

The Dirty Dozen Human Factors

Knowledge card — earned on successful completion of CertiFlyers Course 2

After a distraction, go back 3 steps — never resume from memory.

Recognize the twelve Dirty Dozen factors in yourself and your crew, build individual safety nets around every task, and assert airworthiness standards up to grounding the aircraft.

THE THREE RULES

1 Write it down, check it physically

Only about 30% of verbal communication is received and understood. At shift change, state the most critical airworthiness information first and repeat it at the end, then use a physical checklist — both mental pictures must match. Perform the task exactly as documented, and never sign for a step you did not perform or see done.

2 Interrupted? Mark it, then go back 3 steps

Distraction is a common cause of skipped steps; work can easily resume at the wrong point. If you are called away, disconnect from the task and physically mark the incomplete work. When you return, go back exactly 3 steps in the manual checklist before restarting. Fatigued but cleared to work? Have a teammate independently double-check what you finished.

3 No resources, no shortcut — ground it

Verify every part, tool and current document is present before you start. Missing something? Arrange pooling or loaning from an approved source — never improvise tools or bypass approved materials. Raise unachievable deadlines with your supervisor immediately; say no to anything that violates the manual. If a required resource is missing or a repair would have to be improvised, formally ground the aircraft.

NEVER

- ✗ Sign for a step you did not physically perform or see done
- ✗ Execute complex critical tasks at the bottom of your circadian rhythm
- ✗ Improvise a tool or substitute an unapproved part because the right one is missing
- ✗ Close a panel from memory — verify with a flashlight and the checklist

ALWAYS

- ✓ Work from the current manual, physically present — don't guess, know
- ✓ Brief the job scope, responsibilities and tooling before breaking safety wire
- ✓ Check for spatial or system conflicts with existing repairs before closing panels
- ✓ Request a formal change to a flawed procedure — never adopt a local norm

NUMBERS TO REMEMBER

Over 80%

of aviation accidents are attributable to human error — Dirty Dozen preconditions

30%

of verbal communication is received and understood — write the handover down

12

Dirty Dozen factors — each a precondition for maintenance error

3 steps

back in the manual checklist before restarting after any distraction

12-hour

shift extended under pressure — junior tech stayed silent, unairworthy aircraft released

1993

the year Gordon Dupont of Transport Canada developed the Dirty Dozen

BEFORE THE TASK — CHECK

- | | |
|---|--|
| ☐ Current manual or approved data for this task in hand | ☐ All parts, approved tools and documentation physically present |
| ☐ Fatigue and stress self-check done — mind fully on the job | ☐ Fatigued but cleared to work? Secondary inspector arranged |
| ☐ Team briefed on job scope, responsibilities and tooling | ☐ Handover taken with a physical checklist — critical airworthiness items first |

M1 Communication, Complacency, and Knowledge **M2 Distraction, Teamwork, and Fatigue**

M3 Resources, Pressure, and Assertiveness **M4 Stress, Awareness, and Norms**

Regulatory basis: FAA AC 120-72A, Maintenance Human Factors Training · FAA-H-8083-30B, Aviation Maintenance Technician Handbook — General, Chapter 14, Human Factors · EASA Part-145, point 145.A.30(e)

CertiFlyers Hangar Card series · Card No. 02 of the course catalogue · Print on Letter or A4, display in the hangar · Summarises Course 2; it does not replace the approved technical data or the maintenance manual.