

Rockwell Commander Type AC11 Elevator Spar Inspection and Report

Part 1. Aircraft Information

Table 1 Aircraft Information	
Model Year	
Model (circle at right)	112 112A 112B 112TC 112TCA 114 114A 114B 114TC 115
Serial Number	
Total Time Airframe	Current Prop: <input type="checkbox"/> 2-Blade <input type="checkbox"/> 3-Blade

	For Recording Below Tach <or> Hobbs			
Current Time				
Engine Conversion <input type="checkbox"/> None <input type="checkbox"/> Hot Shot Normalizer <input type="checkbox"/> Camarillo Normalizer <input type="checkbox"/> 390 Super <input type="checkbox"/> 580 Super	<u>Time Installed</u>	<u>Time Installed</u>	<u>Date Installed</u>	
Service Bulletin SB-112-56B or SB-114-12B in regard to lower fin rib <input type="checkbox"/> No Record Found	<u>Time Complied</u>	<u>Time Complied</u>	<u>Date Complied</u>	Number of Rivet Rows ¹ <input type="checkbox"/> Single Row <input type="checkbox"/> Single Row plus Aft Only <input type="checkbox"/> Single Row plus 1/2 Row <input type="checkbox"/> Two Full Rows
Service Letter SL-112-46 or SL-114-17 in regard to upper rudder spar <input type="checkbox"/> No Record Found	<u>Time Complied</u>	<u>Time Complied</u>	<u>Date Complied</u>	<input type="checkbox"/> Cracked Before Repair <input type="checkbox"/> Gone Beyond Stop Drills <input type="checkbox"/> Never Cracked
Empennage Maintenance, Replacement or Repair Entries (report only most recent) Enter time and date of work from logs and check all boxes below that apply				
Elevators Mentioned			<input type="checkbox"/> Left <input type="checkbox"/> Right <input type="checkbox"/> Damage History	
Replacement of Elevator Hinge Bushing/Bearing			<input type="checkbox"/> Any on Left <input type="checkbox"/> Any on Right	
Replacement of Fittings			<input type="checkbox"/> Any on Left <input type="checkbox"/> Any on Right	
Trim Tabs Mentioned			<input type="checkbox"/> Left <input type="checkbox"/> Right <input type="checkbox"/> Damage History	
Replacement of Trim Tab Rod Ends			<input type="checkbox"/> Either on Left <input type="checkbox"/> Either on Right	
Trim Jackscrew Service			<input type="checkbox"/> Left <input type="checkbox"/> Right	

¹ SB-112-56B and SB-114-12B prescribed installation of a doubler at the lower fin rib located just beneath the horizontal stabilizer, consisting initially of a "horseshoe" doubler at the aft end, or later a half-rib doubler, or later yet a full-rib doubler. The level of repair is easily discernable by observing the extent of the second (lower) row of rivets forward along the rib skin starting from the aft edge. Note that the upper row of rivets may be obscured underneath the rubber seal.

Part 2: General Inspection

Note: Do no cleaning until instructed.

- [] Install the control lock and inspect for detectable play at the locations set forth in Table 2. Any appreciable play heard, felt or seen in the hinges and bearings, and any play in excess of 1/8" total movement at the trailing edges of the elevators and/or trim tabs should be reported by checking the appropriate boxes:

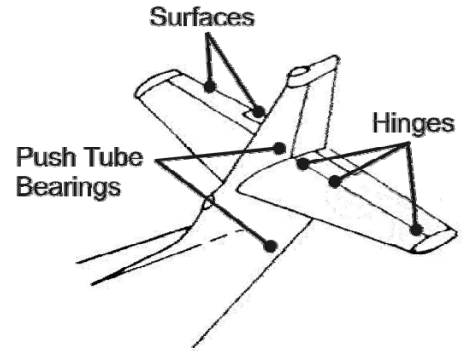


Table 2 Evaluation of Play in Horizontal Tail					
Left Elevator			Right Elevator		
<u>Left Elevator Trailing Edge</u> [] More than 1/8" Total Movement [] Less than 1/8" Total Movement [] Did Not Inspect			<u>Right Elevator Trailing Edge</u> [] More than 1/8" Total Movement [] Less than 1/8" Total Movement [] Did Not Inspect		
Left Elevator Hinges			Right Elevator Hinges		
<u>Outboard</u> [] Audible [] Felt [] Visible [] No Play [] DNI ²	<u>Mid</u> [] Audible [] Felt [] Visible [] No Play [] DNI	<u>Inboard</u> [] Audible [] Felt [] Visible [] No Play [] DNI	<u>Inboard</u> [] Audible [] Felt [] Visible [] No Play [] DNI	<u>Mid</u> [] Audible [] Felt [] Visible [] No Play [] DNI	<u>Outboard</u> [] Audible [] Felt [] Visible [] No Play [] DNI
Left Trim Tab			Right Trim Tab		
<u>Left Trim Tab Trailing Edge</u> [] More than 1/8" Total Movement [] Less than 1/8" Total Movement [] Did Not Inspect			<u>Right Trim Tab Trailing Edge</u> [] More than 1/8" Total Movement [] Less than 1/8" Total Movement [] Did Not Inspect		
<u>Outboard Rod End</u> [] Felt [] Visible [] No Play [] DNI	<u>Inboard Rod End</u> [] Felt [] Visible [] No Play [] DNI	<u>Actuator Jack Screw</u> [] Felt [] Visible [] No Play [] DNI	<u>Actuator Jack Screw</u> [] Felt [] Visible [] No Play [] DNI	<u>Inboard Rod End</u> [] Felt [] Visible [] No Play [] DNI	<u>Outboard Rod End</u> [] Felt [] Visible [] No Play [] DNI
Elevator Push Tube					
<u>Play at Elevator Push Tube – Upper Bearing</u> [] Audible [] Observable (thru the elevator horn port) [] No Play [] DNI					
<u>Play at Elevator Push Tube – Lower Bearing</u> [] Audible [] Observable (by removing the stinger) [] No Play [] DNI					

² Check box if you did not inspect this item.

- Check the torque on the elevator outboard hinge fitting attachment bolts using a 3/8" swivel socket on a 1/4" drive extension and torque wrench set to 30 inch pounds, reporting in Table 3 whether the bolts rotate before torque is reached:

Table 3			
Torque Check of Attachment of Outboard Elevator Fitting to Elevator			
Left Elevator Outboard Hinge Fitting		Right Elevator Outboard Hinge Fitting	
<u>Upper Outboard</u>	<u>Upper Inboard</u>	<u>Upper Inboard</u>	<u>Upper Outboard</u>
<input type="checkbox"/> Rotates	<input type="checkbox"/> Rotates	<input type="checkbox"/> Rotates	<input type="checkbox"/> Rotates
<input type="checkbox"/> No Rotation	<input type="checkbox"/> No Rotation	<input type="checkbox"/> No Rotation	<input type="checkbox"/> No Rotation
<input type="checkbox"/> DNI ³	<input type="checkbox"/> DNI	<input type="checkbox"/> DNI	<input type="checkbox"/> DNI
<u>Lower Outboard</u>	<u>Lower Inboard</u>	<u>Lower Inboard</u>	<u>Lower Outboard</u>
<input type="checkbox"/> Rotates	<input type="checkbox"/> Rotates	<input type="checkbox"/> Rotates	<input type="checkbox"/> Rotates
<input type="checkbox"/> No Rotation	<input type="checkbox"/> No Rotation	<input type="checkbox"/> No Rotation	<input type="checkbox"/> No Rotation
<input type="checkbox"/> DNI	<input type="checkbox"/> DNI	<input type="checkbox"/> DNI	<input type="checkbox"/> DNI

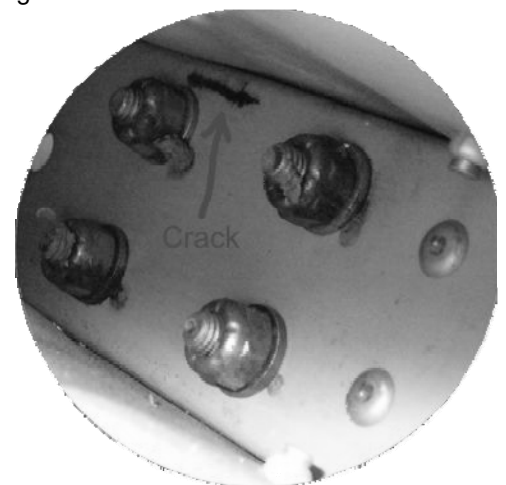
Part 3: Special Inspection for Spar Cracks

Note: Do no cleaning until instructed.

- Visually inspect the area immediately surrounding the outboard elevator hinge fittings attached to the elevator for any cracks or signs of smoke produced by cracks in the elevator spar web. If cracks or signs are found, make mental note of areas for re-inspection after cleaning.
- Clean the fittings and surrounding spar web and re-inspect for cracks. If cracks are found, the inspection may be ended at this point.
- Check this box if inspection ended at this point, and report results in Table 4.
- Remove the elevator tip and inspect the aft face of the spar web in the area of the fitting by inserting a flexible borescope⁴ between the aft end of the outboard elevator rib and the trailing edge of the elevator skin. Generally, it will be possible to insert a scope up to 9 mm diameter. Inspection should cover the areas surrounding the four attachment nuts and extending upward and downward to the elevator skins and at least 1" inboard and outboard from the nuts.

Typically the spar web inside the elevator is clean, so any "lines" are likely of aluminum smoke generated by motion of cracks.

If viewing is obscured by dirt or grease, it may be possible to spray some cleaner (such as avgas) in through the small tooling hole in the outboard rib, and then re-inspect.



³ Check this box if did not inspect this item.

⁴ The Bend-a-Light Mini Pro, sold by Aircraft Spruce, and the B5500 Visual Inspection Device, sold by Snap-On, are both reported to work.

If access cannot be gained for inspection using a borescope, or direct viewing is necessary for confirmation of cracks, contact Aerodyme or CPAC for further consultation.

- [] The inspection is finished at this point. Report the results in Table 4. If cracks have been found, and if possible, take digital pictures for the owner to upload to the survey page.

Table 4 Special Inspection Results			
(at right, check all that apply and record length, or distance, or count as appropriate)	<u>Elevator</u>		Length or Distance or Count
	Left	Right	
No Defects Found			
Crack Along Upper Edge of Fitting, and How Long?			
Crack Along Lower Edge of Fitting, and How Long?			
Crack Beyond Inboard Edge of Fitting, and How Far?			
Crack Beyond Outboard Edge of Fitting, and How Far?			
Crack Starting/Ending at Bolt Holes, How Many?			
Crack Visible by External Inspection of Elevator			
Crack Visible by Internal Inspection of Elevator			
Crack Visible Only by Dye-Penetrant Inspection			
Other Defect (please describe here)			

Part 4: Contact Information

Date of Inspection: _____

Inspector's Name: _____

Best Contact Method: [] Email to _____

[] Telephone _____

Please provide a copy of this report to the aircraft owner for entry of the results on the special survey page at www.commander.org.

Reference Information

Model 112 IPC Figure 2-35 Callout 46 Spar and Detail B Callout 56 Fitting
 Model 114 IPC Figure 2-35 Callout 46 Spar and Detail A Callout 56 Fitting