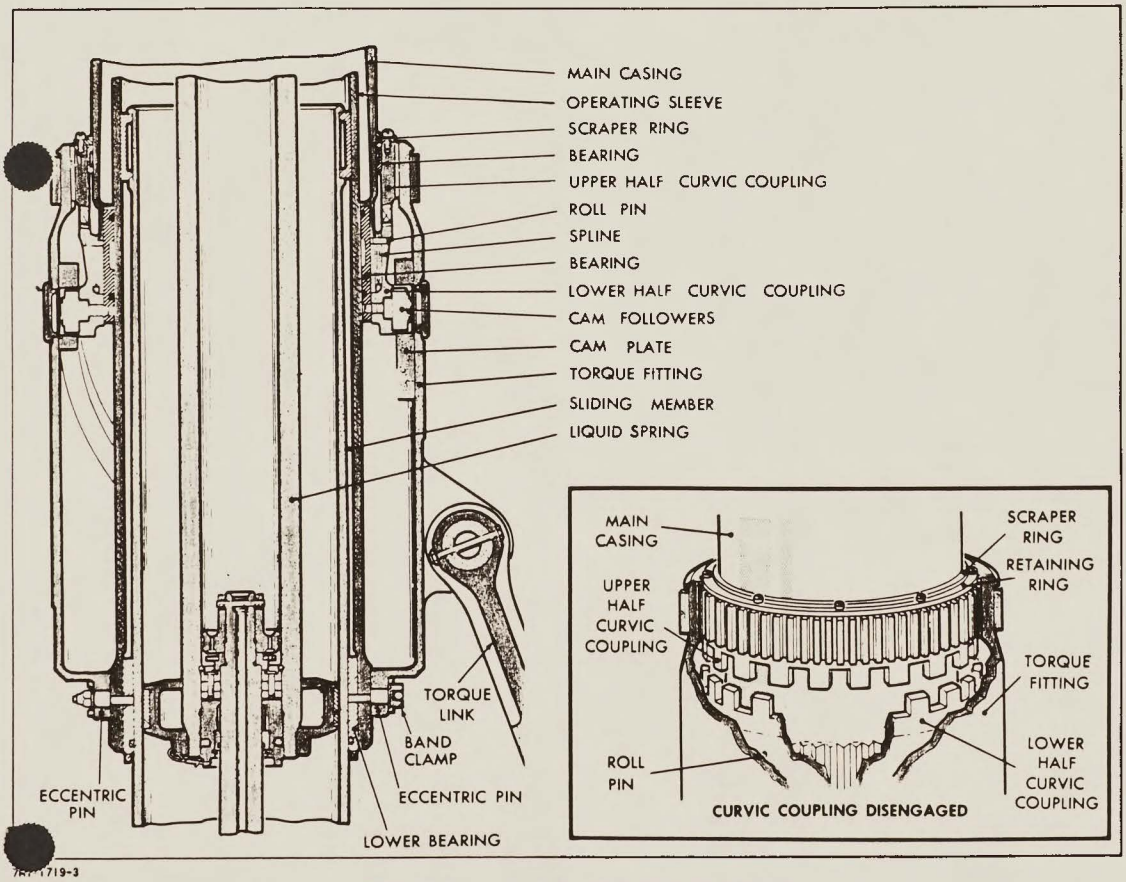

FIG.8 MAIN LEG TORQUE FITTING

spring and the operating sleeve is forced out of the main casing. The downward movement of the torque fitting rotates the lower leg until the wheels are aligned with the centre line of the aircraft. The final movement of the torque fitting engages the castellated teeth of the curvic coupling and locks the leg against rotation. When the leg is fully extended, the final movement of the shortening chain permits the down-lock locking spring to extend and the operating cylinder is pulled downwards. The down-lock plungers are forced outward and the leg is locked in the fully extended position. The final movement of the operating cylinder actuates a micro-switch which supplies electrical power to the cockpit indication.

BRAKE TORQUE LINKS

39 The front and rear brake torque links are attached to the lower part of the sliding member to provide an anchor for the wheel brake friction pads. The outer ends of the links carry spherical bearings which are attached to the wheel brake torque arms. The front link has two integral collars which mount a recuperator for the shock absorber. The hollow front link is internally sealed and connected with the nitrogen end of the recuperator. See fig 9.

SHOCK ABSORBER RECUPERATOR SYSTEM (Fig 9)

40 A recuperator system is fitted to the main leg but is disconnected on the Arrow 1 installation. When operative the recuperator maintains the shock absorber at the correct pressure and operates in conjunction with a recuperator valve which is actuated by a cam on the lower torque link.

41 The recuperator is mounted on the front brake torque link and consists of a cylinder with a floating piston. The forward end of the cylinder is connected to the inside of the front brake torque link and both of these sections are charged with nitrogen through a charging valve fitted to the front end of the cylinder. The rear end of the cylinder is filled with shock absorber fluid through a charging valve, and is connected by pipelines and a swivel coupling to the recuperator valve housed in the lower part of the sliding member.

42 An oil contents indicator is fitted at the front end of the cylinder. This indicator is in the form of a tube having a longitudinal slot calibrated in ^{o}F. Within the tube is housed a telescopic rod connected to the floating piston. The indicator is calibrated in ^{o}F so that the recuperator may be charged with the correct amount of oil for the prevailing ambient temperature. The rear end of the cylinder locates a minimum safe working pressure indicator. The indicator consists of a spring-loaded cranked pointer actuated by a plunger in the end of the cylinder. The pointer touches the side of the cylinder when the nitrogen pressure within the unit is above the minimum safe working pressure.

RECUPERATOR VALVE (Fig 9)

43 The recuperator valve is housed in the lower part of the sliding member and is actuated by the cam on the lower torque link each time the shock absorber is fully extended. Extension of the shock absorber causes the cam to depress an actuating rod and open a poppet valve. This connects the recuperator with the inside of the shock absorber, by a drilling through the shock absorber piston rod. The drilling incorporates a gravity valve at its extreme lower end to prevent loss of fluid when the recuperator valve is removed.

44 The outer end of the actuating rod is forked to accommodate a roller which contacts the cam attached to the lower torque link. A waisted section on the rod is aligned with the fluid inlet to allow passage of fluid through two longitudinal holes in the rod. Around the outside of this section a scroll groove caters for thermal expansion of the fluid between the recuperator and the inside of the shock absorber when the main leg is retracted into the wheel bay.

45 The inner end of the valve stem carries a spring-loaded plate valve which seals the two holes in the actuating rod. Fluid from the recuperator overcomes the spring to pass through the valve. The poppet valve at the end of the stem sits on a seat integral with the body and is spring-loaded to the closed position.

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SIDE STAY (Fig 10)

46 The telescopic side stay is fitted between the main spar of the inner wing and the main casing to brace the main leg against side loads. The side stay also provides the downlock for the main leg by an internal locking mechanism which is locked mechanically and unlocked hydraulically.

47 The unit consists of a cylinder and a sliding member incorporating a spring-loaded piston rod and a plunger assembly. The lower end fitting of the cylinder houses a ball joint which is retained in a lug on the main casing. The upper end of the sliding member is secured by an attachment pin locating in a swivel bearing, housed in a fitting attached to the main spar. The two sections are coupled at their inner ends by a bearing and a retaining nut recessed into the inner end of the cylinder.

48 The piston rod, housed within the sliding member, has a piston at its upper end which locates in a cylinder in the top of the sliding member. The rod is spring-loaded by a return

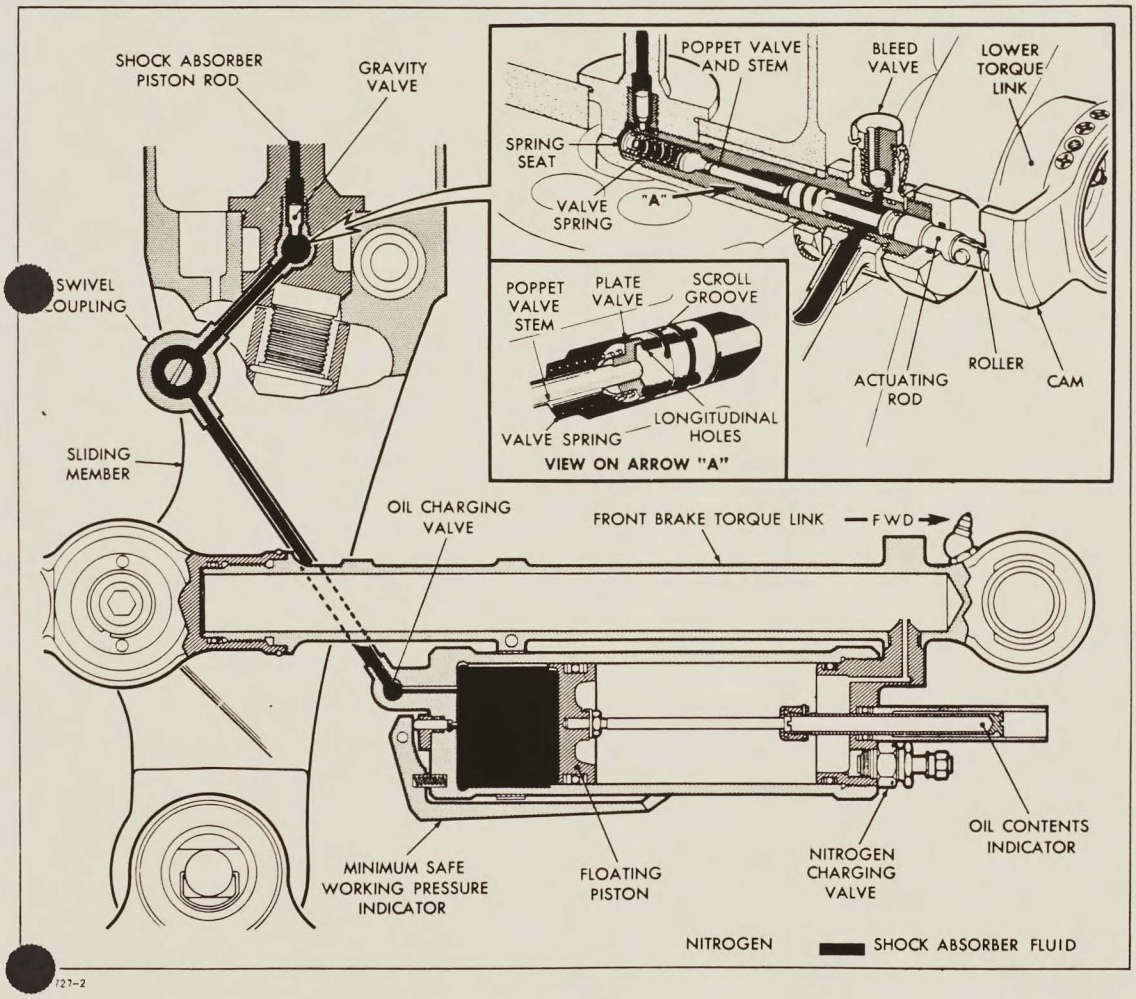

FIG.9 SHOCK ABSORBER RECUPERATOR SYSTEM

spring fitted between a flange on the rod and a spring stop mounted on the rod and retained in the bore of the sliding member. A locking cone attached to the lower end of the piston rod locks the side stay in the extended position by retaining the plungers in the locking recess at the upper end of the cylinder. A micro-switch mounted on the upper end of the sliding member is actuated by a lever, pivoting on the switch mounting bracket, and connected to a spring-loaded indicator rod housed in the upper end of the sliding member. The side stay is charged with 10 cu in of oil (MIL-O-6083) through a plug on the inner end of the cylinder to provide lubrication for the locking cone and plunger assembly.

49 When the landing gear is selected up, hydraulic pressure is supplied to the end of the piston rod. This moves the locking cone downward, disengages the plungers and unlocks the side stay. As the landing gear retracts the cylinder and the sliding member telescope until the landing gear engages its up-lock in the wheel bay. When the landing gear is selected down the return spring remains compressed due to the locking cone being retained by the plungers. As the landing gear extends, the side stay extends until the plungers reach the recess in the inner end of the cylinder. When this occurs the return spring lifts the locking cone and the plungers are forced outward to lock the side stay and the main landing gear in the down position.

LEG FAIRING (Fig 1 and 11)

50 The leg fairing is attached to the main leg and back stay by nine spring-loaded housings. With the gear retracted these take up any movement of the leg due to flexing of the wing in flight. The two lower housings each incorporate a cam operated locking device which locks the housings when the landing gear is extended and prevents the airflow from forcing the fairing away from the leg. These two housings are mounted on lugs on the main leg while the remainder are attached to the leg and back stay by band clamps. Each housing is connected to a bracket on the fairing by a flat-head pin passing through the bracket and the eye-end of the spring-loaded rod in each housing.

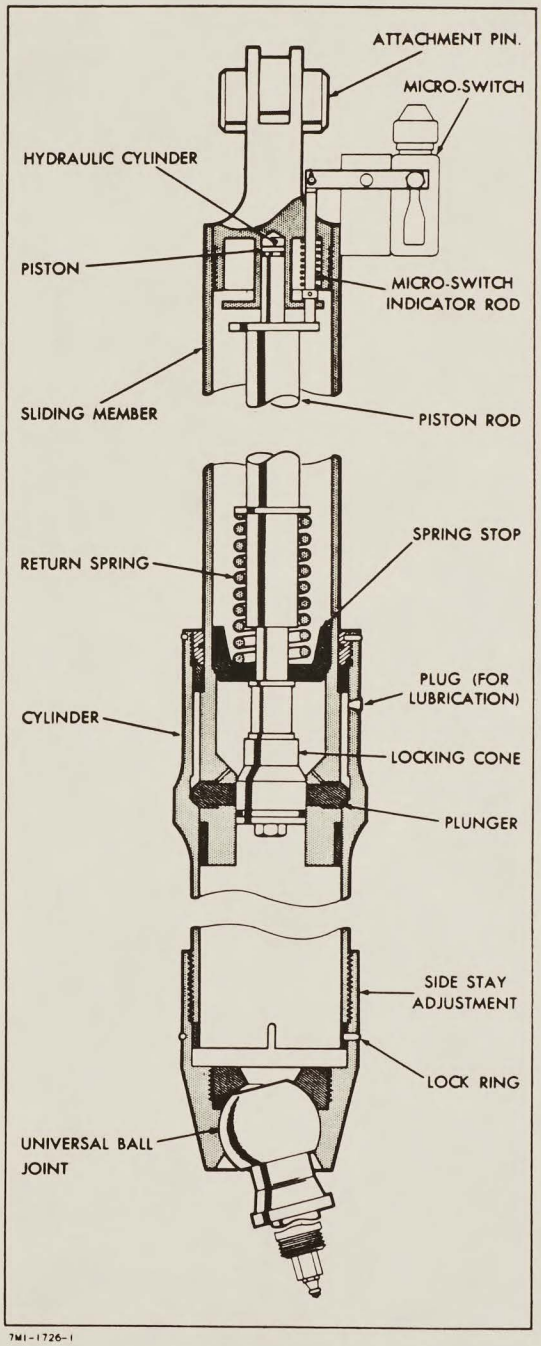

FIG.10 TELESCOPIC SIDE STAY

51 Each of the two lower housings (see fig 11) are fitted with two spring-loaded cams connected by a tie-bar and pivotting on two lugs on the outside of the spring housing. Two coil springs are retained within each housing by a rod, a washer and a nut. The washer has two lugs which locate in slots in the body of the housing. The cams are located on the underside of the lugs when the landing gear is extended and prevent compression of the springs. When the landing gear is retracted a striker in the wheel bay actuates a lug on the cams to release the cams from the underside of the washer. The springs are then free to take up any movement of the leg.

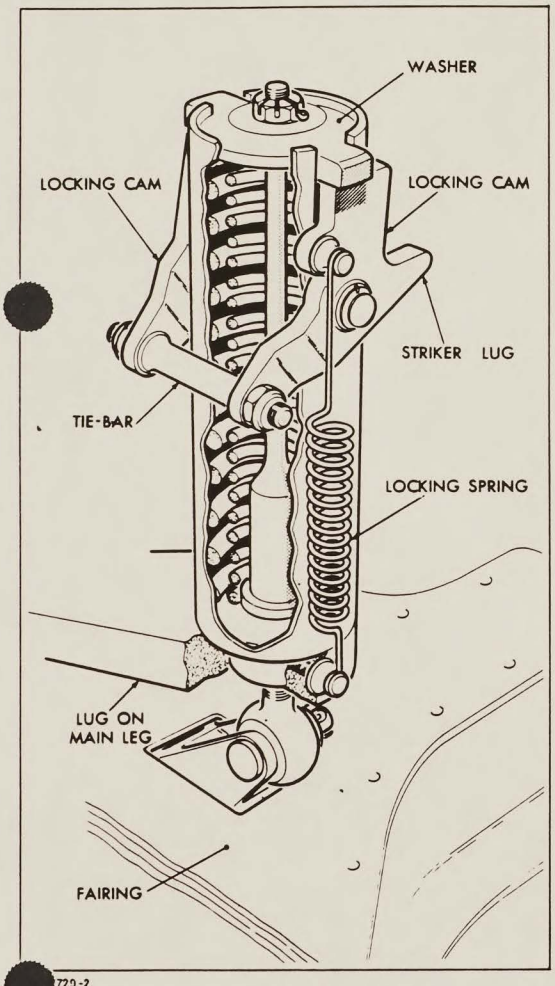

FIG. 11 LEG FAIRING LOWER SPRING HOUSINGS

PIVOT DOOR AND LINKAGE (Fig 12 and 13)

52 The pivot door covers the gap between the top of the leg fairing and the wing skin when the landing gear is retracted. The pivot door is hinged to the wheel bay structure by a main hinge arm and a stabilizer arm. These arms are attached to formers in the pivot door structure by bolts located in oversize holes in the channel section of the formers. The inner sides of the channel sections are fitted with gripping surfaces which mate with serrated plates riveted to the lower end of each arm. The serrations and the oversize holes provide adjustment for the correct seating of the pivot door in relation to the leg fairing and wing skin. Two main links are attached to the door and these connect with two outer links secured to mounting brackets in the wheel bay. The door operating linkage consists of two adjustable arms connected to a bracket attached to the landing gear cross-shaft and to the main links. The arms provide adjustment to ensure that the door fits flush with the wing skin.

MAIN WHEEL DOOR (Fig 14)

53 The main wheel door, together with the leg fairing and pivot door complete the contour on the underside of the inner wing when the landing gear is retracted. When flight stresses flex the wing the leg is lifted from its up-lock and the weight of the leg is supported on two rubber pads attached to the wheel door. The door is attached chordwise to the inboard end of the inner wing by a piano hinge and is operated by a hydraulic jack incorporating a two-stage lock to prevent block back. The cylinder of the jack is connected to a bracket on the door while the assembly at the end of the piston rod is mounted in the wheel bay.

54 The door is fitted with five serrated brackets each of which carry a mating serrated plate with an integral lug. The lugs engage with the latches of five up-locks when the door is closed. The latches are locked mechanically by spring units and are unlocked hydraulically by hydraulic release jacks. Up-locks 2 and 3, and up-locks 4 and 5, are interconnected in

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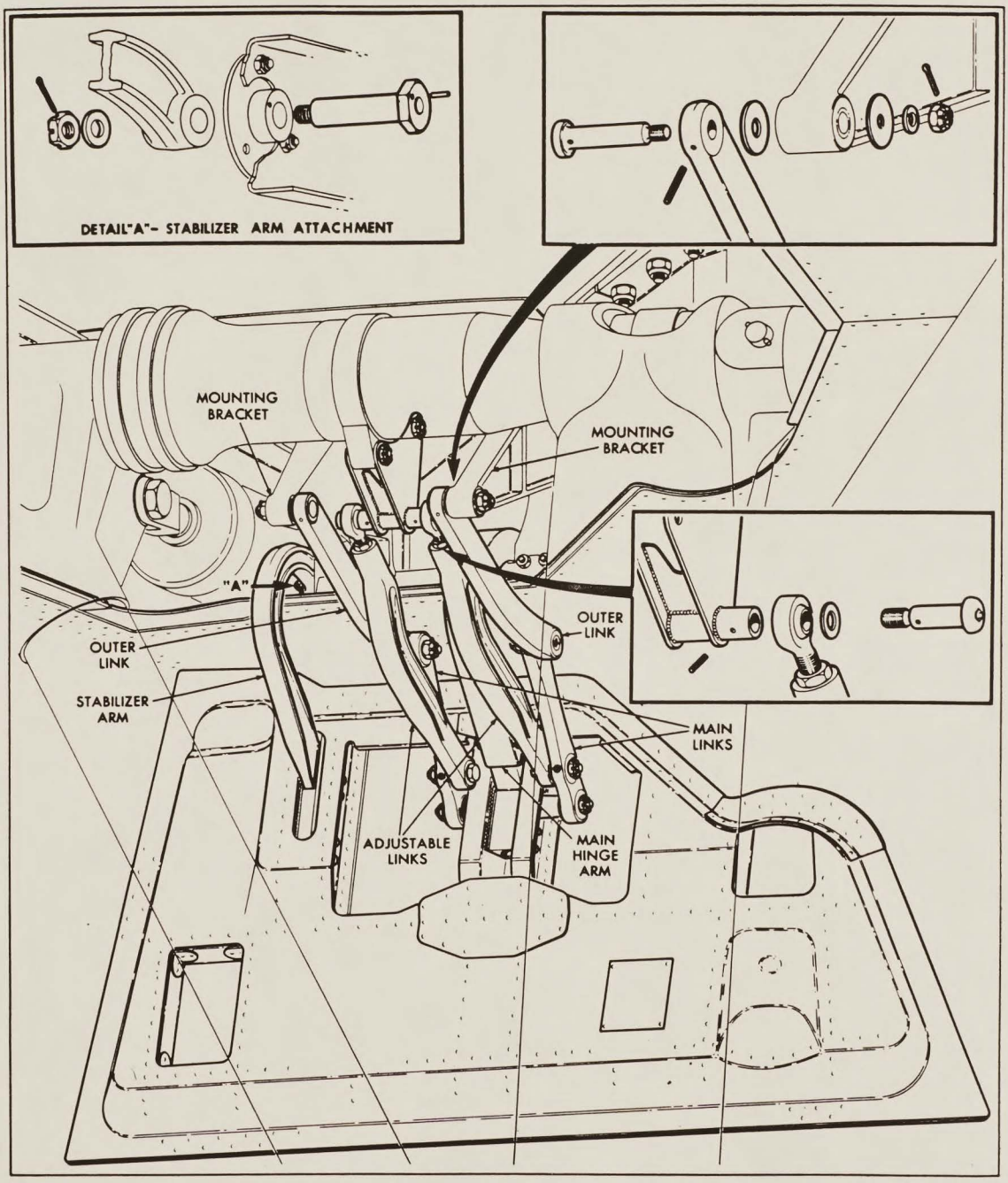

FIG. 12 PIVOT DOOR

pairs. The latches of each pair are joined by an adjustable connecting rod so that one spring unit and one hydraulic jack will operate both latches. Up-lock No. 1 is independent having its own spring unit and hydraulic release jack.

55 When the landing gear is retracted the door is locked by the lugs snapping into engagement with the latches against the loading of the spring units. The latches are held in the locked position by the springs when the hydraulic release jacks are open to return pressure. On selection of landing gear down, hydraulic pressure is supplied to the jacks, the springs are compressed and the latches are opened, releasing the lugs and allowing the door to be opened by the door jack.

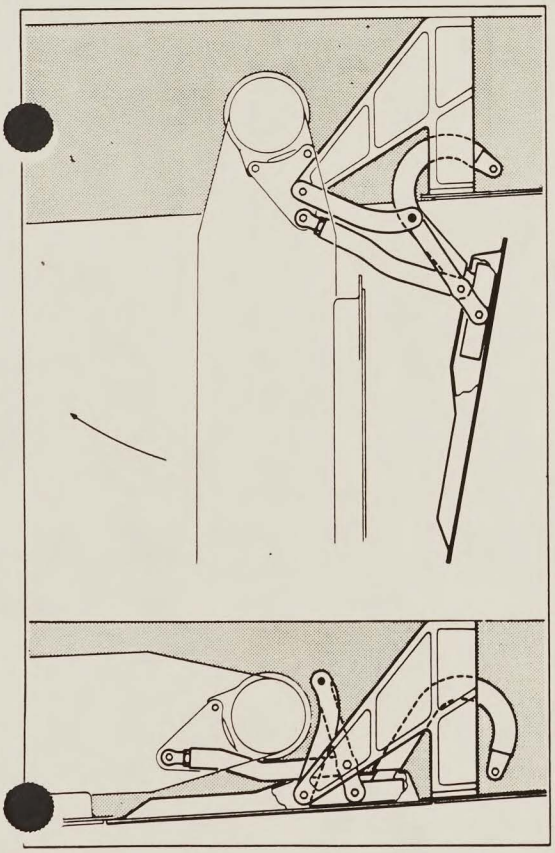

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FIG. 13 PIVOT DOOR OPERATION

MAIN LEG UP-LOCK (Fig 15)

56 The main leg up-lock is mounted on the wheel bay diaphragm and engages with the adjustable roller on the main leg when the landing gear is retracted. The up-lock is engaged mechanically on retraction and released hydraulically when the landing gear has been selected down and the main wheel door jack has reached the first-stage blow-back lock position.

57 The up-lock assembly consists of a latch, a cam lever, a spring unit and a hydraulic release jack. The latch is mounted on a bearing with the upper end connected to the spring unit and located adjacent to the piston rod of the release jack. The cam lever also pivots on a bearing and contacts a spring-loaded lever to actuate a sequence valve. A coil spring attached to the cam lever returns the lever when the gear is lowered. When the landing gear is retracted the gear is locked up by the roller snapping into engagement with the latch against the loading of the spring unit. The latch is held in the locked position by the spring unit when the release jack is open to return pressure. When hydraulic pressure is supplied to the jack, the springs are compressed and the latch is actuated to release the roller.

MAIN WHEELS (Fig 16)

58 The two wheels of each main landing gear are arranged in tandem and are mounted on the bogie beam axles. Each wheel is of the split hub type with two halves secured together by attachment bolts. Each bolt is locked by a locking cap and clip. A seal is fitted between the two halves, to enable tubeless or conventional tires to be fitted. Each wheel is mounted on two tapered roller bearings and is retained on the axle by a washer, wheel nut and locking pin. A dust excluder is fitted to the inner bearing and a hub cap is fitted over the outer bearing and wheel nut. A set of ten driving blocks for the friction plates of the brake assembly are located in the hub and secured by countersunk screws.

ARROW 1 SERVICE DATA

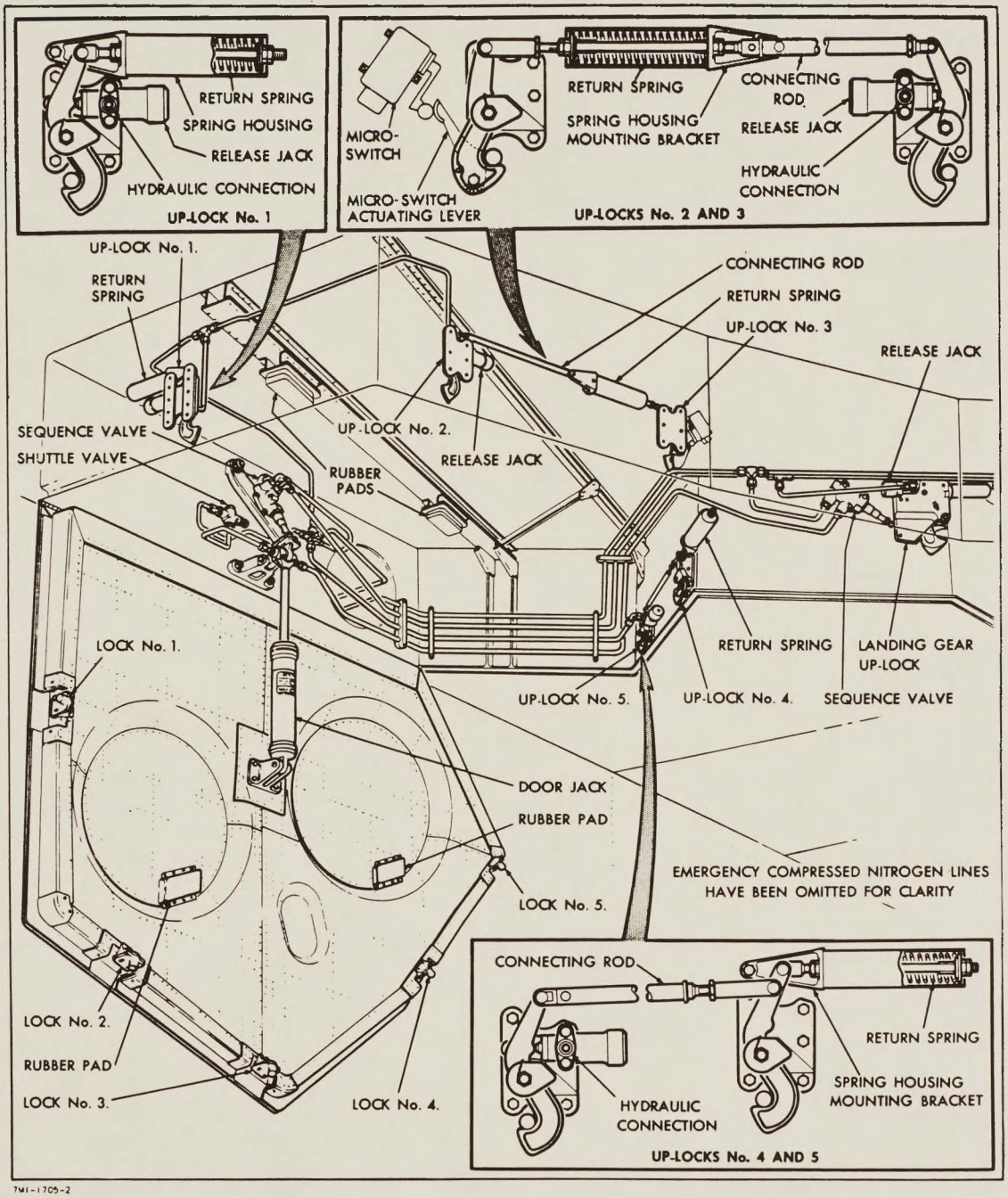

FIG. 14 MAIN WHEEL DOOR

ARROW 1 SERVICE DATA

WHEEL BRAKES (Fig 17)

59 The wheel brakes are of the hydraulic disc type and are self adjusting to compensate for wear in the friction pads. Each brake assembly is housed within the wheel and consists of two steel friction plates and three sets of three composite friction pads together with a hydraulically operated triple piston assembly.

60 The friction plates of the assembly are keyed to the interior of the wheel by ten driving blocks. The plates rotate with the wheel and provide a braking surface for the friction pads.

61 The outer and inner sets of friction pads are recessed into a pressure plate and back plate respectively. The centre set is recessed into a movable carrier. The pressure plate, movable carrier and back plate are in the form of segments and are mounted on two brake bolts which screw into the back plate. The pressure plate and carrier slide along the bolts when brake pressure is applied. The bolts also retain the triple piston assembly to the torque arm which is mounted on the bogie beam axle and attached to the appropriate brake torque link. Two additional brake bolts pass through the triple piston assembly, the torque arm and the movable carrier. The bolts are retained in the back plate.

62 When the brake pedals are depressed, hydraulic pressure is applied to the triple piston assembly so that each piston extends to force the pads and plates together and against the back plate, causing the wheel to brake. When the brake pedals are released the pads and plates are freed by a spring within each piston assembly. The piston assembly incorporates a device providing self adjustment of the brakes when wear occurs in the friction pads. For description of wheel brake hydraulics see Arrow 1 Service Data - Section 7 - Wheel Brakes Hydraulics.

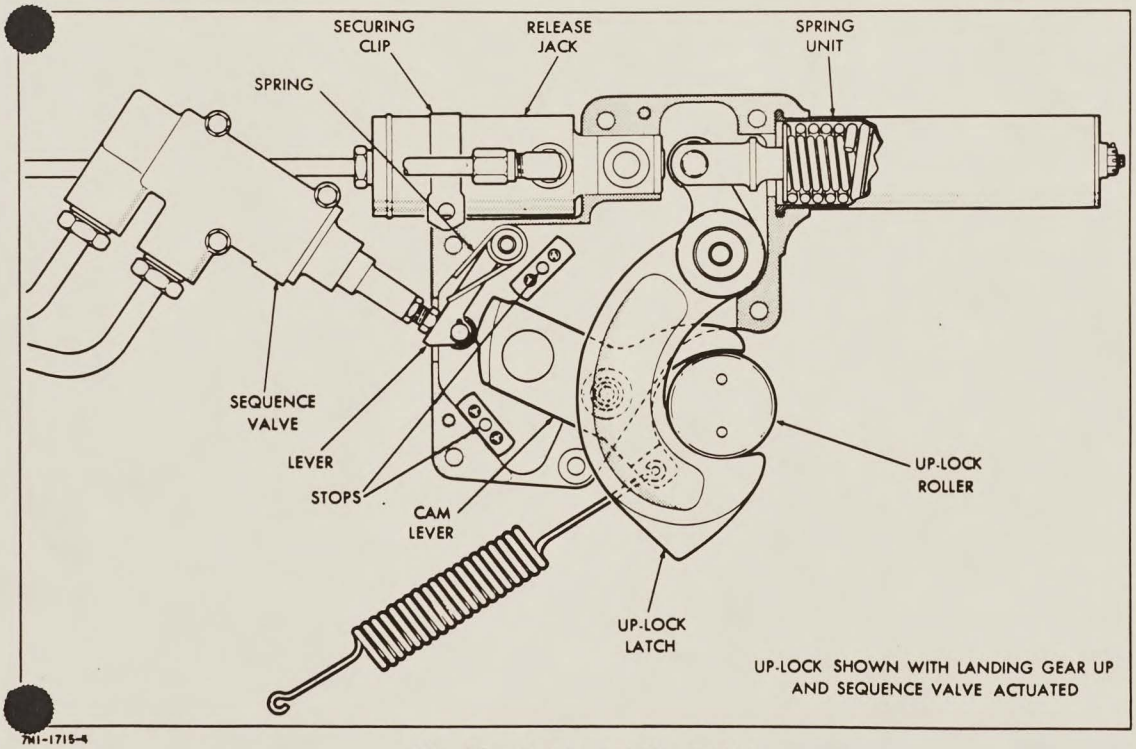

FIG. 15 MAIN LEG UP-LOCK

ARROW 1 SERVICE DATA

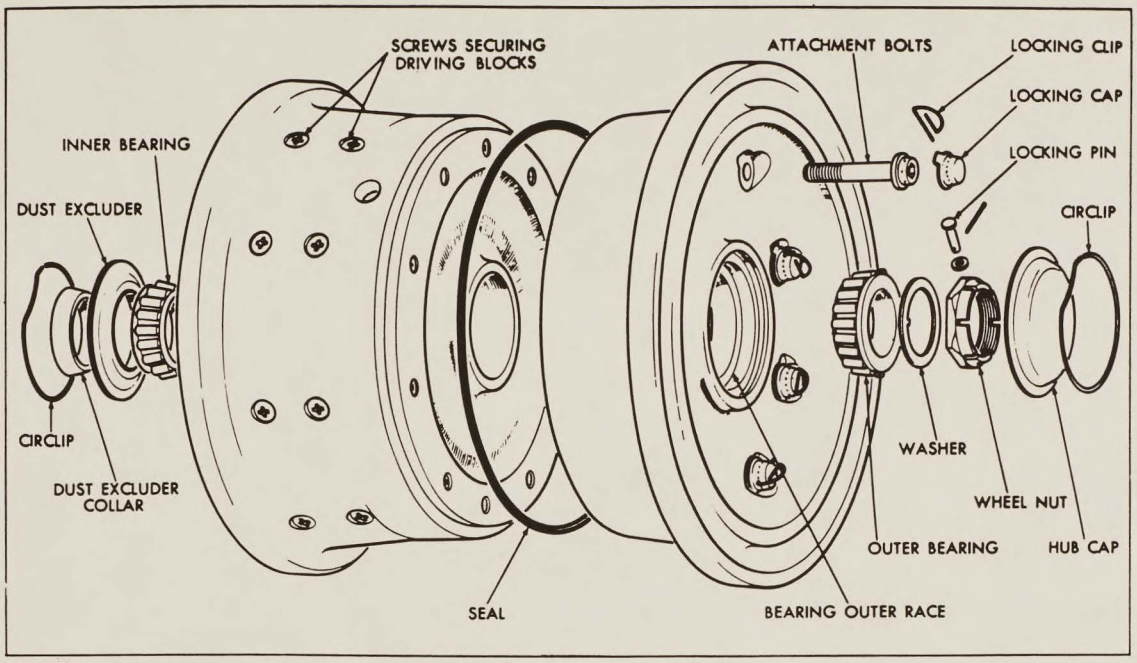

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FIG.16 MAIN WHEEL ASSEMBLY

WHEEL BRAKE MECHANICAL CONTROLS (Fig 18)

63 The wheel brake units may be actuated independently or simultaneously by applying foot pressure to the respective rudder pedal. Each rudder pedal is mechanically connected to a hydraulic brake control valve located in the armament bay. A parking brake is provided to lock the rudder pedals in the brakes on position.

64 Each rudder pedal is mounted on the rudder suspension tube assembly together with a brake lever which is connected to a pivot lever by an operating tube. The other end of the lever is attached to an operating rod which passes through the cabin floor and connects with the brake control cable. The pivot lever is mounted on bearings and carried in a bracket attached to the structure. The bracket also mounts the parking brake locking latch and a cross-shaft. A cable tensioning spring is fitted between the pivot lever and the bracket.

65 When foot pressure is applied the respective brake pedal, the brake lever and operating tube transmit movement through the pivot lever, operating rod and cable to actuate the hydraulic brake control valve. When the pedals are released, a spring in the control valve returns the valve to neutral and the rudder pedals to the brakes off position. Tension is applied to the cable by the cable tensioning spring. For description of wheel brake hydraulics see Arrow 1 Service Data - Section 7 - Wheel Brakes Hydraulics.

66 The parking brake consists of a locking latch mounted on each pivot lever bracket and interconnected by a cross-shaft. The parking handle, fitted under the left-hand side of the instrument panel, is connected to a lever on the cross-shaft. Each locking latch engages a pin on the pivot lever when the rudder pedals are depressed and the handle is pulled. The parking brake is released when the rudder pedals are depressed. Each latch is disengaged from its respective pin by a latch return spring.

ARROW 1 SERVICE DATA

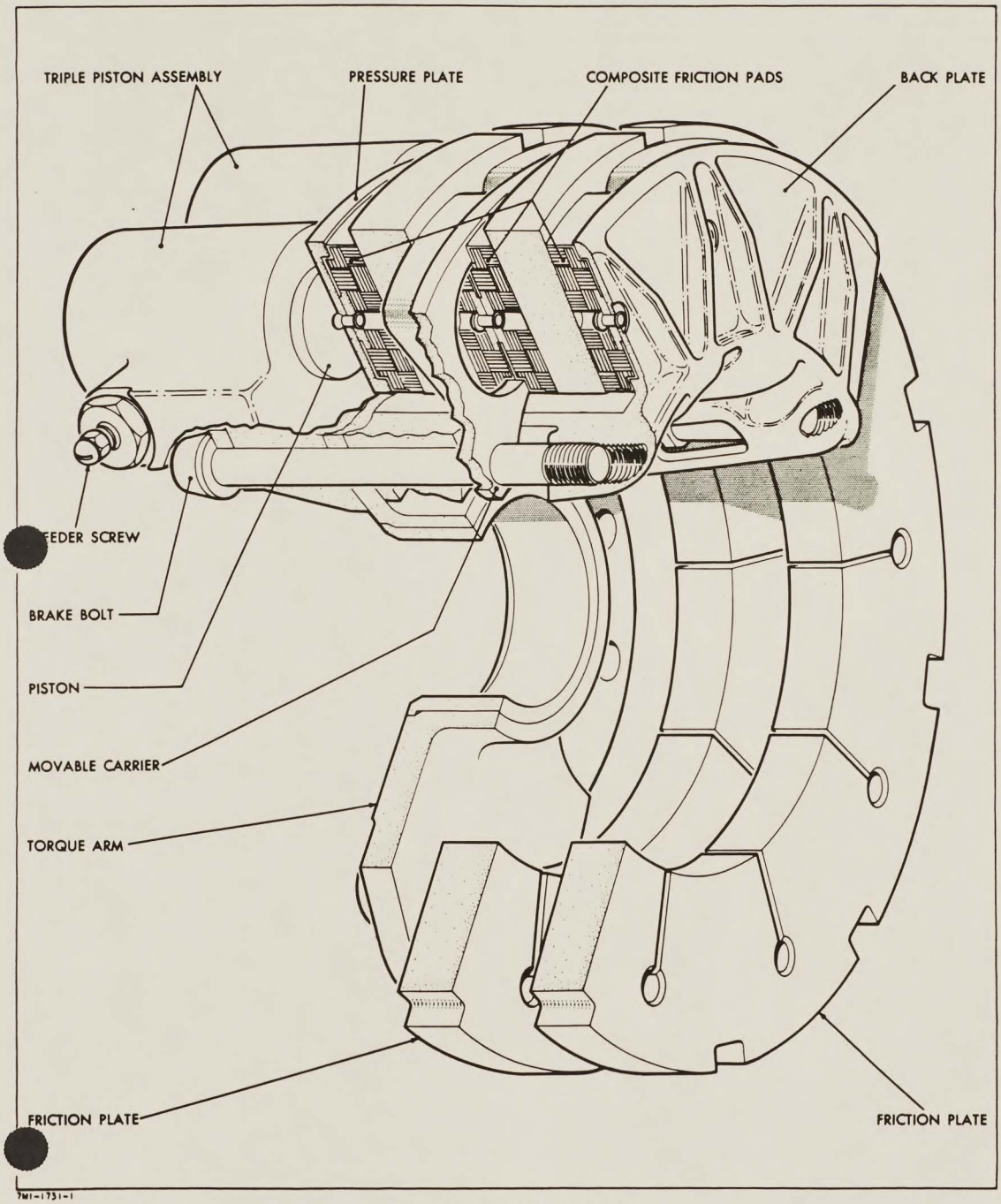


FIG. 17 WHEEL BRAKE

ARROW 1 SERVICE DATA

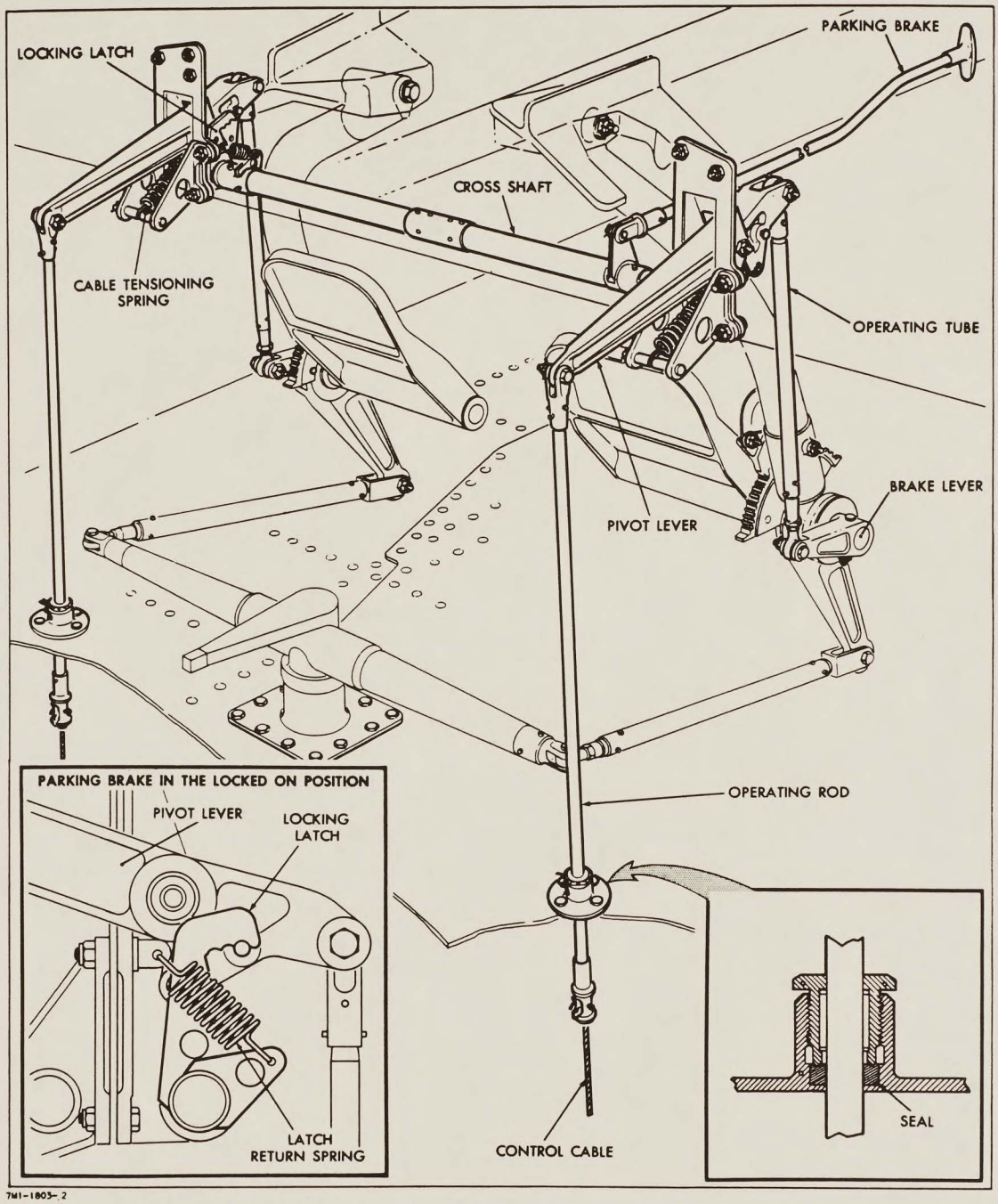


FIG. 18 WHEEL BRAKE MECHANICAL CONTROLS

ARROW 1 SERVICE DATA

SERVICING

GENERAL

67 The landing gear should be kept free of dirt and excess grease, particular attention being given to the surfaces of the lower sliding member, the telescopic side stay sliding member, and also the surface of the main casing over which the torque fitting slides and rotates during retraction of the gear. The landing gear must be correctly lubricated in accordance with the lubrication instructions. See Arrow 1 Service Data - Section 3 - Lubrication.

CHARGING THE RECUPERATOR
(Disconnected on Arrow 1)

68 If the aircraft has remained on the ground for a period of time a loss of oil from the shock absorber gland or recuperator valve will be evident by the lower sliding member telescoping into the torque fitting. If the shock absorber is leaking, oil will seep from the [illegible]e at the base of the sliding member and the contents indicator will show a drop in the oil contents. The leg will not collapse during normal flying conditions, as it is automatically replenished when the aircraft leaves the ground, although the oil indicator will still show a drop in oil contents. All oil leaks must be rectified before recharging the recuperator.

69 Should the recuperator indicate a low oil content or nitrogen pressure but the leg extension is normal, the recuperator can be recharged with the weight of the aircraft on the landing gear. If the sliding member has collapsed into the torque fitting the aircraft must be jacked and both the recuperator and shock absorber must be re-charged.

70 To charge the recuperator proceed as follows:

(a) From the procedure detailed on the instruction plate attached to the recuperator determine the reference temperature and compare this with the indicated temperature [illegible]he oil contents indicator. Any discrepancy [illegible]eater than 20°F between the two readings must be corrected by adjusting the oil contents.

(b) An excess reading on the indicator scale can be corrected by bleeding oil from the bleed valve on the recuperator valve.

(c) To replenish the recuperator with oil, connect the oil pressure gun to the oil charging adaptor situated at the rear of the cylinder, and charge with oil until the oil content indicator is at the temperature mark required.

(d) To charge the recuperator with nitrogen, connect the air/nitrogen trailer to the charging valve situated at the forward end of the recuperator, and charge to a pressure of 1500 psi.

71 When charging an empty recuperator with oil and nitrogen proceed as follows:

(a) Lower the aircraft to the ground to ensure that the recuperator valve is closed.

(b) Connect the air/nitrogen trailer to the nitrogen charging valve and charge the recuperator to approximately 100 psi.

(c) Slacken the bleed valve and charge the recuperator with oil until bubble free fluid is flowing from the bleed valve. Tighten and lock the bleed valve.

(d) Continue charging with oil until the oil contents indicator corresponds with the ambient temperature.

(e) Charge the nitrogen section to 1500 psi.

(f) The aircraft must now be jacked fully, and the oil content and nitrogen charge rechecked. If necessary re-charge as detailed in para 70.

(g) Lower the aircraft to the ground, and remove the ground equipment.

CHARGING THE SHOCK ABSORBER

72 On all Arrow 1 aircraft the recuperator is disconnected and a charging valve is fitted to the lower leg casing. To charge the shock absorber proceed as follows:

(a) Determine the outside air temperature at ground level.

ARROW 1 SERVICE DATA

TEMP OF UNIT AT TIME OF CHARGING (°F)	ESTIMATED AVERAGE GROUND LEVEL AIR TEMPERATURE DURING LIFE OF CHARGE (°F)																	
	110	100	90	80	70	60	50	40	30	20	10	0	-10	-20	-30	-40	-50	-65
110	15	20	30	35	40	50	55	60	70	80	90	100	-	-	-	-	-	-
100	10	15	20	30	35	40	50	55	60	70	80	90	100	-	-	-	-	-
90	1	10	15	20	30	35	40	50	55	65	75	85	95	-	-	-	-	-
80	-	1	10	15	20	30	35	45	50	60	70	80	90	100	-	-	-	-
70	-	-	1	10	15	20	30	35	45	55	60	70	80	90	100	-	-	-
60	-	-	-	1	10	15	20	30	35	45	55	65	75	85	95	-	-	-
50	-	-	-	-	1	10	15	20	30	40	50	55	65	75	85	100	-	-
40	-	-	-	-	-	1	10	15	25	30	40	50	60	70	80	90	100	-
30	-	-	-	-	-	-	1	10	15	25	35	40	50	60	70	80	95	-
20	-	-	-	-	-	-	-	1	5	15	25	35	45	50	60	70	85	100
10	-	-	-	-	-	-	-	-	-	5	15	25	35	45	55	65	75	90
0	-	-	-	-	-	-	-	-	-	-	5	15	25	35	45	55	70	85

ALL PRESSURES ARE IN 100's OF PSI

(To be used on Shock Absorbers which have the Recuperator disconnected)

FIG. 19 CHARGING INDEX FOR LIQUID SPRING SHOCK ABSORBERS

(b) Determine the temperature of the unit to be charged. When an aircraft which has been outside for several hours is brought into a heated hangar and insufficient time is allowed to bring the shock absorber up to hangar temperature, the outside air temperature should be taken as the shock absorber charging temperature.

(c) Determine the correct charging pressure from the charging index. See fig 19.

(d) The following examples are given to clarify the use of the charging index only:

(1) The aircraft has been in the hangar overnight, with the hangar temperature at 60°F. The outside air temperature at the time of charging is -10°F. The charging index will indicate that the shock absorber has to be charged at a pressure of 7500 psi.

(2) The aircraft is outside the hangar, and the outside air temperature at the time of charging is 40°F. The charging index will indicate that the shock absorber has to be charged at a pressure of 1500 psi.

(e) Connect the pressure gun adaptor to the valve.

(f) Operate the pressure gun until the correct charging pressure is obtained.

REMOVAL

GENERAL

73 Before removing any components from the landing gear the aircraft should be jacked and ground locks fitted, when required. The utility hydraulic system and the wheel brake circuit must be relieved of all pressure before disconnecting the hydraulic connections on the landing gear or wheel brakes.

(a) To relieve the pressure in the utility hydraulic system, operate the dump valve located on the forward face of the bulkhead at station 485 if the instrument pack is not fitted, or operate the speed brakes until they cease to function, if the instrument pack is fitted.

To relieve the pressure in the emergency wheel brake circuit, apply and release the wheel brakes until the brakes no longer operate with pedal pressure.

74 A main landing gear ground handling dolly is used to support the weight of the landing gear leg during removal and replacement of the leg or the back stay.

75 For jacking the aircraft and fitting the ground locks see Arrow 1 Service Data - Section 1 - General Information.

CROSS-SHAFT AND LEG REMOVAL

76 The landing gear leg and the forward part of the cross-shaft are removed from the aircraft as one unit. The removal procedure for the complete unit is as follows:

(a) Jack the aircraft until the wheels are clear of the ground.

(b) Remove the micro-switches fitted to bracket on the torque fitting and the micro-itch located on top of the main casing. Unclip the electrical wiring and secure switches to the wheel bay structure.

(c) Relieve the hydraulic pressure in the utility hydraulic system and the emergency wheel brake circuit. See para 73.

(d) Remove the leg fairing and pivot door. See para 79 - 80.

(e) Disconnect the two hydraulic brake lines at the swivel joints on the top of the leg. Blank off the swivel joint assemblies and secure them to the leg to prevent damage during leg removal.

(f) Disconnect the retraction jack from the cross-shaft spacer.

(g) Remove the front and rear wheels. See fig 16.

(h) Disconnect the hydraulic lines from the brakes and remove the front and rear brake assemblies. Fit the axle protection guards.

(j) Position the ground handling dolly and secure it to the leg. Adjust the dolly to support the weight of the leg.

(k) Remove the side stay. See para 77.

(m) Remove the back stay. See para 78.

(n) Remove the front pivot access panel.

(p) Remove the nut and lock washer from the forward pivot bearing. Unscrew the thrust nut and withdraw the thrust collar. See fig 3.

(q) Disconnect the leg shortening adjustment screw from the structure. See fig 6.

(r) By manoeuvring the ground handling dolly withdraw the leg from the front bearing.

(s) Clean off the leg and fit shipping protectors.

SIDE STAY REMOVAL

77 To remove the side stay from the aircraft proceed as follows:

(a) Jack the aircraft until the wheels are clear of the ground.

(b) Connect the hydraulic hand pump rig to the up and down line connections in the duct bay.

(c) Apply hydraulic pressure to the up line until the down-lock in the side stay is released. Close the up line cock on the rig.

(d) Remove the locking plate and unscrew the side stay lower ball fitting out of the main casing until the thread is disengaged.

(e) Release the hand pump rig pressure and remove the rig.

(f) Remove the three bolts attaching the swivel joint to the side stay upper pivot pin.

(g) Remove the down-lock micro-switch and unclip enough wiring to enable the switch to be taped back in the wheel bay clear of operations.

(h) Extract the roll pin securing the upper bearing pivot.

(j) Support the side stay and withdraw the upper pivot.

(k) Remove the side stay and blank off all hydraulic connections. Fit shipping protectors.

BACK STAY REMOVAL

78 The back stay, which is integral with the aft portion of the cross-shaft must be removed before the main leg can be removed. To remove the back stay proceed as follows:

(a) Remove the leg fairing. See para 80.

(b) Jack the aircraft until the wheels are clear of the ground.

(c) Position the main landing gear handling dolly and secure to the leg. Adjust the dolly to support the weight of the leg.

(d) Disconnect the retraction jack from the cross-shaft spacer.

(e) Drive out the roll pin retaining the side stay lower attachment pin to the leg casing and extract the pin.

(f) Remove the cotter pins and nuts and withdraw the twelve bolts securing the cross-shaft spacer. Remove the spacer.

(g) Tilt the back stay lower attachment to disengage it from the casing, and withdraw the back stay from the rear self-aligning bearing.

(h) Fit the shipping protectors to the back stay.

PIVOT DOOR AND LEG FAIRING REMOVAL (Fig 12)

79 The pivot door complete with operating linkage is removed as follows:

(a) Disconnect the two pivot door adjustable links, at their upper attachment to the door operating bracket, by driving out the roll pin and unscrewing the internal wrenching screw from each link.

(b) Disconnect the two outer links from the front and rear mounting brackets by driving out the roll pin in the upper end of each link and unscrewing the pivot pin.

(c) Disconnect the main hinge arm and the stabilizer arm at the hinge points on the structure. Remove the cotter pin and nut from each hinge pin and drive the pins straight out.

NOTE

Do not attempt to turn the bolts as they are locked against rotation by a lock tab on the main hinge arm, and a spring pin on the stabilizer arm.

80 To remove the leg fairing, withdraw the cotter pins and clevis pins securing the fairing to the nine spring housing attachments on the leg.

RETRACTION JACK REMOVAL

81 When removing the retraction jack it is necessary to partially retract the main leg and secure it in this position with a jury strap. This provides the necessary clearance to withdraw the jack from the wing.

82 To remove the retraction jack proceed as follows:

(a) Jack the aircraft until the wheels are clear of the ground.

(b) Connect the hand pump to the up and down lines in the duct bay and partially retract the leg.

(c) Close the up line cock on the hand pump rig and fit the jury strap to support the leg.

(d) Remove the jack access door located below the retraction jack.

(e) Disconnect the two swivel joints at each end of the jack casing and blank off the open lines and connections.

(f) Disconnect the jack rod from the cross-shaft spacer.

(g) Remove the cotter pin, nut and bolt securing the jack body to the structure.

(h) Withdraw the jack from the inner wing.

SHOCK ABSORBER REMOVAL

83 When removing the shock absorber the main leg must be retracted approximately 30° to allow the shock absorber to be pulled clear of the main casing. This retraction must be carried out after the shock absorber has been disconnected from the shortening sleeve and the pip-pin has been replaced. It is necessary to replace the pip-pin to prevent misalignment of the operating sleeve and the shortening sleeve during the partial retraction.

84 To remove the shock absorber proceed as follows:

(a) Remove the leg fairing and disconnect the pivot door adjustable links from the cross-shaft. See para 79.

(b) Jack the aircraft until the wheels are clear of the ground.

Relieve the hydraulic pressure in the utility hydraulic system and the emergency brake circuit.

(d) Disconnect and remove the hydraulic brake lines from the wheel brakes to the swivel joints on the torque links. The shuttle valve may be removed complete with the upper section of piping. See Arrow 1 Service Data - Section 7 - Wheel Brakes Hydraulics, for details of the brake lines and swivel joints.

(e) Unscrew and remove the recuperator valve dummy and insert the blanking plug.

NOTE

On Arrow 1 aircraft the recuperator is disconnected and a recuperator valve dummy and charging valve is fitted in place of the recuperator valve.

(f) Remove the main wheels and brakes. Fit axle guards and replace the axle nuts.

(g) Remove the circlip and special nut securing the brake torque links to the lower leg. Remove the complete assembly, comprising the forward and rear torque links together with the recuperator.

(h) Remove the tie-rod.

(j) Remove the bogie beam as follows:

(1) Remove the earthing wire and transverse bolt.

(2) Support the bogie beam and drive out the pivot pin complete with towing eye.

(k) Disconnect the torque link at the centre pivot bolt.

(m) Remove the band clamp around the base of the torque fitting and remove the four locking pads and eccentric screws.

(n) Attach a strap wrench to the lower end of the operating sleeve. Rotate the sleeve to line up the pip-pin with its access hole in the outer casing.

(p) Fit the retaining tool to support the operating sleeve when the pip-pin is removed.

(q) Attach the retaining strap to support the lower part of the leg when the pip-pin is removed.

(r) Extract the pip-pin, using the special extractor.

(s) Lower the sliding member on its retaining strap approximately 3 inches to enable the shock absorber to disengage from the shortening sleeve.

(t) Replace the pip-pin to retain alignment of the shortening sleeve and the operating sleeve. Remove the extractor.

(u) Connect the hand pump to the up and down lines in the duct bay. Retract the leg approximately 30° and close the up line cock on the rig. Secure the leg in this position by fitting the jury strap.

(v) Support the lower leg and withdraw the sliding member and shock absorber from the main casing.

CAUTION

Care should be exercised during the removal procedures to avoid abrasion and damage to the machined surface of the sliding member.

(w) To remove the shock absorber from the sliding member proceed as follows:

(1) Remove the bolt securing the locking tube to the lower part of the leg and withdraw the tube.

(2) Using a suitable extension wrench unscrew the nut securing the shock absorber piston rod to the sliding member.

WHEEL DOOR JACK REMOVAL

85 To remove the wheel door jack proceed as follows:

(a) Relieve the hydraulic pressure in the utility hydraulics system.

(b) Disconnect the hydraulic unions at the sequence valve body, and at the jack upper pivot connections. Blank off the pipes and the valve and jack connections to prevent ingress of dirt.

(c) Remove the sequence valve, by removing the two retaining bolts that attach it to the jack attachment bracket.

(d) Disconnect the jack cylinder from the door. Retain the shim washer if refitting the same door jack.

(e) Remove four nuts attaching the jack extension bracket to the wheel bay structure and withdraw the bracket from the studs.

NOTE

The jack must not be dismantled from the attachment bracket. New jacks are supplied with the attachment bracket assembled to the jack rod.

INSTALLATION AND ADJUSTMENTS

GENERAL

86 During installation and adjustment of components on the landing gear the aircraft must be supported on jacks and ground locks fitted to the components which are not being serviced. The ground locks must be removed during function testing and replaced when the test is completed. See Arrow 1 Service Data - Section 1 - General Information.

87 When function testing a single component of the landing gear a hand pump fitted with two hoses and a two-way valve is connected to the up and down lines leading to the component.

88 When function testing the complete landing gear, the hydraulic test stand is connected to the utility hydraulic ground test connections. See Arrow 1 Service Data - Section 20 - Utility Hydraulics - Power Circuit.

INSTALLING THE MAIN LEG AND BACK STAY

89 When installing a replacement leg the back stay must be removed from the leg and the leg secured in the ground handling dolly.

90 To install the leg proceed as follows:

(a) Manoeuvre the leg into position and enter the forward pivot into the front pivot bearing.

(b) Assemble the thrust collar, washer and nut.

(c) Install the back stay in the reverse order to that detailed in para 78. Torque load the retraction jack pivot bolt to 1500-1800 in lb.

(d) Torque load the front pivot bearing nut to 420-480 in lb. Secure the bearing nut by fitting the lock washer, nut and cotter pin. See fig 3.

(e) Remove the ground handling dolly.

(f) Install the side stay. See para 91-92.

(g) Connect the shortening adjustment screw to the wheel bay structure. See fig 6.

(h) Install the hydraulic brake lines on the leg. See Arrow 1 Service Data - Section 7 - Wheel Brakes - Hydraulics.

(j) Install the front and rear wheel brakes.

(k) Fit the two main wheels.

(m) Install the nine spring housings to the leg. Apply a coat of adhesive PR1421 to the inner surface of the straps securing housings Nos. 1-7 prior to installation.

(p) Assemble the electrical wiring and micro-switches to the leg. See Arrow 1 Service Data - Section 9 - Landing Gear - Electrics.

(q) Connect the hand pump rig to the up and down lines in the duct bay. Slacken the pipe line fitting to the down-lock in the side stay and pump fluid through the up line until air free fluid flows from the fitting. Tighten the fitting.

(r) Rig the main leg as detailed in para 93.

(s) Adjust the leg shortening mechanism as detailed in para 95.

(t) Install and adjust the leg fairing as detailed in para 101.

(u) Install and adjust the pivot door as detailed in para 99-100.

(v) Adjust the leg up-lock and sequence valve as detailed in para 97.

(x) Adjust the micro-switches as detailed in Arrow 1 Service Data - Section 9 - Landing Gear - Electrics.

(y) Lubricate the landing gear as detailed in Arrow 1 Service Data - Section 1 - General Information.

(z) Function test the complete landing gear.

INSTALLING THE SIDE STAY

91 Before installing the side stay lubricate the lower ball joint and check to ensure that the side stay has been filled with 10 cu in of lubricating oil Specification MIL-O-6083.

92 The installation procedure for the side stay is the reverse of the removal procedure detailed in para 77 with the following additions:

(a) Rig the main leg as detailed in para 93.

(b) Connect the hand pump rig to the up and down lines in the duct bay. Slacken the pipe line fitting to the down-lock and pump fluid through the up line until air free fluid flows from the fitting. Tighten the fitting.

(c) Retract and extend the leg, checking the down-lock for disengagement on retraction and engagement on extension.

RIGGING THE MAIN LEG (Fig 20)

93 The main legs are inclined inwards at an angle of 4°15' to the vertical, this is resolved into a linear measurement of 156.20 - 156.70 inches from the outer face of the bogie beam to the centre line of the aircraft. The rigging position of the leg is varied by altering the length of the telescopic side stay. This is accomplished by means of an adjustable end fitting on the lower end of the side stay.

94 To rig the main leg proceed as follows:

(a) Jack the aircraft until the wheels are clear of the ground.

(b) Position the alignment fixture in the nose wheel bay and adjust the main jacks until the aircraft is laterally level.

NOTE

Due to the height to which the main landing gear jacks would have to be raised, it is impracticable to raise the aircraft so that the fuselage datum line is horizontal.

(c) Remove the hydraulic equipment access panel and the No. 1 service panel. Mark the centre of each frame on the forward face of the hydraulic access (station 553.1) and the rear face of No. 1 service access (station 606.05). Suspend plumb lines from these two points.

(d) Using a chalked length of string, transfer a line to the hangar floor passing directly under the two plumbobs.

(e) Drop a plumb line from the lower outboard face of each landing gear sliding member at the bogie beam attachment point. Ensure that each plumb line is suspended from an identical point on each sliding member.

(f) Using a chalked length of string, transfer a line to the hangar floor passing directly under these plumbobs. Ensure that the two chalk lines cross each other at right angles.

(g) Using a steel tape, measure the distance from the point of the appropriate main leg plumbob to the centre line of the aircraft. The measurement should be 156.20 - 156.70 inches. If not, the angle of the main leg must be corrected by adjusting the side stay as follows:

(1) Remove the lockring from the lower end fitting of the telescopic side stay and, by trial and error, adjust the lower end fitting until the correct adjustment is obtained.

(2) Turn the end fitting to allow alignment of the lockring with the slots in the side stay then replace the lockring.

NOTE

See the instruction plate attached to the side stay for maximum adjustment tolerances.

(h) The side stay adjustment affects the overtravel setting of the retraction jack. Check and, if necessary, adjust the main gear retraction jack as described in para 103.

ADJUSTING THE SHORTENING MECHANISM

95 The main leg must be shortened by 8.44-8.56 inches when the leg is fully retracted. The amount of leg shortening may be varied by adjusting the adjustment screw (see fig 6) in the leg shortening mechanism.

96 To adjust the leg shortening mechanism proceed as follows:

(a) Disconnect the main door jack from the door and secure the jack in a position where it can retract and extend without fouling.

(b) Detach the leg fairing by removing the flat head pins.

(c) Connect the hand pump rig to the up and down lines in the duct bay.

(d) Slowly retract the landing gear and check that the main leg is fully shortened before it enters the wheel bay and that the landing gear does not foul the wheel bay structure.

(e) Place a piece of adhesive tape around the main casing of the leg so that the edge just touches the upper end of the torque fitting.

(f) Extend the landing gear and measure the distance between the edge of the adhesive tape and the upper end of the torque fitting. The measurement should be 8.44-8.56 inches. If not, the shortening mechanism must be adjusted as follows:

ARROW 1 SERVICE DATA

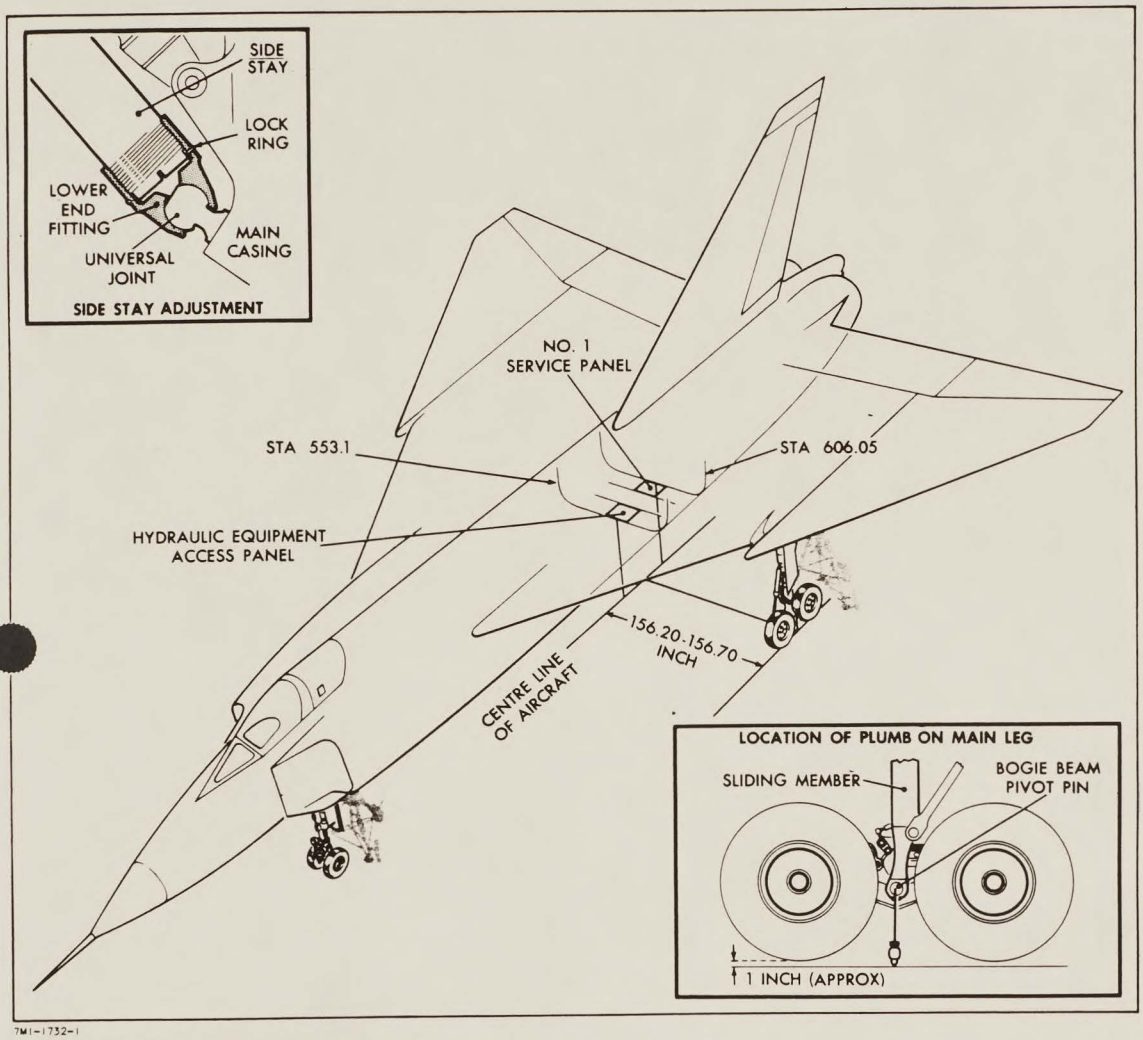


FIG. 20 RIGGING THE MAIN LEG

(1) Remove the wirelocking from the two locknuts of the fixed shortening bracket on the main leg cross-shaft.

(2) Remove the lock plate from the shortening chain tension adjustment rod on the side of the main casing.

Slacken the chain tension adjustment rod until it just separates from its spherical seating.

(4) By trial and error, adjust the shortening bracket locknuts to reposition the bracket. Adjusting the bracket upwards and away from the leg will increase the amount of shortening. The chain must be correctly tensioned after each bracket adjustment. This is achieved by unscrewing the rod, if necessary, until it separates from its seat, screwing it in until the rod just seats without end play, then screwing in a further 180°.

(5) Repeat items (d) to (f)(4) inclusive until the correct shortening measurement is obtained.

CAUTION

It is important that the chain is correctly tensioned on completion of all adjustments of the shortening bracket. Overtensioning of the chain will lift the operating cylinder of the down-lock, leaving the leg in a partially unlocked condition.

(6) Wirelock the shortening bracket and fit the lock plate to the adjustment rod.

(g) Adjust the micro-switch indicator. See Arrow 1 Service Data - Section 9 - Landing Gear - Electrics.

(h) Replace the leg fairing and connect the door retraction jack.

(j) Remove the hand pump and connect the hydraulic test stand to the ground service connections.

(k) Bleed the utility hydraulic system and function test the landing gear.

MAIN LEG UP-LOCK AND SEQUENCE VALVE ADJUSTMENT (Fig 21 and 22)

97 The up-lock must be positioned in the wheel bay to ensure that, when the leg is retracted, the centre line of the up-lock latch is aligned with the mid point on the roller. The roller must also be adjusted on its serrated plate so that it fully engages in the latch and locates the landing gear in the correct position in the landing gear bay.

98 To adjust the up-lock and roller proceed as follows:

(a) Jack the aircraft until the wheels are clear of the ground.

(b) Connect the hand pump rig to the up and down lines in the duct bay.

(c) Detach the leg fairing by removing the flat head pins.

(d) Adjust the up-lock and roller as detailed in fig 21.

(e) Adjust the sequence valve as detailed in fig 22.

(f) Remove the hand pump rig, bleed the utility hydraulic system and function test the landing gear.

PIVOT DOOR INSTALLATION (Fig 12 and 13)

99 The pivot door is installed in the reverse procedure to that detailed in para 79. After installation the door must be adjusted on the two adjustable links to align the inner edge of the door with the undersurface of the wing and also by repositioning the door on the two curved arms to align the outer edge of the door with the wing.

100 To adjust the door proceed as follows:

(a) Jack the aircraft until the wheels are clear of the ground.

(b) Detach the leg fairing by removing the flat head pins.

(c) Connect the hand pump rig to the up and down lines in the duct bay.

(d) Retract the leg and by trial and error adjust the two links until the inner edge of the door is flush with the undersurface of the wing.

(e) Slacken the bolts securing the two curved arms to the door and reposition the door until the outer edge is flush with the undersurface of the wing.

(f) Tighten the bolts securing the door to the curved arms.

(g) Check that the skin gap between the door and the wing is 0.05 - 0.10 inches. If necessary carefully file the edge of the door to obtain this skin gap.

(h) Install the leg fairing and retract the leg.

(j) Check the skin gap between the fairing and the door as detailed in (g).

LEG FAIRING ADJUSTMENT (Fig 23)

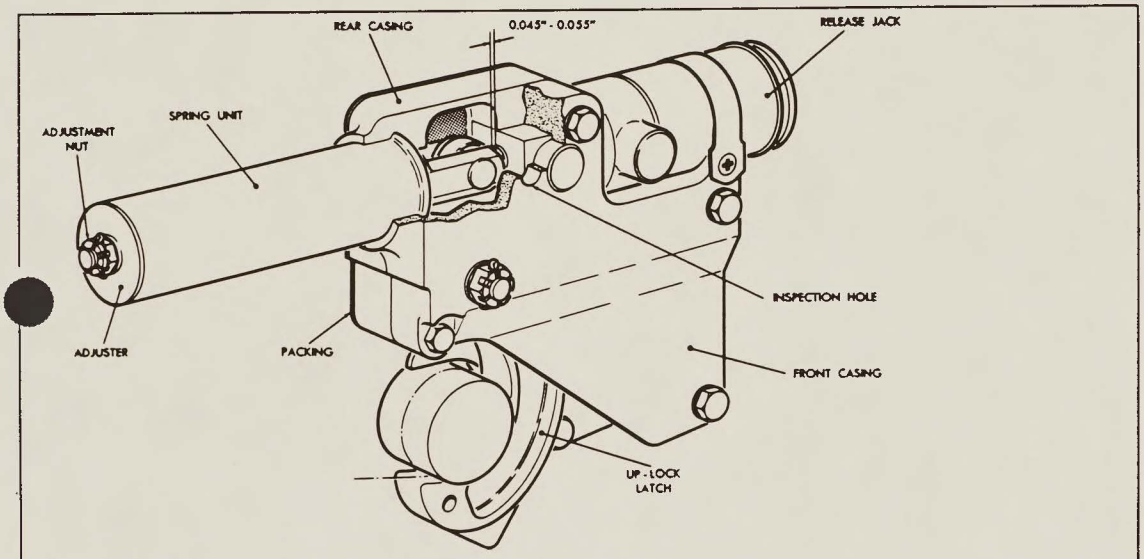
101 The nine housings securing the fairing to the leg must be adjusted so that they have sufficient travel remaining, when the gear is retracted, to allow for the wing flexing in flight.

102 The procedure for adjusting the housings is described in fig 23.

RETRACTION JACK INSTALLATION AND ADJUSTMENT (Fig 24)

103 After installing the jack to the aircraft structure, the end fitting must be adjusted to provide overtravel on the jack, in extended and retracted positions.

104 To install and adjust the jack proceed as follows:



1. WITH THE LANDING GEAR EXTENDED, CHECK THE CLEARANCE BETWEEN THE UP-LOCK RELEASE JACK AND THE SPRING UNIT THROUGH THE INSPECTION HOLE IN THE FRONT CASING. ADJUST THE ADJUSTMENT NUT TO OBTAIN A CLEARANCE OF 0.045 IN. - 0.055 IN.
2. SLOWLY RETRACT THE LANDING GEAR AND CHECK THE ENGAGEMENT OF THE ROLLER WITH THE UP-LOCK LATCH. ADJUSTMENTS MUST BE MADE IN THE FOLLOWING SEQUENCE.

(a) ADJUST THE THICKNESS OF THE PACKING BETWEEN THE REAR CASING AND THE WHEEL BAY DIAPHRAGM UNTIL THE CENTRE LINE OF THE UP-LOCK LATCH IS ALIGNED WITH THE CENTRE LINE OF THE ROLLER. MAXIMUM ALLOWABLE THICKNESS IS 0.12 IN.

(b) WITH THE LANDING GEAR EXTENDED, SLACKEN THE NUTS OF THE ECCENTRIC SCREWS AND POSITION THE ROLLER AND SERRATED PLATE ON THE VERTICAL SERRATIONS AT THE FORWARD END OF THE ELONGATED SLOTS. TIGHTEN THE NUTS.

(c) RETRACT THE LANDING GEAR AND CHECK THAT THE ROLLER IS FULLY ENGAGED WITH THE LATCH BUT DOES NOT CAUSE THE LATCH TO COMPRESS THE SPRING UNIT. TO ADJUST, UNSCREW THE NUTS OF THE ECCENTRIC SCREWS, REMOVE THE SCREWS AND RE-POSITION THE SERRATED PLATE ON THE HORIZONTAL SERRATIONS. INSERT THE SCREWS AND FIT THE NUTS. MARK THE POSITION OF THE SERRATED PLATE IN RELATION TO THE ROLLER.

(d) BY TRIAL AND ERROR, ADJUST THE ROLLER ON THE VERTICAL SERRATIONS UNTIL THE LANDING GEAR, WHEN RETRACTED, DOES NOT FOUL THE TOP OF THE LANDING GEAR BAY AND THE RUBBER BLOCKS ON THE DOOR JUST CONTACT, OR ARE ONLY SLIGHTLY COMPRESSED BY THE TIRES.

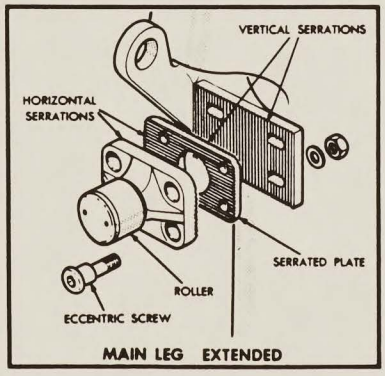


FIG. 21 LEG UP-LOCK ADJUSTMENT

ARROW 1 SERVICE DATA

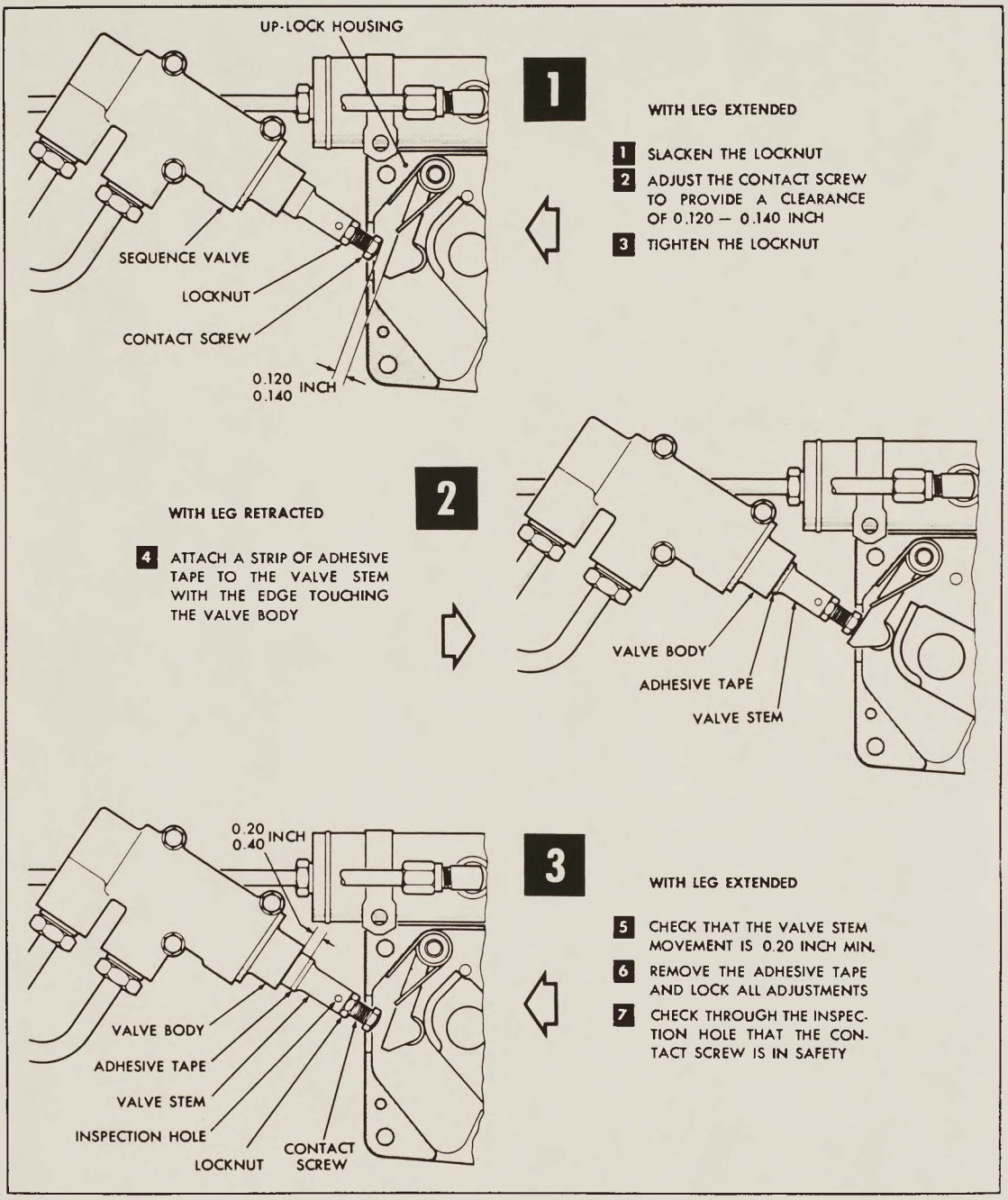


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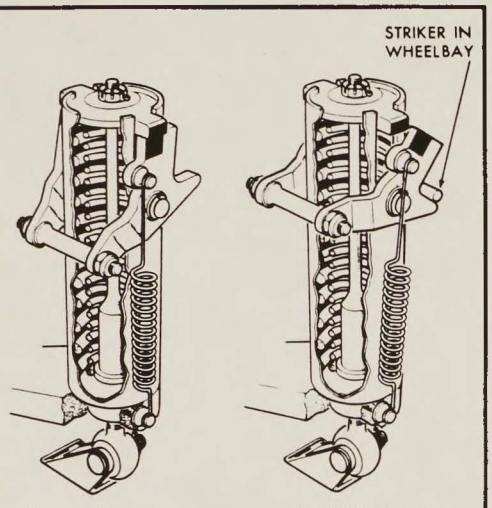
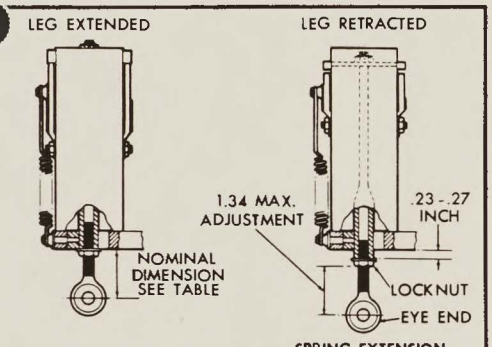
FIG. 22 LEG UP-LOCK SEQUENCE VALVE ADJUSTMENT

ARROW 1 SERVICE DATA



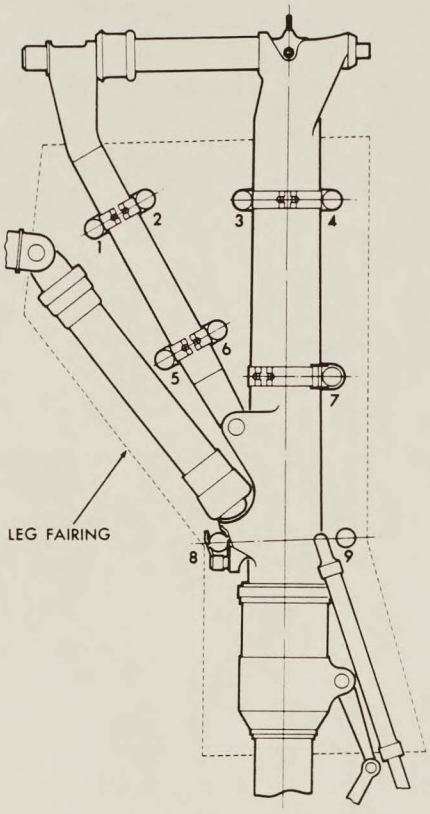
VIEW SHOWING CAM MARKINGS ON HOUSINGS No. 8 & 9
OPERATIONS 2 AND 5



OPERATION 1

SPRING EXTENSION OPERATION 6

HOUSING	NOMINAL DIMENSIONS
No. 1	1.28 INCH
No. 2	1.21 INCH
No. 3	1.44 INCH
No. 4	1.04 INCH
No. 5	1.42 INCH
No. 6	1.15 INCH
No. 7	1.09 INCH
No. 8	1.03 INCH
No. 9	1.01 INCH



LEFT HAND LEG LOOKING OUTBOARD

1. ADJUST THE EYE END OF EACH HOUSING TO THE NOMINAL DIMENSION IN THE TABLE.
2. CHECK THE CAMS ON No. 8 AND No. 9 HOUSING FOR FREEDOM OF MOVEMENT.
3. ASSEMBLE THE FAIRING TO THE LEG.
4. DISCONNECT THE MAIN GEAR DOOR AND PIVOT DOOR.
5. RETRACT THE LEG, CHECKING THAT THE STRIKERS ACTUATE THE CAMS ON No. 8 AND No. 9 HOUSING.
6. CHECK THAT THE SPRING HOUSINGS HAVE EXTENDED 0.23-0.27 INCH ON ALL HOUSINGS.
7. ADJUST THE EYE END OF EACH HOUSING TO OBTAIN THIS EXTENSION.
8. ENSURE THAT THE MAX. ADJUSTMENT OF 1.34 INCH ON ALL HOUSINGS HAS NOT BEEN EXCEEDED.

:05-1

FIG. 23 LEG FAIRING ADJUSTMENT

(a) Lubricate the pivot bearing, install the jack to the structure fitting and connect up the hydraulic lines.

(b) Remove the leg fairing and disconnect the adjustable links connecting the pivot door to the cross-shaft.

(c) Adjust the jack as detailed in fig 24.

(d) Torque the jack rod pivot bolt to 1500-1800 in lb.

(e) Replace the leg fairing and connect up the pivot door.

(f) Function the landing gear, checking the fairing and door for correct fitting.

SHOCK ABSORBER INSTALLATION

105 To install the shock absorber the main leg must be partially retracted to allow the shock absorber and sliding member to be fitted inside the leg. When the sliding member is positioned in the leg, the lower leg must be supported and the landing gear extended. This enables the shock absorber to be aligned with the shortening sleeve and the pip-pin to be fitted. The torque fitting must also be adjusted to position the rollers between the cam tracks.

106 A tool kit comprising a strap to support the leg in the partially retracted position, a strap to support the lower leg, an extractor for removal of the pip-pin, four wrenches to adjust the eccentric pins and two gauges to check the rollers, is required to facilitate installation of the shock absorber.

107 To install the shock absorber proceed as follows:

(a) Secure the shock absorber piston rod to the sliding member and fit the locking tube.

(b) Remove the blanking plug and screw the recuperator valve dummy into the sliding member.

NOTE

On Arrow 1 aircraft the recuperator is disconnected and a recuperator valve dummy and charging valve is fitted in place of the recuperator valve.

(c) Position the shock absorber with the cylinder uppermost and connect the charging rig to the charging point in the valve dummy. Bleed and charge the shock absorber as detailed in para 72. Tighten and wirelock the bleed plug.

(d) Insert the sliding member together with the lower bearing into the leg. Attach the support strap to the sliding member and adjust it to support the member approximately 3 inches short of its final assembled position.

(e) Extend the leg to the landing gear down position.

(f) Extract the pip-pin and carefully raise the lower leg until the upper part of the shock absorber is aligned with the shortening sleeve. Insert the pip-pin and remove the extractor.

(g) Check that the pip-pin is fully home and fit the rubber bung.

(h) With the lower bearing in position insert the four eccentric pins.

(j) Position the rollers in the cams as shown in fig 25. Fit the four locking pads to the eccentric screws and install the band clamp.

(k) Secure the upper and lower torque links by fitting the joint pin, nut and cotter pin.

(m) Attach the bogie beam to the sliding member by fitting the pivot pin, transverse bolt and earthing wire.

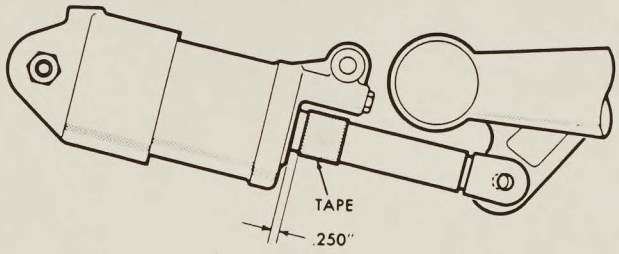
(n) Fit the tie-rod to the main casing and the bogie beam horn.

ARROW 1 SERVICE DATA

WITH GEAR RETRACTED

1. REMOVE THE PIVOT BOLT AND FULLY EXTEND THE JACK
2. ATTACH A STRIP OF ADHESIVE TAPE TO THE JACK ROD .250" FROM THE JACK BODY

1



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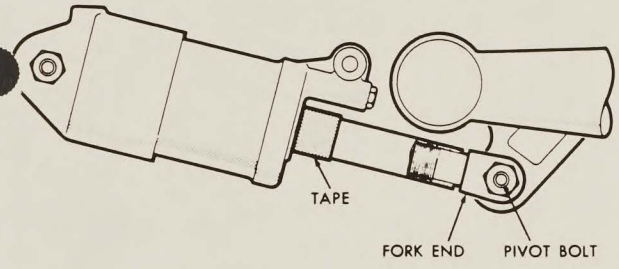
3. RETRACT THE PISTON ROD UNTIL THE TAPE TOUCHES THE JACK BODY AND ADJUST THE FORK END TO ALIGN THE PIVOT HOLE
4. INSTALL THE PIVOT BOLT AND REMOVE THE TAPE



3

WITH GEAR EXTENDED

5. REMOVE THE PIVOT BOLT
6. FULLY RETRACT THE PISTON ROD AND CHECK THAT AT LEAST .120"-.125" OVERTRAVEL EXISTS IN THE JACK
7. REPLACE THE PIVOT BOLT

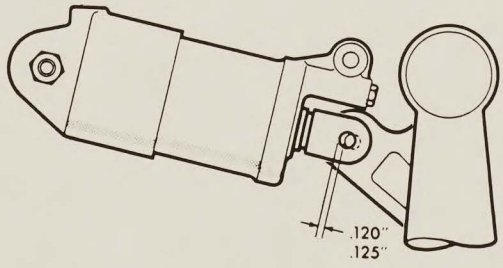


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FIG. 24 RETRACTION JACK ADJUSTMENT

(p) Install the brake torque links on the centre pivot. Secure with the special bolt and fit the locking circlip.

(q) Locate the wheel brakes on the axles and secure to the brake torque links.

(r) Install the hydraulic brake lines and the shuttle valve. See Arrow 1 Service Data - Section 7 - Wheel Brakes - Hydraulics.

(s) Clean and lubricate the main leg as detailed in Arrow 1 Service Data - Section 3 - Lubrication.

(t) Bleed and function the brakes as detailed in Arrow 1 Service Data - Section 7 - Wheel Brakes - Hydraulics.

(u) Carry out a complete function test of the landing gear, checking the gear for clearance in the wheel bay.

WHEEL DOOR UP-LOCK ADJUSTMENT (Fig 26)

108 The wheel door up-locks in the wheel bay are fitted with adjustable rods to adjust the position of each latch, and also with an adjustment nut on each housing to tension the return spring. The five up-lock pins on the door are mounted on serrations to permit the door to be rigged so that all five locks are supporting the door and the door skin is flush with the wing skin.

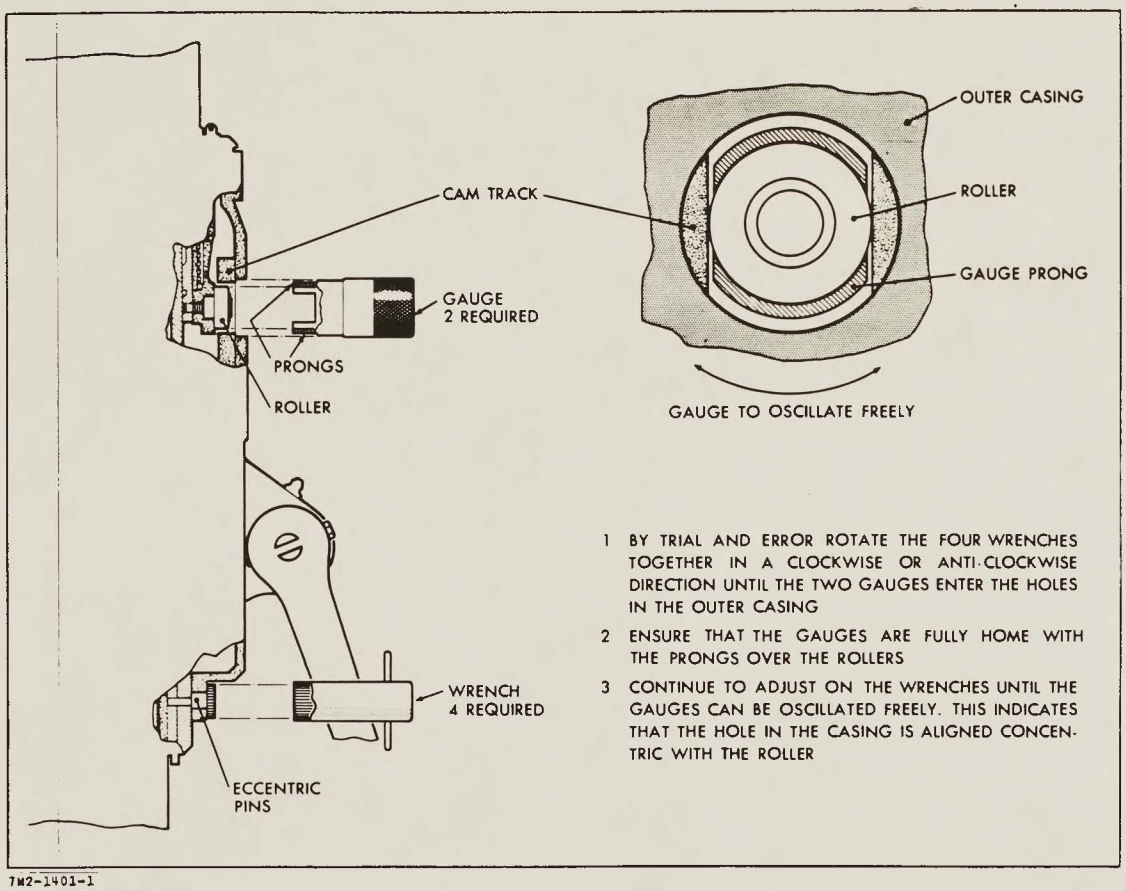
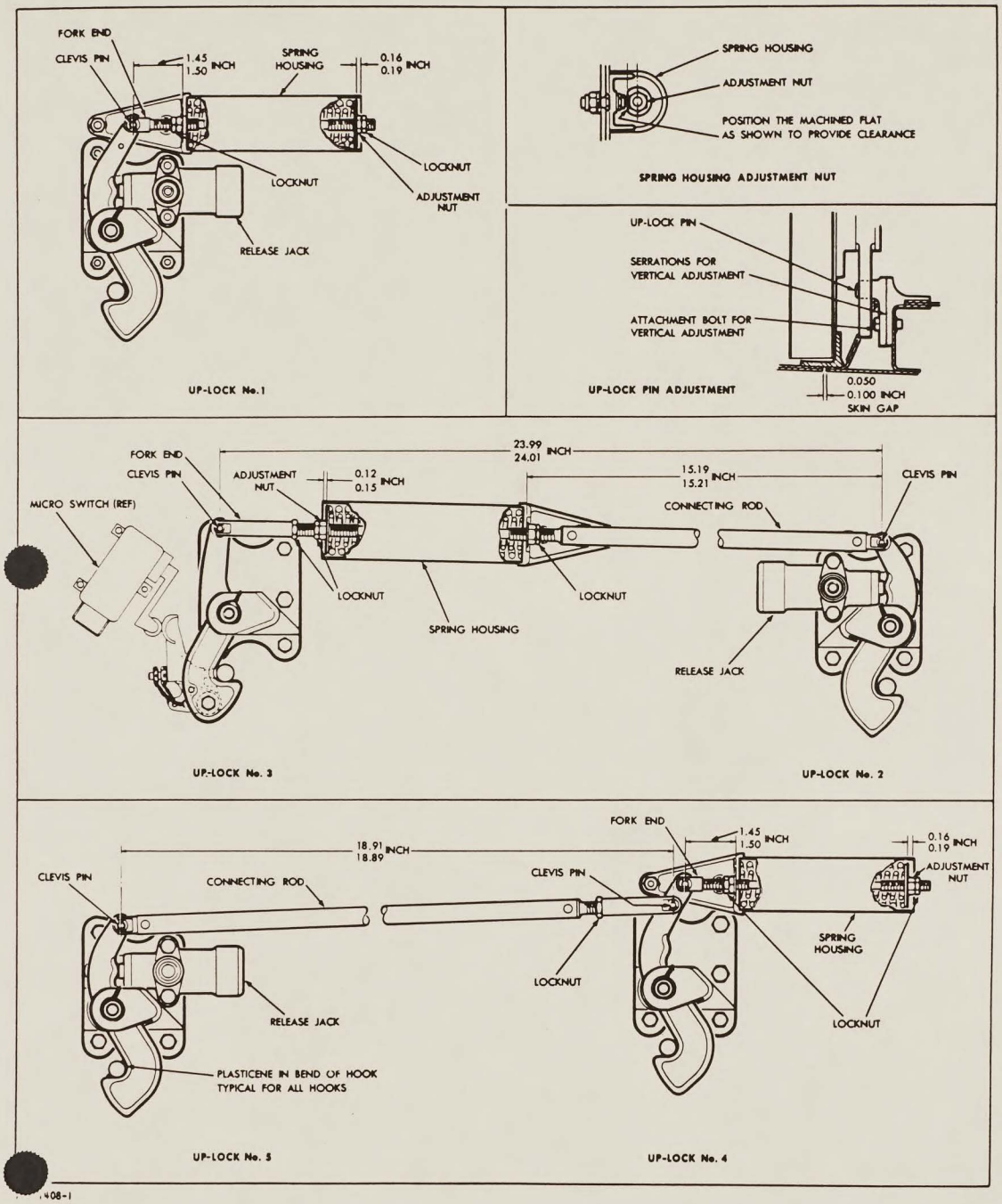


FIG. 25 CAM ROLLER ADJUSTMENT

ARROW 1 SERVICE DATA



408-1

FIG. 26 WHEEL DOOR UP-LOCK ADJUSTMENT

ARROW 1 SERVICE DATA

CAUTION

It is important to secure all clevis pins before retracting the door. Failure to do this could result in the pin falling out and the door up-lock failing to release when the gear is selected down.

109 To adjust the wheel door up-locks and rig the wheel door in the up position proceed as follows:

(a) Adjust No. 1 up-lock latch as follows:

(1) Adjust the fork end to the 1.45-1.50 inch dimension, from the clevis pin to the spring housing face.

(2) Adjust the spring housing adjustment nut to the 0.16-0.19 inch dimension, from the adjustment nut flange to the end face of the housing.

NOTE

Ensure that the machined flat on the adjustment nut is positioned as shown in fig 26.

(3) Tighten the locknuts and secure the clevis pin.

(b) Adjust Nos. 2 and 3 up-locks as follows:

(1) Adjust the connecting rod to the 15.19-15.21 inch dimension.

(2) Adjust the adjustment nut to the 0.12-0.15 inch dimension, from the adjustment nut flange to the end face of the spring housing.

NOTE

Ensure that the machined flat on the adjustment nut is positioned as shown in fig 26.

(3) Adjust the fork end, connecting No. 3 lock to the spring housing, to the 23.99-24.01 inch dimension between the clevis pin centres.

(4) Tighten the locknuts and secure the two clevis pins.

(c) Adjust Nos. 4 and 5 up-locks as follows:

(1) Adjust the fork end, connecting No. 4 lock to the spring housing, to the 1.45-1.50 inch dimension.

(2) Adjust the adjustment nut to the 0.16-0.19 inch dimension, from the adjustment nut flange to the end face of the spring housing.

NOTE

Ensure that the machined flat on the adjustment nut is positioned as shown in fig 26.

(3) Adjust the connecting rod to the 18.89-18.91 inch dimension between the clevis pin centres.

(4) Tighten the locknuts and secure the clevis pins.

(d) Connect the hydraulic hand pump to the down line in the duct bay and the up line connection on the door jack.

(e) Place plasticene in the hook of each latch and retract the door by pressurizing the up line.

(f) Adjust on the door up-lock pins to position the door skin flush with the wing skin and at the same time check, by means of the plasticene, that the door is supported by each latch.

(g) Secure all the pin adjustments when the plasticene in the latches indicates that all five latches are supporting the door and that the door skin is flush with the undersurface of the wing.

(h) Check the skin gap between the door and wing skin is 0.05-0.10 inch. Trim the door skin, if necessary, to obtain this gap.

(j) Adjust the door jack sequence valve as detailed in fig 27.

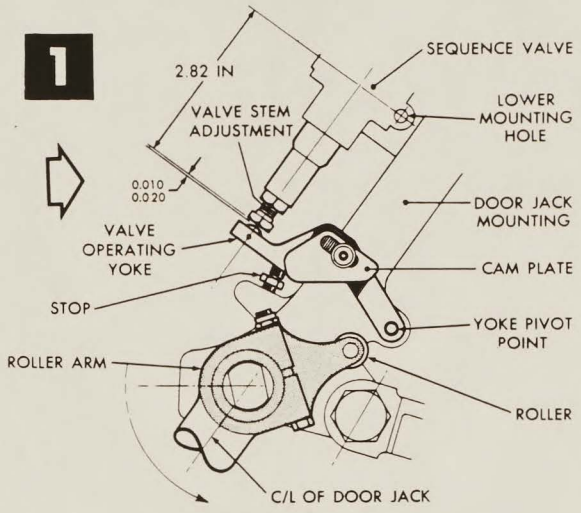
(k) Disconnect the hand rig from the up line connection on the door jack and connect it to the up line in the duct bay. Reconnect the door jack line.

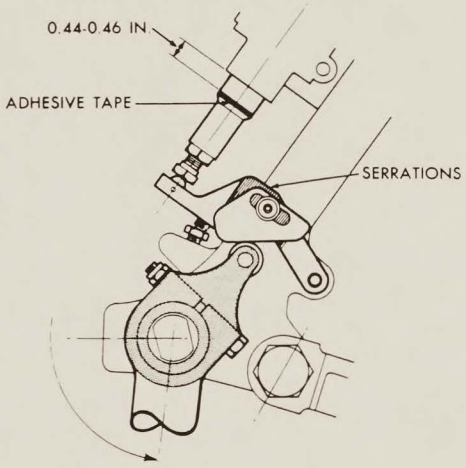
ARROW 1 SERVICE DATA

1 BEFORE MOUNTING THE SEQUENCE VALVE, ADJUST THE VALVE STEM TO OBTAIN A DISTANCE OF 2.82 IN. BETWEEN THE CENTRE OF LOWER MOUNTING HOLE AND THE END OF THE VALVE STEM.

2 RETRACT THE DOOR JACK UNTIL THE ROLLER IS CLEAR OF THE CAM PLATE.

3 ADJUST THE STOP ON THE VALVE MOUNTING TO OBTAIN A CLEARANCE OF 0.010 - 0.020 IN. BETWEEN THE VALVE OPERATING YOKE AND THE VALVE STEM.





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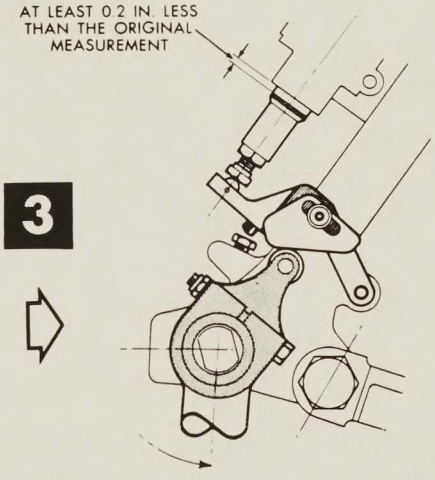
4 EXTEND THE DOOR JACK TO THE FIRST STAGE BLOW-BACK LOCK POSITION.

5 ADJUST THE CAM PLATE ON THE SERRATIONS UNTIL IT CONTACTS THE ROLLER WITHOUT DEPRESSING THE VALVE STEM.

6 PLACE A PIECE OF ADHESIVE TAPE AROUND THE VALVE PLUNGER AT A DISTANCE OF 0.44 - 0.46 IN. FROM THE VALVE BODY.



7 FULLY EXTEND THE DOOR JACK AND CHECK BY THE ADHESIVE TAPE THAT THE VALVE HAS BEEN DEPRESSED BY AT LEAST 0.2 IN. (THE VALVE IS FULLY OPEN AT 0.19 IN.)

8 TO INCREASE THE AMOUNT THE VALVE IS DEPRESSED, INCREASE THE DIMENSION SHOWN IN OPERATION (1) BY SCREWING OUT THE VALVE STEM ADJUSTMENT. REPEAT OPERATIONS 2 TO 7 INCLUSIVE.

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FIG. 27 WHEEL DOOR SEQUENCE VALVE ADJUSTMENT

(m) Check to ensure that all clevis pins are secure. Remove the main gear ground lock and retract the gear.

(n) Check that the door skin is flush with the wing skin and that a skin gap of 0.05-0.10 inch exists between the leg fairing and the door skin.

(p) Lower the landing gear and disconnect the hand pump rig. Connect the up and down lines in the duct bay.

(q) Connect the hydraulic test stand to the aircraft and bleed the system. See Arrow 1 Service Data - Section 20 - Utility Hydraulics - Power Circuit.

(r) Function test the complete landing gear.

WHEEL DOOR JACK INSTALLATION AND ADJUSTMENT

110 Each door jack is supplied complete with attachment bracket and sequence valve mounting. To install the jack proceed as follows:

(a) Attach the mounting bracket to the four studs on rib No. 4 and secure with nuts.

(b) Remove the blanks from the jack and connect the hand pump lines to the jack connections.

(c) Install the sequence valve on the mounting.

(d) Remove the blanks from the pipelines and connect the pipelines to the sequence valve.

(e) Operate the hand pump and fully extend the jack.

(f) Measure the distance between the jack rod and cylinder pivot pin centres. This should be 26.125-26.375 inches.

(g) To adjust the extended length of the jack, release the lockring on the top of the cylinder and adjust the cage plug to obtain the dimension in (f).

NOTE

Do not adjust the end fitting on the jack rod to alter the fully extended length of the jack.

(h) Fully retract the door jack and place a piece of adhesive tape around the jack rod so that one edge just touches the cylinder body.

(j) Extend the jack and connect the cylinder to the door bracket. A laminated shim washer must be fitted between the cylinder bearing and the door bracket to take up any clearance.

(k) Disconnect the hand pump line from the forward connection on the door jack and reconnect the line. Connect the hand pump line to the down line in the duct bay.

(m) Ensure all ground locks are fitted to the nose and main landing gears and apply pressure to the up line connection on the jack, to retract the door.

(n) With the aid of an inspection lamp and mirror verify that there is at least 0.12 inch of overtravel remaining on the jack rod.

(p) To alter the amount of overtravel, adjust on the jack rod end fitting by turning the jack rod with the aid of a strap wrench.

(q) Adjust the door jack sequence valve as shown in fig 27.

(r) Disconnect the hand pump lines from the aircraft and connect up the aircraft hydraulic lines.

(s) Check that the aircraft is correctly jacked. Remove the ground locks and connect the hydraulic test stand to the utility hydraulic ground test connections.

(t) Function test the landing gear, checking that the landing gear retracts and extends without fouling the door.

ARROW 1 SERVICE DATA

EQUIPMENT LIST

AVRO PART NO.	MANUFACTURER AND PART NO.	NOMENCLATURE	QUANTITY IN SYSTEM
7-1962-17	Jarry Hydraulics P-199	Main Gear Jack LH	1
7-1962-18	Jarry Hydraulics P-199	Main Gear Jack RH	1
7-1962-11	Dowty XP3030	Up-lock Release Jack	2
7-1962-23	Dowty XT3086	Main Gear Door Jack	2
7-1062-2721	Avro Aircraft Ltd.	Pivot Door LH	1
7-1062-2722	Avro Aircraft Ltd.	Pivot Door RH	1
7-1062-2291	Avro Aircraft Ltd.	Main Gear Door LH	1
7-1062-2292	Avro Aircraft Ltd.	Main Gear Door RH	1
7-1062-3921	Avro Aircraft Ltd.	Main Gear Up-lock LH	1
7-1062-3922	Avro Aircraft Ltd.	Main Gear Up-lock RH	1
7-1092-3	Dowty XV1283-1A	Main Gear Leg LH	1
7-1092-4	Dowty XV1283-1B	Main Gear Leg RH	1
7-1062-4393	Avro Aircraft Ltd.	Leg Fairing LH	1
7-1062-4394	Avro Aircraft Ltd.	Leg Fairing RH	1
7-1092-11	Dowty XV1284-1A	Telescopic Side Stay LH	1
7-1092-12	Dowty XV1284-1B	Telescopic Side Stay RH	1
7-1092-1	Dowty V1283-9A	Shock Absorber LH	1
7-1092-2	Dowty V1283-9B	Shock Absorber RH	1
7-1092-165	Goodyear 9541028	Wheel	4
7-1092-167	Goodyear 771322	Tire	4
7-1092-169	Goodyear 9541027	Brake Unit	4

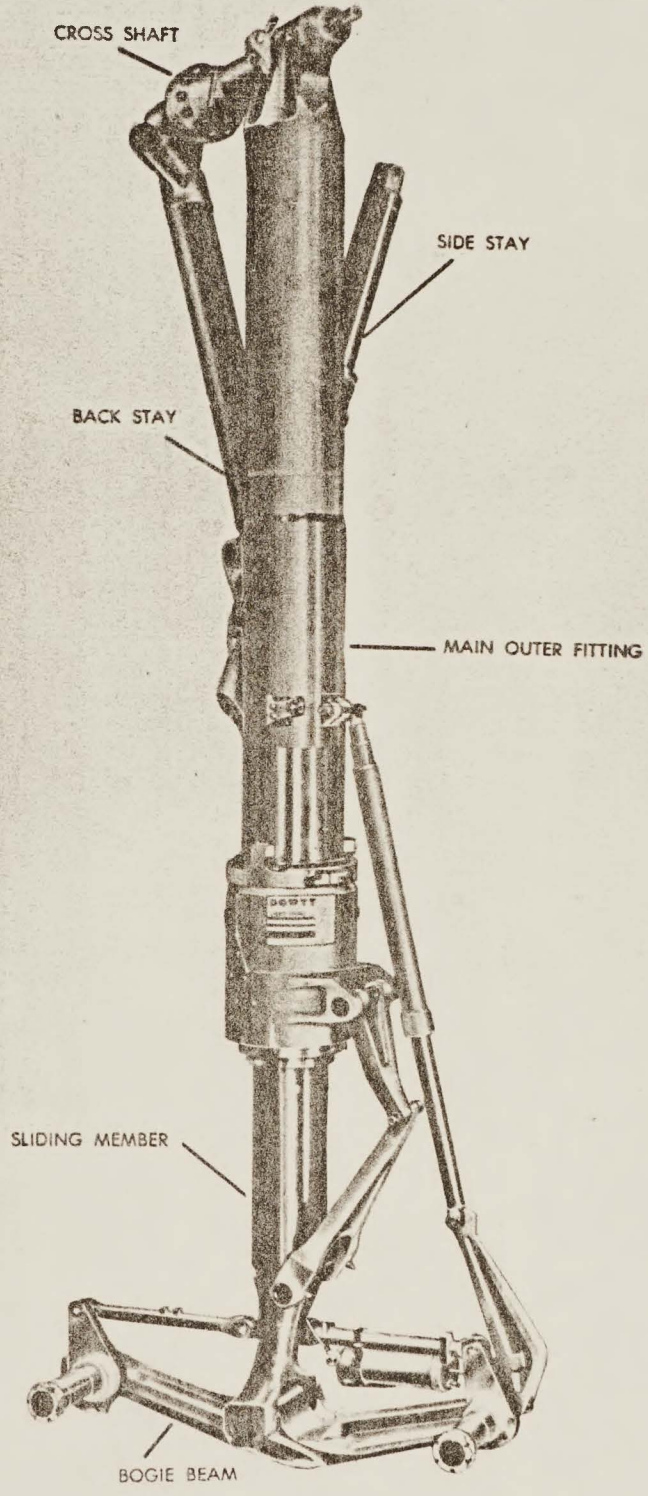


FIGURE 1 GENERAL ARRANGEMENT OF GEAR

ORIGINAL DOWTY DESIGN

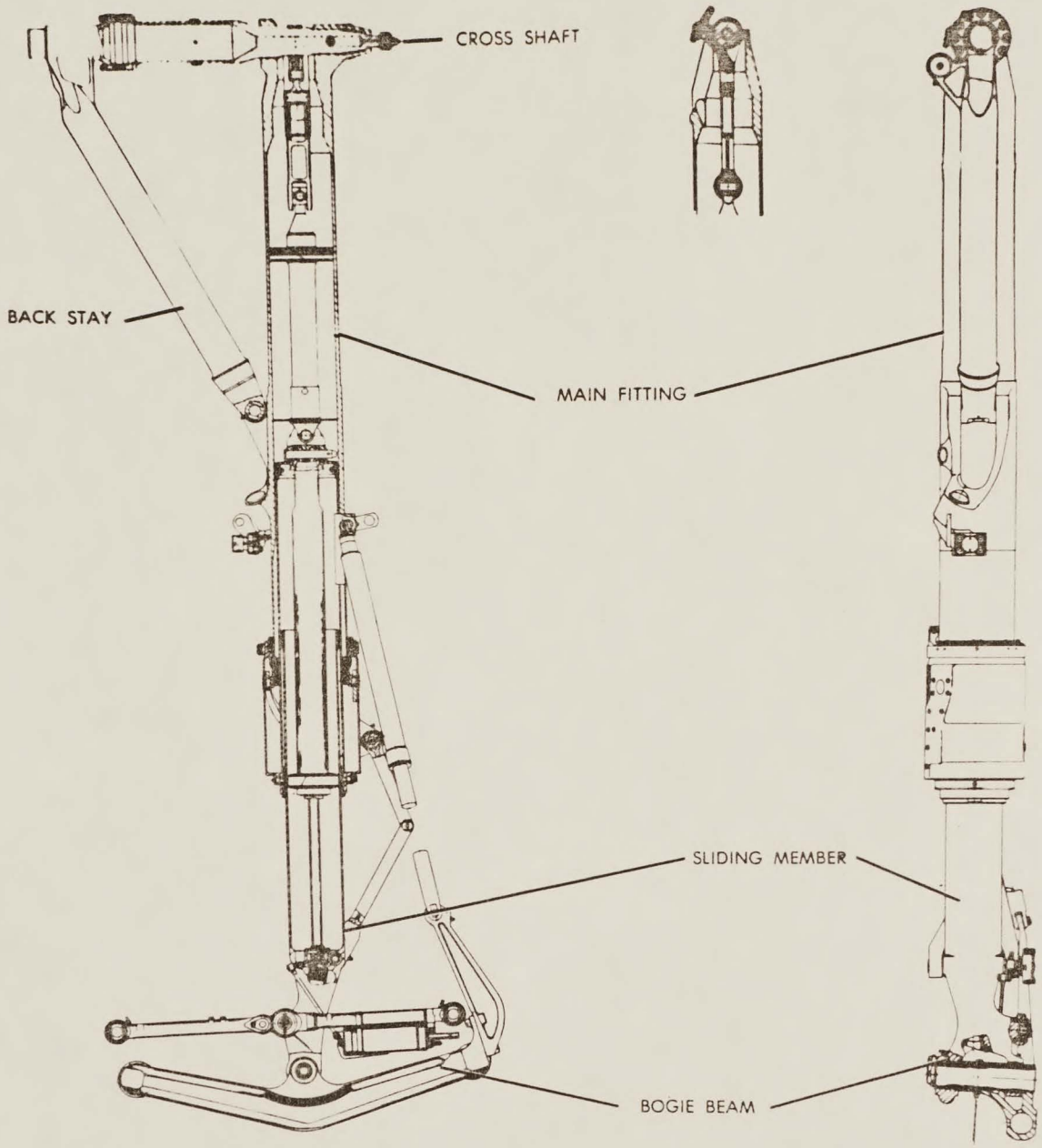
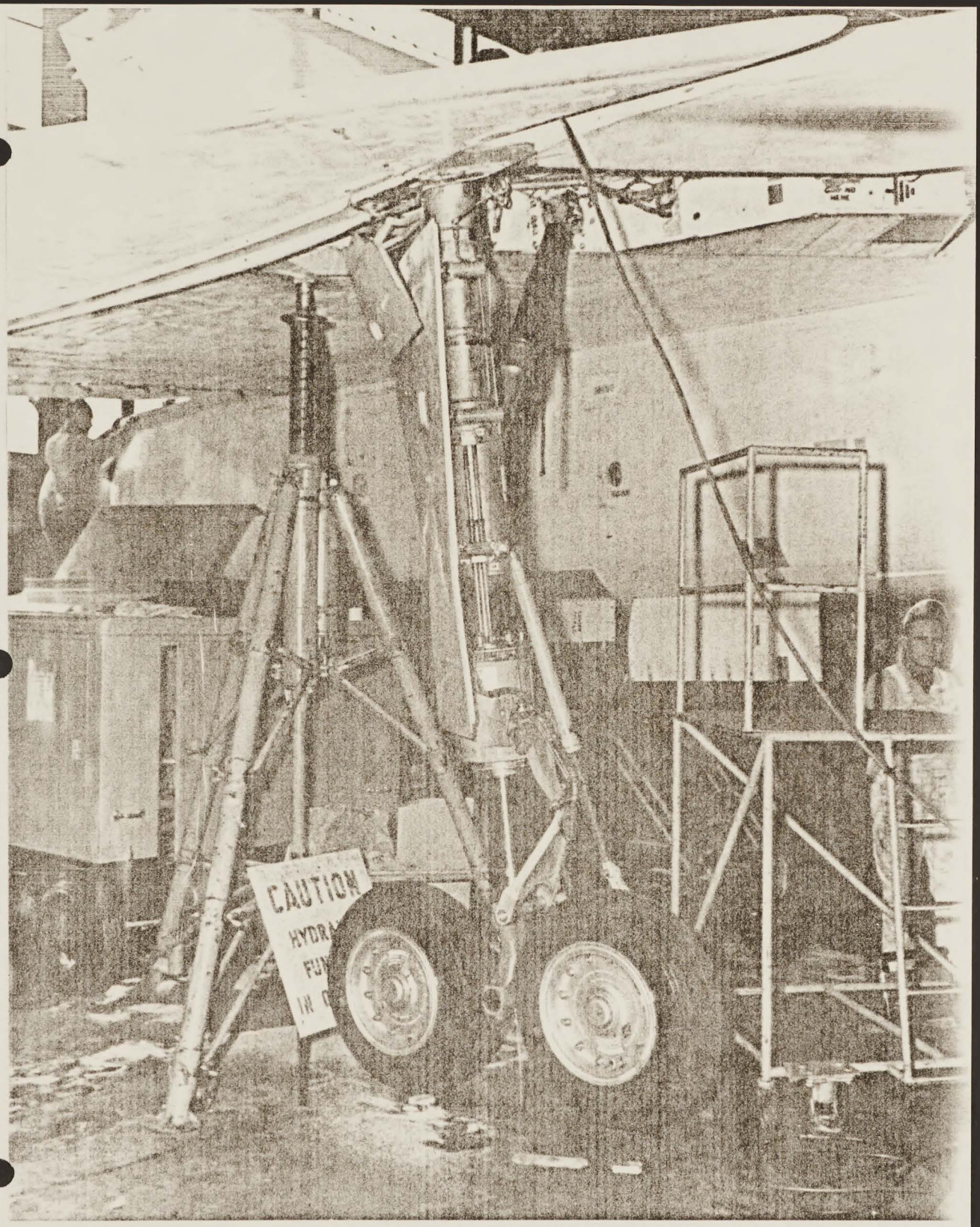


FIGURE 2 ASSEMBLY OF GEAR

ORIGINAL DOWTY DESIGN


CAUTION

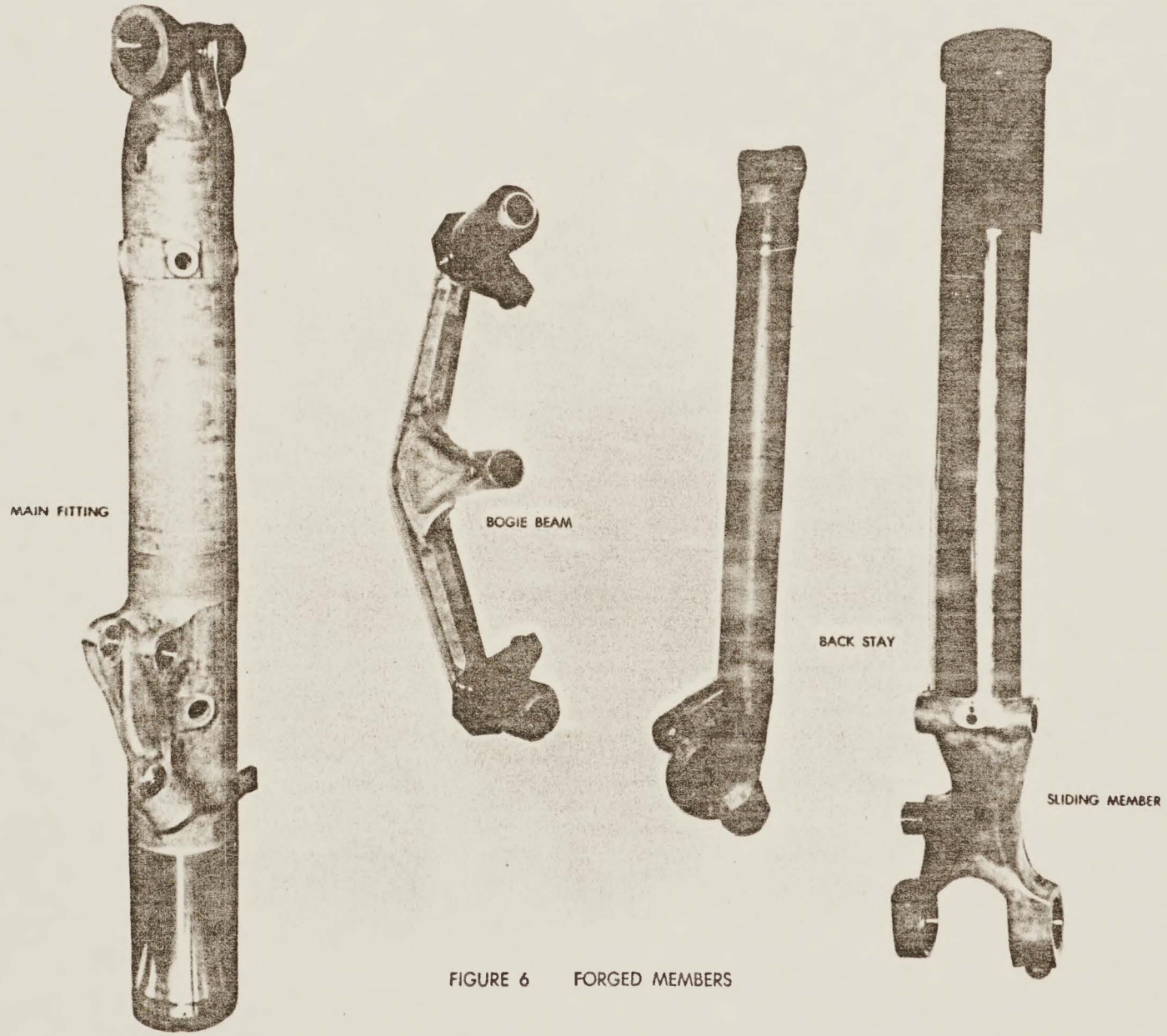
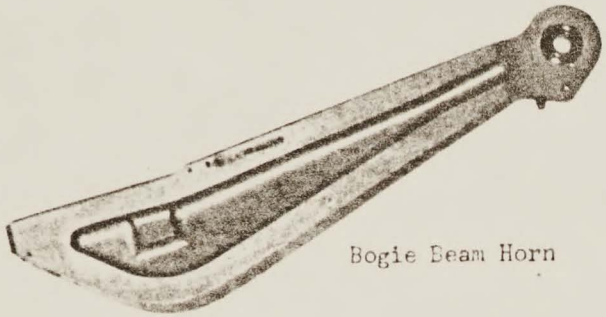
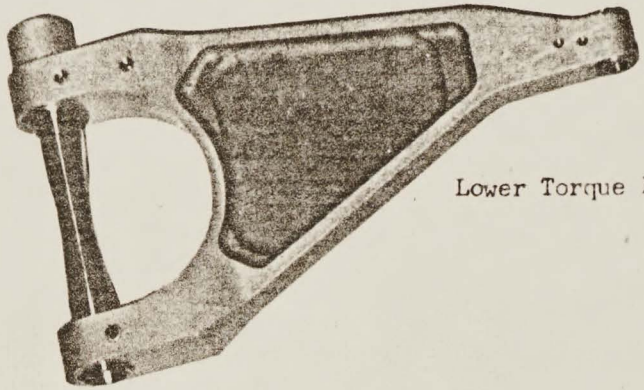


FIGURE 6 FORGED MEMBERS

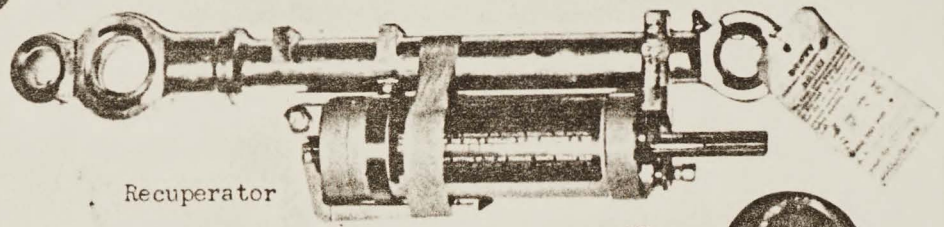


Bogie Beam Horn

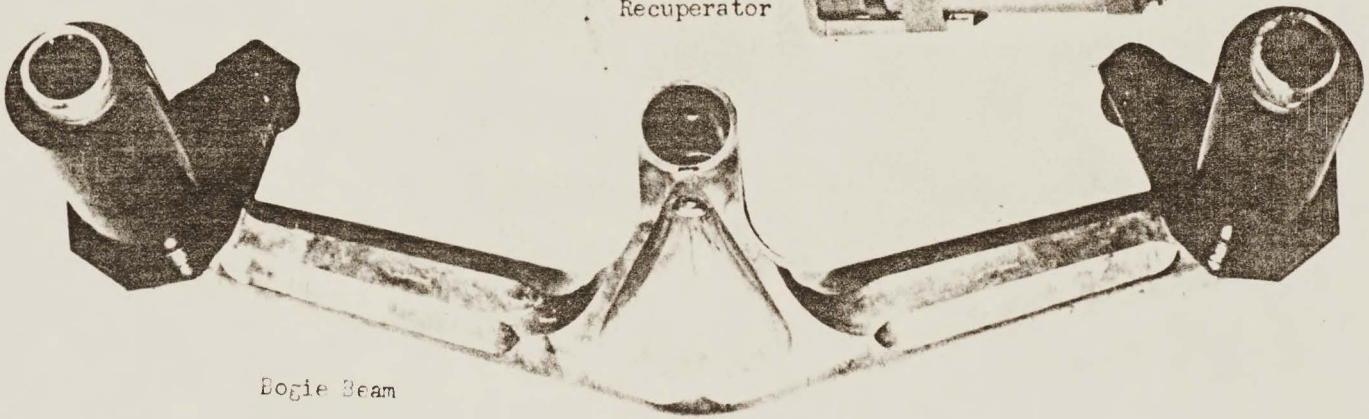


Lower Torque Link

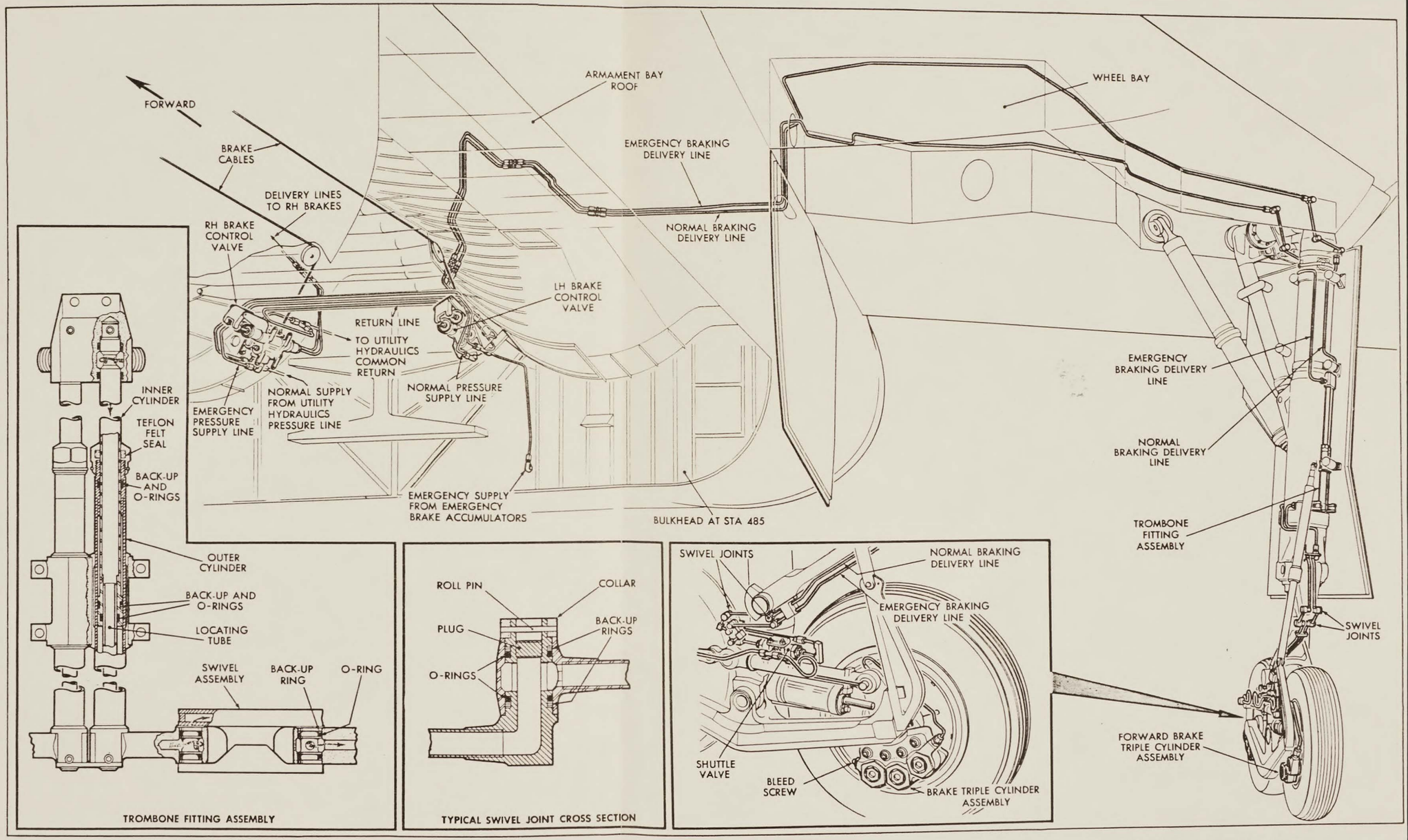
Brake Links



Recuperator

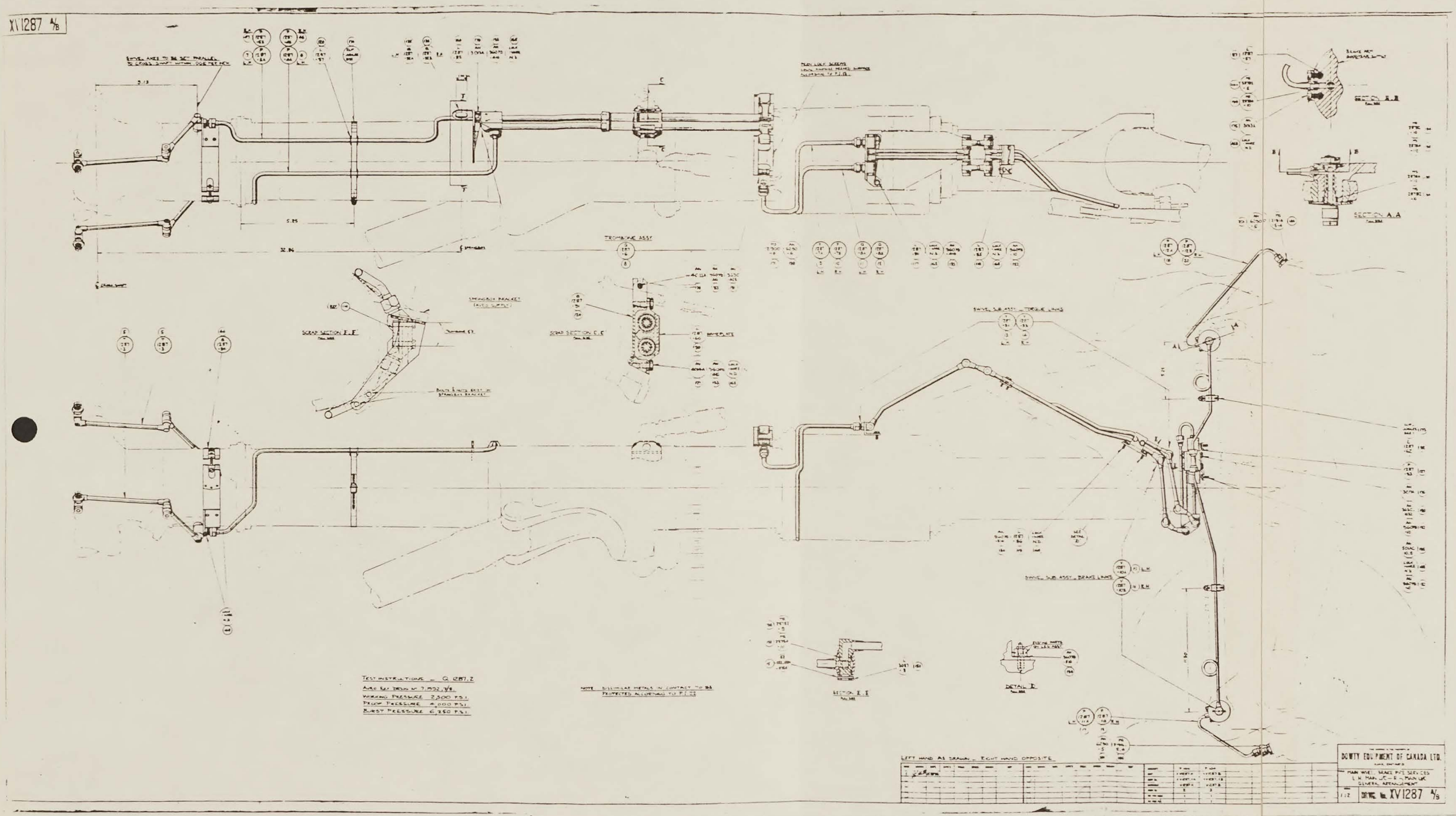


Bogie Beam



7M1-2203-1

FIG. 2 LAYOUT OF WHEEL BRAKES LINES AND COMPONENTS


XV1287 A/B
TROMBONE ASSY
SCRAP SECTION F.F
SCRAP SECTION E.E
SECTION B.B
SECTION A.A
SWIVEL SUB ASSY – TORQUE LINKS
SWIVEL SUB ASSY – BRAKE LINKS
SECTION E.E
DETAIL D
TEST INSTRUCTIONS – Q 1287.2
AVRO REF DRWG No 7.1532, 7/8.
WORKING PRESSURE 2,500 P.S.I.
PROOF PRESSURE 4,000 P.S.I.
BURST PRESSURE 6,250 P.S.I.
NOTE DISSIMILAR METALS IN CONTACT TO BE PROTECTED ACCORDING TO P.I. 22
LEFT HAND AS DRAWN – RIGHT HAND OPPOSITE
DOWTY EQUIPMENT OF CANADA LTD.
MAIN WHEEL BRAKE PIPE SERVICES
L.H. MAIN U/C – R.H. MAIN U/C
GENERAL ARRANGEMENT
1:2
DRWG. No. XV1287 A/B

11526

SECTION A-A

SECTION B-B

SECTION C-C

SECTION E-E

SECTION H-H

SECTION D-D

SECTION J-J

VIEW IN DIRECTION OF ARROW

SECTION F-F

ASSEMBLY OF MICRO SWITCH INDICATOR

SECTION K-K ALONG ℄ OF BOSS

SECTION G-G

13.0.3

79/6

THIS DRAWING IS TO AMERICAN PROJECTION

106.00" (LEG FULLY EXTENDED)

49.70"

8 HOLES 1¼" DIA CLASS B (1.2495"/1.2505")

6.96"/7.02" CRS

MICRO SWITCH MOUNTING PLATE

TRANSPORT PIN

1.0000"/1.0008" DIA

1.2495"/1.2505" DIA

2.1975"

1.0930" MIN ADJUSTMENT

49.303" ± .065

8.745"/8.750" DIA

2.83572/2.84572

2 HOLES 3/16" DIA CLASS B (.327/.333)

3.00" CRS (TRUE)

6.00" (TRUE) LENGTH OF PIN

1.00" DIA BORE IN PIN

ACCESS HOLE FOR PIN-PIN LOCKING END OF SHOCK ABSORBER

LOWER END OF UNDERCARRIAGE SWEEPS THRU 37½° DURING RETRACTION

UNDERCARRIAGE SHORTENED 8.50" DURING RETRACTION

VARIOUS SHIPPING PARTS SHOWN ON XV 283 "B" MAIN UNDERCARRIAGE ASSY HAVE BEEN OMITTED FROM THIS DRWG FOR CLARITY

ADJUSTMENT OF UNLOCK PIN IS EFFECTED BY MEANS OF ECCENTRIC BOLTS AND 4 ELONGATED SLOTS
ADJUSTMENT MARKED THUS ▼ MAY BE INCREASED FROM 2.101 MIN TO 2.220" MAX AT THE EXPENSE OF ADJUSTMENT MARKED THUS ▼

2 HOLES .716" DIA FOR JURY STRUT

DIRECTION OF FLIGHT

DIRECTION OF TWIST

1¼"-6 UNF-3A

3.233/3.245" DIA

2.6243"/2.6248" DIA

2.4993"/2.4998" DIA

2.875" A/FLATS

ADJUSTMENT BOLT FOR SHORTENING CHAIN SQUARE (.810" A/FLATS

1.8" DIA CLASS A (1.124"5/1.126"5)

15.50" ± 1/8" FULL TRAVEL

STATIC GROUND WIRE TO BE DISCONNECTED AT SWITCH BOX ATTACHED TO THE UNIT TO OBTAIN CHANGE IN "RANG"

TRANSPORT BRACKET IS NOT SHOWN IN THIS VIEW ONLY

TOWING EYE SHOWN EXTENDED AND RECESSED FOR CLARITY SPRING RETRACTS TOWING EYE WHEN NOT IN USE

4 WHEELS

JACKING DOME

XV 283 A - LEFT HAND AS DRAWN
XV 283 B - RIGHT HAND

DOWTY EQUIPMENT OF CANADA LTD.

MAIN UNDERCARRIAGE UNIT

SCALE ½ DWG No. XV 283 "B"