ELEVATOR SYSTEM - INSPECTION/CHECK

1. General

A. This section has the inspections and checks necessary to keep the elevator system in a serviceable condition.

TASK 27-30-00-720

2. Elevator System Functional Check

A. General

(1) This task gives the procedures to do a functional check of the elevator system.

B. Special Tools

(1) Inclinometer

(2) Cable Tensiometer

(3) Elevator Neutral Rigging Tool

(4) Elevator Rigging Protractor

(5) Spring Scale (0 to 20 Pounds)

(6) External Electrical Power Unit

C. Access

(1) Remove the applicable floor panels to get access to the elevator control system. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

(2) Remove vertical stabilizer panel 320A to get access to the elevator control system. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

(3) If installed, remove the liquid barrier. Refer to Chapter 53, Plates/Skins - Maintenance Practices.

D. Do a Functional Check of the Elevator System.

(1) Do a check of the cable movement for binding and full travel.

(2) Examine the elevator skins for cracks and loose rivets.

(3) Examine the elevator hinges, hinge bolts, hinge bearings, torque tube, horn, attach fittings, and bonding jumper for corrosion, cracks, signs of damage, wear, unserviceable fasteners, security, and correct safeftying.

(4) Examine the balance weights and the support structure for corrosion, looseness, cracks, and damage.

(5) Examine the outboard tips for cracks in the rib flange.

(6) Examine the elevator bell cranks, bearings, push rods, stop bolts, and brackets, for corrosion, cracks, signs of damage, failed fasteners, security of installation, correct installation of cable attaching hardware, and correct safetying.

(7) Examine the turnbuckles for correct thread exposure.

(a) Make sure that the turnbuckle locking clips are installed correctly. Refer to Chapter 20, Safetying - Maintenance Practices.

(8) Examine the swage fittings reference marks for an indication of cable slippage inside of the fitting.

(a) Examine the fittings for corrosion, distortion, cracks, and broken wires at the fittings.

(9) Examine the pulleys, attach brackets, and guard pins for condition, wear, corrosion, and security.

(a) You must turn the pulleys to make sure there freedom of movement and to make sure there is even wear of the pulleys.

(b) If discrepancies are found with the brackets, examine the structure where the brackets are attached for hidden damage.

(10) Examine the control column for corrosion, signs of damage, unserviceable fasteners, and security of installation.

(11) Examine the column lock for correct operation.

(12) Examine all welds in the column tube and the torque tube for corrosion and cracks.

(13) Examine both torque tube support arms for corrosion, condition, and security of the attach bearings.

(14) Examine the support arm attach structure for condition, cracks, and correct safety of the attach bolts.

(15) Examine the cable guards for corrosion, condition, and security on both column quadrants.

(16) Examine for sufficient clearance of all components and structure at the full aft and full forward positions.

E. Examine the Cable Travel and Tensions.

(1) Set the control wheels to put the elevators in the neutral position.

(2) Make sure that the left elevator is at the streamlined position

(3) Attach an inclinometer on the left elevator's trailing edge and set it to zero degrees.

CAUTION: Do not attempt to align the horn (balance weight portion) on the elevator to the stabilizer.

CAUTION: Make sure that the support stand is under the tail to prevent the tail cone from dropping while working in the tail cone.

(4) Examine the cable tensions and adjust if necessary.

(a) For the elevator control cables, refer to Elevator - Maintenance Practices.

(b) For the elevator trim cables, refer to Elevator Trim System - Maintenance Practices.

(c) For airplanes equipped with 400B and 400B IFCS autopilot type AF-550A and IF-550A, refer to Elevator - Adjustment/Test.

(5) Operate the system through its full range of travel.

(a) Make sure that all of the components that move do not hit, touch, or catch on structural components or other system components.

(6) Move the elevator to contact the down stop bolt.

(a) Make sure that the inclinometer shows 20 +2 or -2 degrees.

(7) Move the elevator to contact the up stop bolt.

(8) With the rigging protractor, make sure that the elevator UP Stop is set as follows:

Table 601. Model 208 UP Stop Limits

Model	TKS Anti-ice System	Elevator Up Stop Setting	Plus Tolerance	Minus Tolerance
208	Not Installed	25°	+2°	-2°
	Installed	18°	+1°	-1°

NOTE: If necessary, adjust the UP Stop bolt.

Table 602. Model 208B UP Stop Limits

Model	TKS Anti-ice System	Elevator Up Stop Setting	Plus Tolerance	Minus Tolerance
Airplanes 208B0001 thru 208B2196 Airplanes 208B2198 thru 208B4999	Without TKS Anti-ice Without Cargo Pod	25°	+2°	-2°
	Without TKS Anti-ice With Cargo Pod			
	With TKS Anti-ice With Cargo Pod			
	With TKS Anti-ice With Fairing	22°	+1°	-0°
Airplane 208B2197 Airplanes 208B5000 and On	Without TKS Anti-ice Without Cargo Pod	24°	+0°	-1°
	Without TKS Anti-ice With Cargo Pod			
	With TKS Anti-ice With Cargo Pod			

	With TKS Anti-ice With Fairing	22°	+1°	-0°

NOTE: If necessary, adjust the UP Stop bolt.

(9) Remove the inclinometer from the left elevator trailing edge.

(10) Do an electric elevator trim clutch torque system check, (Refer to Electric Elevator Trim - Adjustment/Test).

F. Restore Access

(1) If installed, install the liquid barrier. Refer to Chapter 53, Plates/Skins - Maintenance Practices.

(2) Install vertical stabilizer panel 320A. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

(3) Install the applicable floor panels that were removed to get access to the elevator control system. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

END OF TASK