

FIRST FLIGHT AFTER MAINTENANCE

What I Will Do Differently Next Time

A One-Page Operational Guide for Part 91 Pilots

1. START WITH THE RIGHT ASSUMPTION

Sub-Question: What state is the airplane in?

Answer:

- The aircraft is in an **unknown configuration state**
- Something may be **slightly wrong**, not obviously wrong
- Ground checks will **not** reveal everything
- My **expectation** is my biggest vulnerability

Operational takeaway:

Treat the airplane as unverified until proven otherwise.

2. PREFLIGHT: WHAT AM I TRYING TO DETECT?

Sub-Question: What should I look for that I normally ignore?

Answer:

- Full, deliberate **control movement**
- Visual confirmation of **correct direction**
- Feel for **asymmetry or resistance**
- Automation power-up behavior that seems “different”
- Engine data that doesn’t match historical baseline
- Any new noise, vibration, or cockpit behavior

Operational takeaway:

You’re verifying **behavior**, not completing a checklist.

3. TAXI + RUN-UP: WHAT SHOULD I TEST?

Sub-Question: What does active verification look like here?

Answer:

- Confirm **trim** direction and magnitude
- Confirm **autopilot servos** are quiet and stable
- Confirm **no unexpected annunciations**
- Confirm **engine indications** are consistent with history
- Confirm **no new control feel differences**

Operational takeaway:

This is your last chance to catch something before aerodynamic load hides it.

4. TAKEOFF + INITIAL CLIMB: HOW WILL I STRUCTURE IT?

Sub-Question: How do I keep the airplane in a safe evaluation envelope?

Answer:

- Stay **close** to the airport
- Keep configuration **simple**
- Delay **automation**
- Build **altitude margin**
- Maintain **cue sensitivity**

Operational takeaway:

The first minutes of flight are the highest-risk period — keep them simple.

5. IN-FLIGHT EVALUATION: WHAT WILL I TEST?

Sub-Question: How do I expand the envelope safely?

Answer:

- Change **one variable at a time**
- Test **trim** deliberately
- Test **autopilot** only when stable and with altitude

- Observe **mode behavior** closely
- Watch for **inconsistency** — the hallmark of hybrid system issues

Operational takeaway:

You must create the conditions that reveal configuration errors — safely.

6. CUE INTERPRETATION: HOW WILL I HANDLE “SLIGHTLY OFF”?

Sub-Question: *What will I do when something feels different?*

Answer:

- Treat small anomalies as **valid cues**
- Do **not** normalize them
- Do **not** rationalize them
- Ask: “*What changed?*”
- Ask: “*Does this make sense?*”

Operational takeaway:

If you notice it, it matters.

7. DECISION POINT: WHEN WILL I STOP?

Sub-Question: *What is my threshold for rejecting the aircraft?*

Answer:

- Any behavior I cannot explain
- Any automation behavior that doesn’t match expectation
- Any trim or control response that feels abnormal
- Any inconsistency in system behavior
- Any cue that persists or repeats
- Any situation where I find myself “hoping it goes away”

Operational takeaway:

If it’s not clearly right — stop.

8. POST-FLIGHT: HOW WILL I CLOSE THE LOOP?

Sub-Question: What will I report, and how?

Answer:

- Report **every anomaly**, even small ones
- Describe **behavior**, not theories
- Provide **specific conditions** where the cue appeared
- Ask maintenance to verify **configuration**, not just “look it over”
- Treat the airplane as **not airworthy** until the behavior is explained

Operational takeaway:

Maintenance can only fix what you tell them — and subtle cues are often the only evidence.

THE ONE-PAGE SUMMARY (for printing)

What I Will Do Differently on My Next First Flight After Maintenance

1. **Assume unknown configuration state**
 2. **Actively verify behavior on the ground**
 3. **Structure the first minutes of flight**
 4. **Expand the envelope deliberately**
 5. **Treat small cues as meaningful**
 6. **Define and honor a stop threshold**
 7. **Report everything with specifics**
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