

## Eyes on the Wingtip - Eliminating Complacency and “No-Fault-Found” Bias in Line Maintenance Inspections

### Why this matters

Most days, line inspections are uneventful. That’s the trap. After hundreds of clean walkarounds, the brain stops expecting to find anything. Vigilance drops, shortcuts creep in, and “no-fault-found” becomes the default. Then comes the outlier—the 1-in-a-thousand event that really matters. If we miss it, the organization pays in safety exposure, reputation, money, and time.

**Real scenario:** Following a crosswind landing, a Boeing 747’s No.1 nacelle made ground contact (“kissed the ground”). The engineer reported a “full walkaround,” but never physically reached the wingtip. Fuel, catering, baggage—all loaded. Only when the captain performed a separate walkaround was the damage seen. The aircraft was not airworthy. The delay and downstream disruption were enormous—and avoidable.

**Important Note** - This document is a hard line against complacency. It sets non-negotiables for how we inspect, explains why the brain will try to trick us, and shows how to design the job so doing it right is easier than doing it fast.

### The psychological traps (know them, beat them)

- **Complacency / habituation:** Repeated “all clears” reduce vigilance.
- **Prevalence effect:** When defects are rare, people get worse at spotting them.
- **Confirmation bias:** You see what you expect (a clean aircraft).
- **Satisfaction of search:** You find one minor issue, feel “done,” and stop looking.
- **Time pressure / production bias:** Subconscious push to protect the schedule.
- **Interruption amnesia:** After a radio call or question, you restart in the wrong place.

**Countermeasure mindset:** Treat every aircraft as if it just came off a rough sector. You are there to **disprove** airworthiness, not assume it.

### Five non-negotiables (every inspection, every time)

1. **Physically reach the wingtip on both sides.**  
You do not sign the task until your boots have been to each tip. No exceptions.
2. **Point–call–touch.**  
At each critical feature (nacelle lipskins, gear struts, flaptrack fairings, leading/trailing edges, winglets/tips), point at the area, call what you’re checking (“LH No.1 nacelle lipskin—scuffs, dents, scrapes”), and touch within safe reach. This simple ritual spikes attention and cuts misses.

3. **Fixed route, fixed order.**

One clockwise or anti-clockwise path—never improvise. If interrupted, you restart from the last verified landmark (see the route script below).

4. **Event-driven escalation.**

Any trigger (crosswind/abnormal landing, runway excursion report, bird strike report, hard braking, turbulence logbook entry, FDR exceedance reported, or captain concern) means you upgrade from standard to Event-Driven Special Inspection (EDSI) with added checks on the affected zones.

5. **Never sign for what you didn't see.**

If ramp constraints, de-icing, catering trucks, or GSE block a view, stop the clock and get access. "I couldn't get round there" is not an acceptable reason after the fact.

### **The route script (make it muscle memory)**

Choose one standard order and stick to it forever. Example (clockwise):

1. Nose/radome → pitots/static → windshield/frames
2. LH fuselage/doors → LH nose gear (forks, tyres, torque link, lines)
3. LH No.1 nacelle (inlet lip, cowl, pylon, reverser, exhaust)
4. LH wing root → leading edge → flaps/slats/track fairings → LH wingtip (must reach)
5. LH main gear (tyres, brake packs, hydraulic lines, proximity sensors)
6. Empennage: horizontal/vertical stabilizers, tips, APU area, drains
7. RH main gear → RH wing root/leading edge → flaps/slats/track fairings → RH wingtip (must reach)
8. RH nacelles (reversers, lipskin, exhausts)
9. RH fuselage/doors → RH nose gear → back to nose

If interrupted: announce "Back three landmarks" and walk back three items in the script before resuming.

### **Event-Driven Special Inspection (EDSI) triggers**

Upgrade to EDSI when any of the following apply:

- Any crew concern or cabin report of unusual noise, smell, vibration.
- Aircraft not known to you – (Very Important you do not know the history)
- What else would you see as a driver for this additional inspection?

## **EDSI add-ons (examples):**

- **Wingtip & winglet:** inspect outboard leading/trailing edges, navigation/strobe housings, paint transfers, scrapes.
- **Nacelle lipskin & cowl:** look for ground rash, composite delam, denting, fastener fretting.
- **Gear & brakes:** tyre flats/cuts, heat checks, hydraulic leaks, bent lines.
- **Control surfaces:** hinge lines, fairings, actuator areas for impact marks.
- **Fuselage lower skin & antennas:** scuffs, dents, missing fasteners, antenna abrasion.

## **Make “doing it right” the easy path**

### **“No-multitask zone.”**

During the walkaround: radio to low, no admin updates, no chit-chat. If someone engages you, pause, step away, complete the interaction, then return to “Back three landmarks.”

### **Distraction recovery protocol.**

Say it out loud: “Interrupted at LH flaptrack fairing; resuming at LH flaptrack fairing minus one.” Verbalizing resets focus.

### **Peer assist at triggers.**

For EDSI or high-risk conditions, use a second pair of eyes—brief, divide zones, and cross-confirm the hotspots (nacelles, tips, gear).

### **Point-call posters on stands.**

Visual prompts at each gate/ramp position with the route order and hotspot call-outs.

## **The “1-in-1000” problem (the ratio, and why vigilance pays)**

Imagine a serious, airworthiness-affecting defect appears on 1 in 1,000 turnarounds (0.1%). Missing it costs the operation, say, €250,000 (diversion, hoteling, knock-on delays, recovery, reputational damage).

## **What good looks like (observable behaviors)**

- Inspector walks to both wingtips—seen by anyone on the ramp.
- Finger points, eyes track, mouth calls the hardware being checked.
- When blocked, inspector stops, requests access, and resumes only when clear.
- On interruption, inspector audibly states the last completed landmark and backs up.
- After crosswind/hard/abnormal landing, inspector announces EDSI to the team.
- Findings are described precisely (location, size, material, likely cause) with photos where applicable.

## Manager and supervisor duties (you make this stick)

1. **Publish the route.** One method, one order. Train and evaluate to it.
2. **Trigger discipline.** Formalize EDSI criteria in the MOE/Line Procedures; brief daily.
3. **Seeded-defect drills.** Periodically plant controlled “defects” (stickers/paint transfers in allowed locations) to test vigilance and coach, not punish.
4. **Protect the pause.** Back inspectors when they stop for access; remove schedule pressure from safety decisions.
5. **Recognize catches.** Publicly credit teams for preventing a costly miss.

## Quick reference: the “Before I sign” pledge

- I reached both wingtips and the tail.
- I performed point–call–touch on all hotspots.
- I applied EDSI when triggers existed.
- I recovered correctly from any interruption.
- I refused to sign for what I could not see.

Signatures should reflect eyes-on-metal reality, not hope, habit, or hurry.

## The tone we set

This is not about blame; it’s about professional pride. The captain’s walkaround is a last safety net—not our plan. Our job is to arrive at the wingtip, every time, and to treat a quiet day as the moment we’re most at risk of missing the noisy defect.

## Strong line:

- If there was a trigger and you didn’t escalate, the inspection isn’t complete.
- If you were blocked and didn’t stop the clock, the inspection isn’t complete.
- Make these standards visible on the ramp, reinforce them in briefs, and support them in the schedule.

**When the rare event happens—and it will be ready, not lucky.**