

## 1. CRITICAL Tasks

145.A.48 (c) / AMC 145.A.48 (c)

What does that mean? "CRITICAL tasks" are tasks that involve:

## 1. "Critical maintenance Tasks" on critical systems as described in §3.1

Task that involves **Disturbance/Disconnection** of a **system or Assembly/Reassembly** of any **parts** (or their controls) on AC, Engine that, if an error occurred during its performance, could **directly** endanger the **safety** or lead to an **unsafe condition**

## 2. "Identical maintenance tasks" on similar systems as described in §3.2

Task that involves **Removal/Installation/Disconnection** of **parts** fitted on **similar systems**; whose failure could have **impact on safety**

**Note that Inspection / Servicing without part removal/disconnection is NOT a CRITICAL task.**

## 3. Consideration should also be given to: (Evaluation of work to be performed by the Team Leader/Aircraft manager/Certifying staff)

- The criticality and the complexity of the task on systems and consequences of failure,
- The vulnerability of the task to human error due to un-normal operations,
- The presence or absence of other checks (e.g. Operational or functional checks),
- Previous experience of maintenance errors, depending on the consequences of the failure.

What to do in case of "CRITICAL tasks"?

CRITICAL TASKS

1. The TASK must be clearly identified as "CRITICAL" in Quantum and in Task card, → **STAMP**
2. One (or a combination) of the following actions (error capturing methods) are required:
  - An "independent inspection" (in case of "critical maintenance task")
  - Different staff working (in case of "Identical maintenance tasks")
  - or additional inspection by a different Staff if Same Staff working on similar system
  - Reinspection (in case of unforeseen circumstances -AOG- where only 1 staff is available)
3. An additional check (Visual, Leak, Operational, Functional, Run) is performed as required

## 2. Responsibility

1. **Technical Services** → identify "CRITICAL tasks" on cards at the planning stage. (CS if AOG)
2. **Team leader / CS(line)** → identify "CRITICAL tasks" for additional works.
3. **Supervisor / CSM(line)** → review tasks during Maintenance event to ensure that all "CRITICAL tasks" are appropriately identified, including specific customer requirements.
4. **Team leader / CS(line)** → define appropriate required actions (error capturing methods) for all "CRITICAL tasks" to reduce the risks of error, during Maintenance.
5. **Staff** must inform **Team leader** in case of any disturbance of a system/part during task execution (may lead to unsafe conditions)
6. **Technical Services** → verify that identified "Error capturing methods" have been correctly recorded in Task card & Quantum.

## 3. Required Action – Error capturing Method

An **error capturing method** is implemented after the performance of any **CRITICAL task**; Should be adequate:

Could be a combination of several actions (independent inspection, operational/functional check, different staff, inspection, reinspection).

## 3.1 Critical maintenance Tasks / (FAA RII)

- In case of work on "critical systems" - when Maintenance task that may affect the following:

- Control of the aircraft flight path and attitude - Installation / Rigging / Adjustment of Flight controls
- Aircraft stability control systems (autopilot, fuel transfer)
- Propulsive force of the aircraft, including installation of engines
- Overhaul, calibration or rigging of engines, transmissions, Gearboxes

"Table 1" in RED describes tasks per ATA concerned

- Independent inspection is required by an independent Staff

- Who is the independent Staff? - B1 or B2 staff (or S staff in case of specific activities)

The "independent Staff" is **not involved** in the task (before the independent inspection) and is **not issuing** the Task Release. He has a certifying Staff privilege, **not required to hold Rating on AC type**.

- How to perform the "Independent Inspection"? (It is a 2<sup>de</sup> insp after a 1<sup>st</sup> Task insp)

The staff performing the **independent inspection** should consider the following points **independently** (if appropriate):

- **Parts** that have been disconnected / disturbed should be **visually inspected for correct assembly and locking**,
- The **whole system** should be inspected for **full and free movement over the complete range**,
- The operation of the **whole control system** should be observed to ensure that the **controls are operating in the correct sense**,
- **Cables** should be **tensioned correctly, with adequate clearance**,
- **Software** should be checked in terms of **version, compatibility** with aircraft configuration

"Table 1" in RED is a guide for the independent inspection to be performed

If the control system is duplicated to provide redundancy, each should be checked separately.

- Sequence of "Independent inspection"?

1. Task is **Performed / Fully completed** by an Authorised staff (box "3.2"). attest the procedure correctly performed i.a.w data.
2. Task **Inspection** (1<sup>st</sup> insp) by Team Leader or **AC-Rated staff** -with AC Type (box "3.3"). attest inspection of work, and work satisfactory completed. (self-inspection possible)
3. **Independent Inspection** (2<sup>de</sup> insp) by independent staff (AC Type not requested). attest no deficiencies have been found on system. This inspection must be **described** (box "4") because this inspection generally differs from task inspection.
4. Task is **Released** by **AC-Rated staff** (box "6"). attest work has been fully completed & properly signed by appropriate staff i.a.w data.

- In unforeseen circumstances where only 1 staff is available, a **Reinspection** is performed by the **Same Staff**. (add step in box 3.1/3.2)

## 3.2 Identical maintenance Tasks on similar system

If identical components are **removed/installed/disconnected** on similar systems,

- **Different staff** (not necessarily AC-Rated staff) is working on identical tasks involving removal/installation. **or**
- **Same staff** is working on identical task, + **additional inspection** performed by a **different Staff**.
- In **unforeseen circumstances** where only 1 staff is available, a **Reinspection** is performed by the **Same Staff**. (box 3.1/3.2)

Tasks that must be assessed for Impact regarding risk of errors [RED] tasks are "critical maintenance tasks" and required "independent inspection(s)"		Following actions (Error capturing method) are recommended For task involved Disturbance/Disconnection of a system / Removal/Installation/Disconnection (R/I/D) of parts • [RED] = "independent inspection(s)"	
"Major" change (as described in data) It includes Major modification Or Repair outside the SRM-RVSM area		• Visual inspection for correct assembly, locking, routing & connection.	+ Additional Check Depending of the Modification/repair
Task related to RVSM critical skin area (repair/paint)		• Visual inspection of area for absence of skin waviness, scratches, damage.	+ Additional Check Depending of the area affected and required
FTS/CDCCL tasks Any task related to CDCCL Identified by the Operator/Manuf. Task is critical if Removal/Installation/Disconnection of parts		• Visual inspection for correct assembly, routing & connection. or	OR Additional Inspection Performed visual inspection for good condition (Cleanliness, debris, connector corroded, wiring)
ETOPS/EROPS/EDTO tasks Any task related to EROPS Identified by Operator/Manuf.		• Visual inspection for correct assembly, locking, routing & connection. or	OR Additional Check or Inspection
Additional tasks identified by the Operator/CAMO. "Critical" need to be evaluated regarding risk of errors		• Independent inspection or Depending of the system/Part affected.	OR Additional Check or Inspection
Outflow Valves Installation/Replacement / Disconnection	ATA 21	• Visual inspection of xx for correct assembly & locking	+ Leak/Pressurised Check
Autopilot system / Flight director / Cable Installation/Replacement / Disconnection	ATA 22	• Visual inspection of xx for correct assembly, locking, routing & connection • Cables are correctly tensioned (if appropriate)	+ Ops Check
Electrical power components ADGs / Installation/Replacement IDGs/starters/DC generators / Installation/Replacement	ATA 24	ADG • Visual inspection of xx for correct assembly & locking	Different STAFF OR add. Inspection on similar system involving R/I
Flight crew Seat Installation/Replacement / Major Mods&Repairs	ATA 25		Visual inspection for correct assembly and locking
Fire Extinguisher/cartridge/Detection System on Eng./APU Installation/Replacement (Not required for portable equipment)	ATA 26	• Visual inspection of xx for correct assembly, locking & connection	+ Different STAFF OR add. Inspection on similar system involving R/I
Flight Controls system - Primary or Secondary (Aileron, Elevator, Rudder, Tab, Flap, Slat, Stabilizer, Spoiler) Installation / Rigging / Adjustment / Disconnection • Control system (Cables, Pulleys, Rods) • Flight Control actuator / servo • FBW system component & interface	ATA 27	• Visual inspection of xx for correct assembly & locking (and clearances) • Cables are correctly tensioned (if appropriate) • System is observed for full and free movement over the complete range • All Controls are operating in the correct direction	+ Different STAFF OR add. Inspection on similar system involving R/I + Ops Check
Fuel tanks Installation/Replacement / Disconnection / Cleaning	ATA 28	• Visual inspection of xx for correct assembly, locking & routing • Inside Area is clean and free of foreign bodies	Inspection + leak check in case of borescope
Fuel transfer Filters /Fuel Boost Pumps Installation/Replacement / Disconnection	ATA 28		Visual Inspection for correct assembly, locking & connection + Leak Check
Hydraulic Filters Installation/Replacement	ATA 29		Visual Inspection for correct assembly, locking & connection + Leak Check
Ice Protection – Telescopic duct (F7X ONLY) Installation/Replacement	ATA 30	• Visual inspection of xx for correct assembly, locking & connection	+ Different STAFF OR add. Inspection on similar system involving R/I
Landing Gear Assembly of Actuators & Critical Attachments affecting extension, retraction, or locking of the landing gear Installation/Replacement / Adjustment / Disconnection	ATA 32	• Visual inspection of xx for correct assembly, locking, routing & connection	+ Different STAFF OR add. Inspection on similar system involving R/I
Pitot Static/Tubes/ADC /AOA Installation/Replacement / Adjustment / Disconnection (Not required for equipment plug-and-play)	ATA 34	• Visual inspection of xx for correct assembly & connection	+ Functional / Ops Check
Critical Software Installation / Upgrade	ATA 45		Check Software in terms of version, compatibility with aircraft configuration
Primary Structure Major Mods & Repairs Wing/Pylon - Installation/Replacement	ATA 52 to 57	• Visual inspection of xx for correct assembly, locking, routing & connection	
Flight Controls - Primary or Secondary (Aileron, Elevator, Rudder, Tab, Flap, Slat, Stabilizer, Spoiler) Installation / Rigging / Adjustment / Disconnection • Flight Control surfaces	ATA 55/57	• Visual inspection of xx for correct assembly & locking (and clearances) • Cables are correctly tensioned (if appropriate) • System is observed for full and free movement over the complete range • All Controls are operating in the correct direction	+ Different STAFF OR add. Inspection on similar system involving R/I + Ops Check
Engine mount bolt/attachment/Cable/Rod Engine/Thrust reverser/Propeller Fan blade/Disk/Module/Stator vane/Bleed Valve Installation/Replacement / Rigging	ATA 61/71/72/78	• Visual inspection of xx for correct assembly & locking and clearances • Cables are tensioned correctly (if appropriate)	+ Check / Run
Gearbox/AGB/FCU/HMU Installation/Replacement / Disconnection / Rigging		• Visual inspection of xx for correct assembly & locking	
R/I/D - Replacement on similar systems whose failure could have an impact on safety		• Different STAFF on identical task OR • Same Staff + additional inspection by a different staff (add step in box 3.1/3.2) • Reinspection (add in box 3.1/3.2) in unforeseen circumstances – AOG – 1 staff available	+Functional or Leak check If appropriate or required by MM
Swap - R/I/D - Replacement on similar systems [simple tasks] Chip detectors / Igniter plug / IDG -Fuel&Oil Filters / Wheels/Brakes / Plug-and-play instrument / drain Valves / fuel Gauges Replenishing		• Different STAFF on identical task OR • Same Staff + additional inspection by a different staff (box 3.3) • Reinspection (add in box 3.1/3.2) in unforeseen circumstances – AOG – 1 staff available • Inspection of cap assembly and locking	or Leak check

**Independent inspection** should be described in Task card (box "4") - Performed by an independent Staff (B1/B2/S) BEFORE task release.

- He is **not** required to hold Rating on Aircraft type (internal authorisation)
- He should **not** participate to this Task. (He could perform test/check after the independent inspection OR perform other tasks on WP)
- He should **not** release this Task. All independent inspections could be performed by the same independent Staff
- He shall describe independent inspection performed, as described in the table in box "4"

**Inspection** is performed by a different Staff - He holds Rating on AC type or Team Leader

**Reinspection** is performed by the Same AC-Rated Staff - He holds Privilege on AC type

**Check** (Leak, Functional, Operational) could be performed/recorded by the Same Staff

1 additional step is described in card (box "3")

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Action and result are described in card (box "3")