TAIL NUMBER:_____ SERIAL NUMBER:_____ DATE_____

International Comanche Society
Aircraft Maintenance Clinic Condition Inspection

1. Secure Tail Stand (350 pounds for the twins – 400 singles) to tail tiedown fitting, install jacks at wing lifting points, and elevate aircraft evenly so that all wheels clear the surface; not too nose-high. Verify that sufficient tail weight has been used to prevent aircraft tipping towards the nose. Jack up aircraft to be level laterally with surface. Secure jacks with safety features to prevent accidental collapse.

2. Using tow bar, align rudder as follows: **Singles**: Rudder/Tail Cone aligned. **Twins**: Rudder .25" to right of Tail Cone.

3. Level Control Wheels, install wood clamping device to control columns, install gust lock between copilot wheel and rudder pedals. Measure setting of aerodynamic control surfaces with digital protractor as follows:

Measure Angle of Aircraft at Leveling Screws: _____
Measure Angle of Right Aileron 6.5 inches from inboard edge next to rivets:_____ **Required**: 12 degrees
Measure Angle of Right Flap 23 inches from inboard edge next to rivets: _____ **Required**: 13 degrees
Measure Angle of Left Flap 23 inches from inboard edge next to rivets: _____ **Required**: 13 degrees
Measure Angle of Left Aileron 6.5 inches from inboard edge next to rivets _____ **Required**: 12 degrees

Using alignment tool, drop plumb bob to aft edge of tire, determine offset _____ **Required**: Centered

Subtract Aircraft angle from measured control surface angles to obtain final surface settings:

Right Aileron_____ **Left Aileron** _____ **Right Flap** _____ **Left Flap** _____

Remove wood control column clamping device and wheel/rudder pedal gust lock.

4. Remove aft fuselage access panel and measure elevator and rudder cable tension with Tensiometer:

Aileron Cable Tension	_____ **Required**: 20 lbs ± 20%	**Recommended**: 24 lbs minimum/26 lbs maximum
Stabilator Cable Tension	_____ **Required**: 18 lbs ± 20%.	**Recommended**: 24 lbs minimum/28 lbs maximum
Stabilator Trim Tab Tension	_____ **Required**: 12 lbs ± 20%	**Recommended**: 14 lbs minimum/16 lbs maximum
Rudder Cable Tension	_____ **Required**: 25 lbs to 40 lbs	**Recommended**: 25 lbs to 40 lbs

5. Apply lifting and fore/aft forces to each stabilator and visually inspect integrity of all four torque tube bearing fittings for looseness of rivets or Hi-Shear rivets, as appropriate for the model. Note any findings (including satisfactory) below.

Notes: _____

Replace aft fuselage access panel using new 8-32 screws as required.

6. Using steel fixture, clamp magnetic dial indicator to fixture, align dial indicator to aft edge of stabilator trim tab and set dial to zero. Holding stabilator in the nose up position with left hand, determine total trim tab play using right hand.

Measured Trim Tab Play _____ **Required**: Less than .076 inches **Recommended**: Less than .050 inches.

Using flashlight, make visual inspection of trim drum play, rod-end play, and trim tab bushing/bolt play. Report frindings.

Notes:

7. Inspect aft edge of rudder attachment fittings on vertical fin for cracks. Use stepladder to inspect rudder tip rib for movement and listen for possible cracks. Note findings below.

Notes: _____

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8. Using wood sticks placed on main landing gear wheels centerline, measure distance between sticks front and back side of tire. Measure tire diameter.

Tire Diameter: _____ Tire-To-Tire (Front Side) _____ Tire-To-Tire (Back Side) _____

Toe-In (Toe-Out) = arcTan (Front Side – Back Side)/Tire Diameter = _____ Positive = Toe-Out, Negative = Toe-In

9. Disconnect Landing Gear Motor Transmission from Gear Retraction Torque Tube Assembly. Determine ease of disconnect.

Notes: _____

10. Using small digital protractor, measure vertical angle of main landing gear.

Left Main Gear Vertical Angle _____ **Right Main Gear Vertical Angle** _____ **Required**: 90 degrees

11. Using a digital bathroom scale, small bottle jack, a wood stick (3/4" sq.), and magnetic base dial indicator, attach the dial indicator to oleo strut and align pointer at toggle pivot point. Reset dial to read zero.

Place bottle jack on bathroom scale and adjust until stick just touches at the cross brace. Reset scale to zero, and operate jack until dial indicator reads .125 inches on main gear and .185 inches on nose gear. Record scale weight readings.

Caution: Do Not Exceed 80 pounds. Gear may be adjusted with excessive pre-load or steering rollers touch first.

Left Main Gear Pre-Load _____ **Right Main Gear Pre-Load** _____ **Nose Gear Pre-Load** _____

There is no Service Manual requirement, however, **Recommended Load = 35 to 50 pounds each gear**.

12. Extend emergency landing gear handle, and attach a racheting movers strap to upper section of handle and S hook to aft upper section of spar cap or to rear seat support truss assembly. Pull landing gear motor circuit breaker. Turn on Master Switch. Adjust strap by racheting until green light is off. Attempt to retract each gear assembly by pushing on tire.

LMG Retraction Test _____ **RMG Retraction Test** _____ **Nose Gear Retraction Test** _____

Requirement: Landing gear shall not retract or unlock from the link over-center position

Turn off master switch, and re-connect circuit breaker.

13. Using feeler gages, determine gap of one steering roller to steering arm while other roller is touching. If roller gap is greater than .010 inches, measure gap and diameter of each roller.

Left Roller Diameter _____ **Right Roller Diameter** _____ **Roller Gap** _____

14. Measure Main Gear and Nose Gear side load and fore/aft load play. If gear play is found indicate which items exhibits the motion. Rotate wheels and check for bearing noise and smoothness. Visual check of brake pad thickness and disk for wear.

LMG Play _____ **LMG Bearing Play** _____ **LMG Brake Pads** _____ **LMG Disk Wear** _____

RMG Play _____ **RMG Bearing Play** _____ **RMG Brake Pads** _____ **RMG Disk Wear** _____

Nose Gear Play _____ **Nose Gear Bearing Play** _____

15. Inspect Main Gear strut housings for cracks on rear web.

Left Main Gear Strut Housing _____ **Right Main Gear Strut Housing** _____

TAIL NUMBER:_____ SERIAL NUMBER:_____ DATE_____

16.. Reconnect Landing Gear Motor Transmission.

17. Partially retract gear, and using emergency extension handle, evaluate transmission end play.

Transmission End Play Notes: _____

18. Raise gear to the full up position, checking horn for operation, and amber up light.

Gear Horn Operation: _____ **Amber Gear Up Light:** _____

19. Check fit of wheel in wheel well. Use tape measure to determine wheel free motion to touching the rubber up stops.

Left Main Gear Movement in the Retracted Position: _____

Right Main Gear Movement in the Retracted Position: _____

20. Measure Main Landing Gear Door Pre-Load with the landing gear in the retracted position. Use full width small wood stick on inside of door, a small stick on outside of door, and clamp together at the center of the gear door a with small C clamp. Hang a 9 pound weight from the C clamp lever rod, and measure the gear door deflection at the leading edge.

Left Main Landing Gear Door Deflection: _____ Requirement: .125 inches

Right Main Landing Gear Door Deflection _____ Requirement: .125 inches

Inspect Nose Gear Door for snug fit, hinge pin looseness and centering on fuselage: _____

21. Lower landing gear and observe Green Down Light. Lower aircraft from jacks, and remove tail weight.

Observe landing gear switches and wire during gear down cycle.

Notes: _____

Additional Notes, Comments and Observations: