Aerolineas Argentinas

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CHAPTER 08 – LEVELING AND WEIGHING

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LEVELING

1. General
   A. The airplane can be leveled by using either a plumb bob, an attitude gage, or an engineer's transit.
   B. For an alignment check of the airplane structure following repair or modification, a more accurate means of leveling is needed, such as an engineer's transit. For complete details on alignment checking, refer to the Structural Repair Manual Chapter 51, Alignment Check Procedure.

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LEVEL AIRPLANE USING PLUMB BOB

1. General
   A. The plumb bob may be used for general airplane leveling, such as when the airplane is being jacked for weighing, general maintenance, gear retraction tests, etc.
2. Equipment and Materials
   A. Plumb Bob and Cord
3. Level Airplane (Fig. 201)
   A. Park airplane in most level position available.
   B. Hang plumb bob from bracket marked LEVEL HERE in the right main wheel well. The bracket is directly above the leveling scale.
   C. Check position of plumb bob after it has stopped swinging. If plumb bob is not over zero on the leveling scale, the airplane must be adjusted by jacking or oleo inflation until plumb bob is zeroed.
      (1) For minor leveling adjustments, the main and nose landing gear shock struts can be extended or retracted by inflation to normal service band limits or deflation as required (Ref Chapter 12, Main Landing Gear Shock Strut Servicing and Nose Landing Gear Shock Strut Servicing).

          WARNING: SHOCK STRUTS MUST NOT BE PRESSURIZED BEYOND NORMAL SERVICING LEVELS. TO DO SO CAN RESULT IN OVER PRESSURIZATION AND POSSIBLE INJURY TO PERSONNEL AND SERIOUS SHOCK STRUT DAMAGE.

      (2) For major leveling adjustments, place appropriate jack pad adapters and jacks at jacking points A, B, and C. Refer to Airplane Jacking, Chapter 7.

          CAUTION: ALL JACKS MUST BE EQUIPPED WITH LOAD OR PRESSURE GAGES. JACK POINT LOAD LIMITS MUST NOT BE EXCEEDED.

      (3) Raise or lower appropriate jack until plumb bob is centered over zero on leveling scale.

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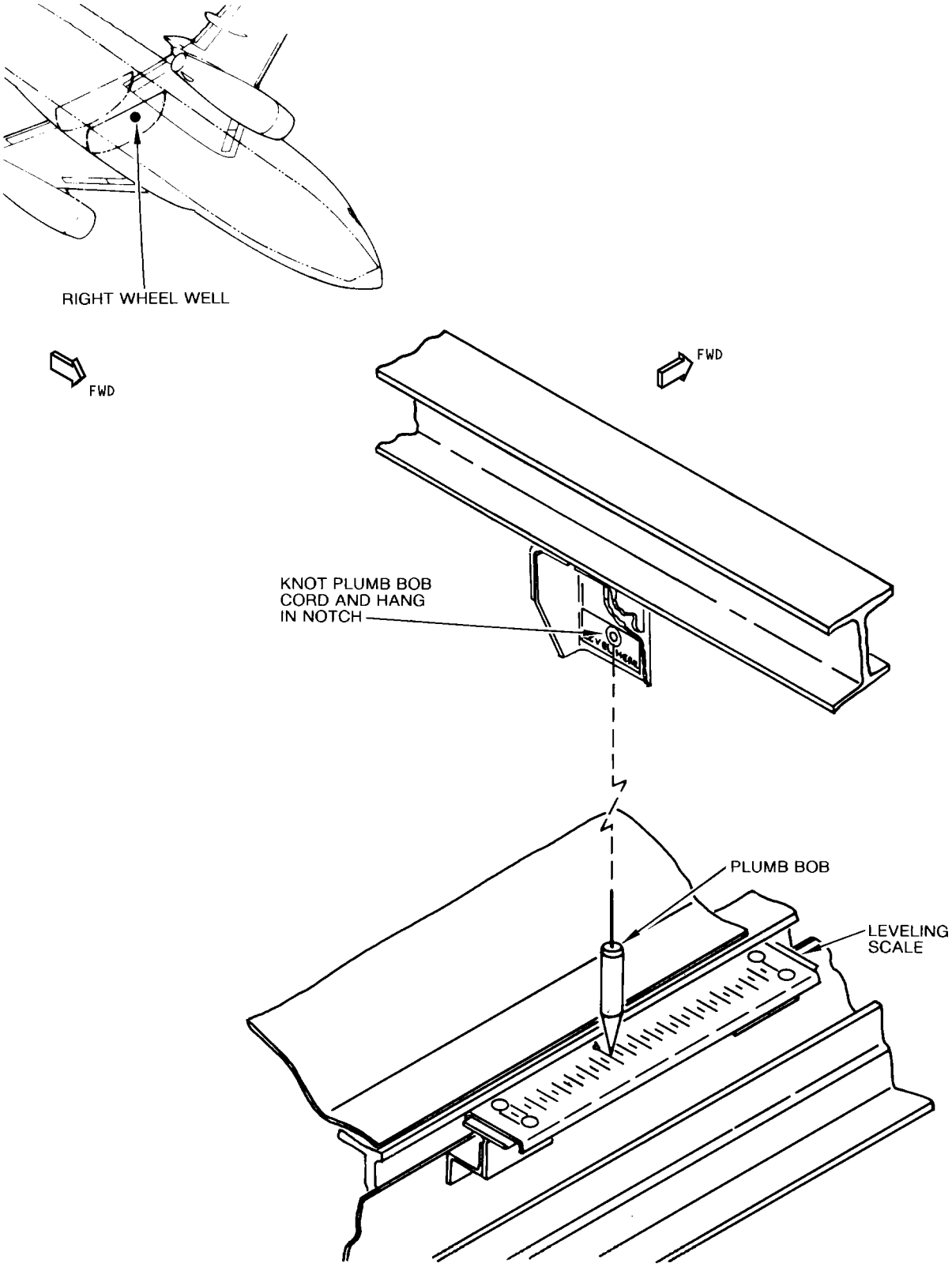

Airplane Leveling Using Plumb Bob
Figure 201

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LEVEL AIRPLANE USING ATTITUDE GAGE

1. General
   A. The primary purpose of the attitude gage is to determine the correct attitude of the airplane on the ground prior to a fuel quantity check. The pitch and roll readings combined with dripstick readings will give accurate fuel quantities in the tanks. Refer to Chapter 28, Fuel Quantity Indicating System, for further information on dripstick readings. In this chapter, the attitude gage will be used to level the airplane while jacking.
2. Equipment and Materials
   A. Airplane Attitude Gage, F70043
3. Level Airplane (Fig. 201)
   A. Park airplane in most level position available.
   B. Place both alignment tube tips of attitude gage against ceiling in main wheel well. Position gage parallel to airplane centerline to determine level of longitudinal axis and pitch of airplane (Fig. 201).

      NOTE: Ensure that alignment tube tips are resting on a flat surface of the wheel well ceiling between the rows of rivets that attach the ceiling panel to the floor beams.

   C. Set screw adjuster on top of attitude gage until pointer is on zero. If bubble in level vial is not centered the airplane must be raised accordingly. The bubble will move toward the high end of the airplane.
   D. Correct airplane attitude, proceeding until airplane is level along longitudinal axis.
      (1) For minor adjustments, the main and nose landing gear shock struts can be extended or retracted by inflation or deflation as required. Refer to Chapter 12, Main Landing Gear Shock Strut Servicing and Nose Landing Gear Shock Strut Servicing.

         WARNING: SHOCK STRUTS MUST NOT BE PRESSURIZED BEYOND NORMAL SERVICING LEVELS. TO DO SO CAN RESULT IN OVERPRESSURIZATION AND POSSIBLE INJURY TO PERSONNEL AND SERIOUS SHOCK STRUT DAMAGE. WITH SHOCK STRUT FULLY EXTENDED PRESSURE MUST NOT EXCEED 67 PSI IN MAIN GEAR (PART NO. 65-73761-1, -2, -3, -4) OR 78 PSI IN MAIN GEAR (PART NO. 65-73761-5, -6), OR 495 PSI IN NOSE GEAR.

      (2) For major adjustments place appropriate jack pad adapter and jack at jacking point C. Refer to Airplane Jacking, Chapter 7.

         CAUTION: JACK MUST BE EQUIPPED WITH LOAD OR PRESSURE GAGE. DO NOT EXCEED JACKING POINT LOAD LIMIT.

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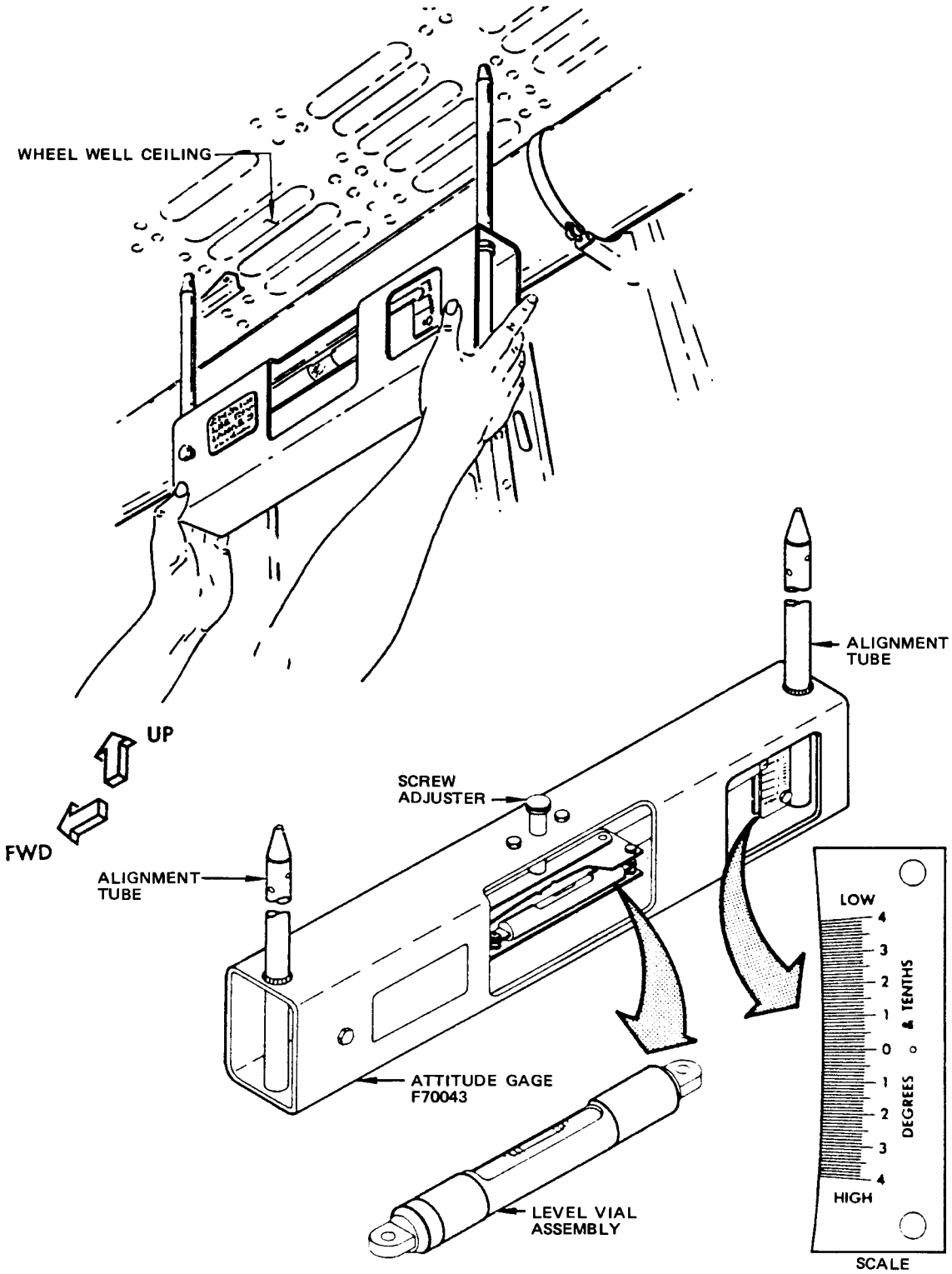

RIGHT MAIN WHEEL WELL

Airplane Leveling Using Attitude Gage
Figure 201

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(3) Raise or lower jack until bubble in level vial is centered.

E. Place attitude gage in a position that is perpendicular to the airplane centerline. Ensure that both alignment tube tips are centered between the rows of rivets on the floor beams. The gage can now be used to measure the roll attitude of the airplane.

F. With pointer on zero adjust airplane attitude until bubble is centered in level vial.
   (1) For minor adjustments, the main landing gear shock struts can be extended or retracted. Refer to NOTE and WARNING following step D.(1).
   (2) For major adjustments place appropriate jack pad adapters and jacks at jacking points A and B (Ref steps D.(2) and D.(3)).

G. Repeat longitudinal and lateral leveling until level vial bubble is centered at both positions.

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WEIGHING

1. General
   A. For detailed weighing procedures refer to Weight and Balance Control and Loading Manual. Preliminary weighing instructions and four weighing procedures are outlined in the manual.
   B. Four equally accurate procedures for weighing the airplane may be used. They are:
      (1) Landing Gear Wheels, with Floor Scales
      (2) Main Landing Gear and Nose Gear Jack Points
      (3) Main Landing Gear and Forward Body Jack Points
      (4) Wing and Aft Body Jack Points
   C. The procedure selected depends upon the type of equipment available, the cost of new equipment, and the projected demand for aircraft weighing.
   D. If floor scales are available, use procedure (1). The airplane can be weighed in much less time with procedure (1) than with procedures requiring jacks.
   E. Procedure (2) is preferred over the two procedures using wing or body jacking points because there will be less chance of structural damage to the airplane through failure of a supporting jack or weighing cell. Procedure (2) is more economical and less time consuming than procedures (3) or (4) because it does not require the installation of oleo locks.

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