

# GO BACK THREE STEPS

Some suggestions on how to deal with interruption.

In today's era of electronic communication, our daily work routine is peppered with interruptions.

Distraction has always been one of the 'Dirty Dozen' most common conditions contributing to accidents or incidents. What's different in today's world of mobile phones and instant messaging, is that distraction is so pervasive.

Closely related to distraction is interruption. While distraction is usually something unplanned, like a loud noise, interruption is intentional.

The book *Your Brain at Work* says an American study found that, on average, a typical worker is interrupted by an outside source every 11 minutes.

The study also found that workers 'self-interrupt' – checking emails for instance – and that brought the time between interruptions down to about three minutes.

If the interruption is off-task, the research indicated it can take, on average, 23 minutes to refocus.

Aircraft Engineering in Feilding is very aware of the potentially catastrophic impact of someone being interrupted mid-task.

During monthly training sessions, details of any relevant maintenance-related incidents or accidents from overseas are studied by all 12 engineers, and discussion encouraged on ways the company can avoid a similar occurrence.

Engineering Manager Mat Bailey says the occurrences they examine are often due to an engineer being interrupted at some point; then missing a step or not finishing a task.

"So we have procedures where, if an engineer does have to pause a task, they always record where they got to. When using an inspection checklist, marking off and initialling each step as it's completed ensures continuity. That's really important, particularly with something like a service bulletin that might have 100 or more steps to work through. A supervisor will always oversee the whole job and monitor each step as complete. So if there is an interruption, everyone knows at what point the job is at.

"Sometimes we may go forward a few steps because that makes the job flow better, but proper use of a checklist means we can easily know what still needs to be done."

A SKYbrary article from the Flight Safety Foundation maintains that a task being interrupted because of a distraction is the number one cause of forgetting things.

Also, "humans tend to think ahead", SKYbrary says. "Thus, when returning to a task following a distraction, we have a tendency to think we are *further ahead than we actually are.*" (Vector emphasis)

While that's an everyday annoyance, in safety-critical activities like piloting or aircraft engineering, it can also lead to disaster.

Flight crews not completing a checklist has been found to be at least partially responsible for many deadly aviation accidents.

In many cases, follow-up studies have indicated interruptions contributed to those failures to finish a checklist.

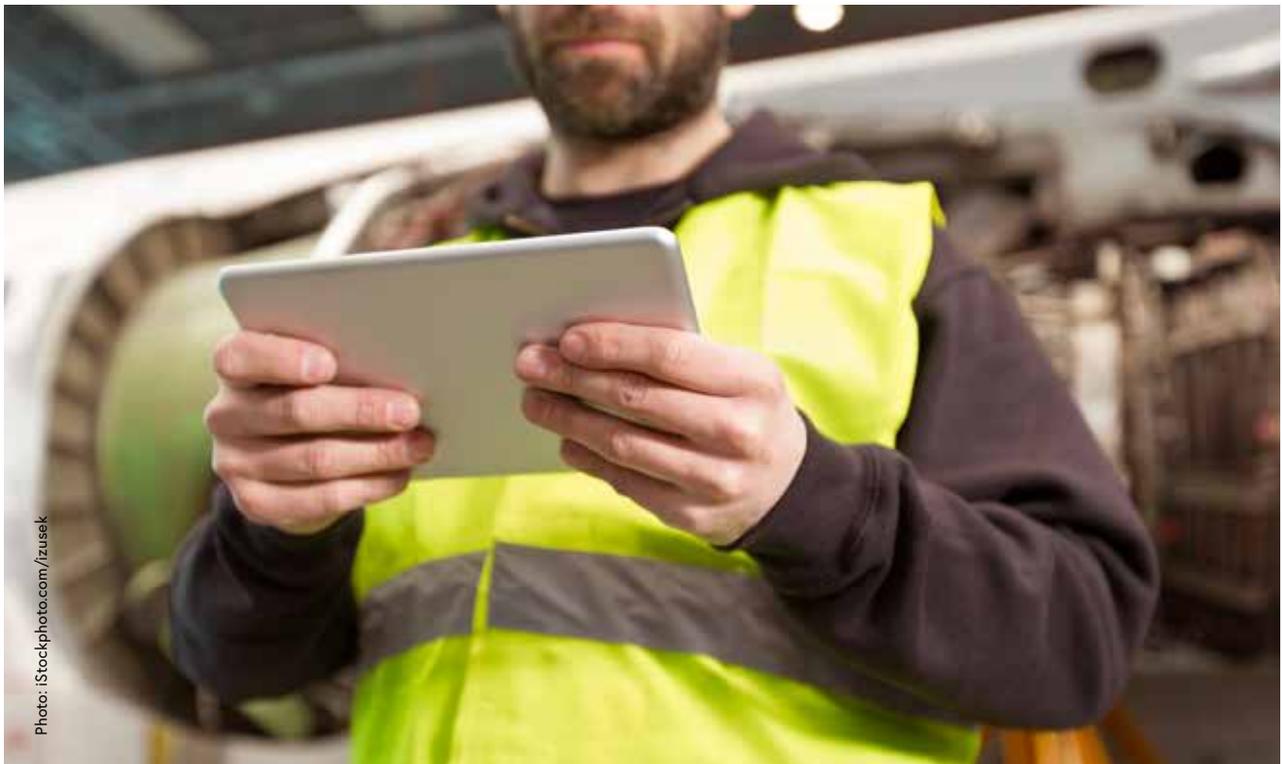
In 1987–88, the National Transportation Safety Board (NTSB) investigated the crash of a Northwest Airlines McDonnell Douglas DC-9-82 shortly after take-off from a Detroit airport.

The NTSB found that constant interruptions – and a change in runway assignment during preparation for take-off – ultimately led to the crash. It found the crew failed to recognise the flaps had not been set to take-off position, and didn't complete the checklist alerting them to the flap position.

Tragically, the warning circuit alerting them to the flap problem also failed. All but one of the 155 people on board died.<sup>1</sup>

Only 12 months later, an almost identical accident occurred when the crew of a Boeing 727 crashed due to an interrupted checklist process.

<sup>1</sup> NTSB/AAR-88/05



// Electronic devices can be a valuable aid in tracking maintenance and for referring to manuals – but are email alerts turned off to prevent distraction?

### Some ideas

It's obviously best to finish a task before responding to an interruption. If that's not possible, clearly mark the project to remind you where to take it up again.

Or go back at least three steps on your checklist, so the work can be retraced. If necessary, have someone else double-check the work using their checklist.

It should also be part of any company's safety management system to establish procedures minimising interruption of workers carrying out safety-critical tasks – for instance banning cellphones in the hangar.

The company might also designate 'discussion times' – workers being left alone otherwise. Jason Womack, a productivity and performance specialist, recommends workers write down thoughts or questions and schedule a couple of times a day with a co-worker to discuss them.

Avcraft Engineering incorporate all these things to reduce the risk posed by interruptions.

But Mat Bailey says ensuring safety around interruption is not a matter of just having senior engineers constantly supervising the others to make sure they comply with workplace practice.

"We cannot be hovering over the engineers all the time. They have to believe, themselves, in those principles and embed them into their work practices.

"Ours is a culture of minimal interruptions, and we are all mindful of the implications of interrupting somebody during a task.

"Visits to the hangar floor by the public are also limited, partially because of their potential to interrupt engineers during safety-critical tasks.

"So if someone really has to talk to a second person, they will approach them with, 'do you have time to talk about this now?' We expect the second engineer to assess, themselves, whether they are in a critical stage of their job and cannot talk right at that time, or whether they can respond straight away and then easily and safely pick up the task after."

There's a final benefit to keeping interruptions to a minimum. In 2005, Basex Technology found that interruptions and the resulting loss of productivity was costing United States businesses \$US588 billion a year.

The economic benefit of allowing workers to focus on their job isn't lost on Avcraft Engineering.

"Minimal interruption means our work is much more efficient, and that translates into economic efficiency," says Mat. 