Safety first
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Tidy cockpit for safe flight

One would not normally think of everyday life objects, apparently as inoffensive as a pen or a cup of coffee, as being a real threat to the safe operation of a commercial flight. Yet, leaving them unsecured or forgotten in a cockpit could rapidly turn them into real trouble makers...

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TIDY COCKPIT FOR SAFE FLIGHT

The "Clean cockpit" philosophy

At the beginning of 2014, the crew of a cruising A330 and their passengers unintentionally lived a new flying experience at negative g by night... The culprit? A digital camera left between the Captain's side stick and the seat arm rest that led to inadvertent nose down inputs as the PF seat was adjusted forward.

LOOSE ITEMS IN THE COCKPIT: UNINVITED GUESTS!

Common sense generally instructs anyone in a cockpit to maintain an orderly environment.

However, over the past decade, serious incidents involving unsecured or forgotten items have continued to happen. For the most part, being complacent is not intentional. It just happens. But in view of the possible consequences, truly the cockpit must remain clean and tidy at all times during flight.

The resulting consequences

Investigations into the cited 2014 event showed that the camera had been left unsecured between the Captain's side stick and the seat arm rest, such that when the pilot moved his seat forward, it pushed the camera forward too, and eventually, the side stick.

The aircraft dutifully answered this side stick motion and abruptly pitched its nose down for around 20 seconds, reaching a maximum 15 000 feet a minute descent rate. When the aircraft entered this steep descent, the Captain was alone in the cockpit, in a night environment; therefore these 20 seconds were necessary indeed for him to analyse the situation properly, remove the camera, and eventually recover by pulling the stick back and stabilizing the aircraft at a safe attitude.

4 000 feet were lost in altitude during the dive, after which the flight continued uneventfully, but a few passengers and crew members were injured in the process.

This event is just one in too many operational incidents over recent years where a loose item left unsecured or forgotten in the cockpit is involved. The following incident summaries for example, illustrate some common – and preventable – scenarios related to unsecured or forgotten items:

- During an aircraft landing, the roll-out jerks caused the pilot's cap to fall off right onto the Park Brake handle because it was hung too loosely. A jump seat rider present in the cockpit at that time, was quick to react and while attempting to secure the hat, he inadvertently turned the Park Brake handle and set it ON. This obviously led to a rather abrupt stop and the aircraft tires to burst. Thankfully no one was injured in this event.
- On another aircraft in cruise, documentation that had been left on the center pedestal moved and interfered with the rudder trim knob. This resulted in a sudden rudder movement and unexpected aircraft yaw, from which the pilot managed to recover. Again thankfully no one was injured.

Other common situations are regularly heard of:

- Coffee cups placed on the glare shield or pedestal: unexpected turbulence or unintentional bumping by the crew causes fluid to be spilled onto the cockpit control panels. Beverage spill onto electronic equipment may not necessarily have an immediate effect on the flight, but at best, it can lead to an early and expensive overhaul of the equipment.
- Books placed on the glare shield or pedestal: these fall off and may operate some switches or pushbuttons, such as a fuel lever being pushed off, or even de-select a radio frequency.
- Forgotten pens, cutlery (during meals) or clipboards: as small as they can be, they can get jammed in the controls – typically the rudder pedals – when they fall on the floor and move during flight.

Each one of the above incidents must serve as important reminders of the critical need to ensure that items are properly stowed and secured before AND during flight.

The culprits

Establishing an exhaustive list of all potential candidates that may interfere with the controls would be too long and ineffective. These items can include aviation-related items such as portable GPS units, clipboards; non-aviation-related Portable Electronic Devices such as personal cell phones or laptops; and personal items such as clothing or carry-on items. Following are the most common objects that can be found unsecured or forgotten in a cockpit:

- iPad
- Laptop
- Cell phone
- Digital camera
- Spectacles and sunglasses
- Scattered papers
- Pen
- Clipboards
- Meal tray
- Coffee or any beverage cup
- Pocket calculator
- Lighter

This list could be longer, but it gives an idea of the kind of common equipment likely to create hazards when left loose in a cockpit.

The aircraft cockpit ergonomics are designed to be as robust as possible against these kinds of threats. Where relevant, Airbus has developed modifications to prevent the ingestion of foreign objects into the controls. The flap lever mechanism for instance is protected by a brush covering the lever slot, thus efficiently preventing foreign objects from ingress.

However, even a perfectly well-designed cockpit can never be fully protected against the malicious behaviour of unsecured objects. For this reason, prevention is essential and discipline in the cockpit is paramount.

PREVENTION: A PLACE FOR EVERYTHING, AND EVERYTHING IN ITS PLACE...

The 2014 event could have resulted in far worse consequences, had the aircraft been at a lower altitude. This was a strong reminder to the flight crew that they should never under-estimate the potential for harm of everyday life objects, when left unsecured!

In fact, the solution against such events lies in one word: discipline.To help efficiently curb the number of operational incidents involving a loose item in the cockpit, pilots need to be vigilant and ordered.

First, items that are brought in a cockpit must be put and stowed in their dedicated compartment:

- Cups in the cup holders.
- Headsets not in use, on the hook stowage.
- Books and paper, if any, in the lateral stowage.
- Trash in the waste bin in the lateral console.
- Meal trays on the floor behind the flight crew. The flight attendants should collect the meal trays as soon as possible.

- Personal equipment properly secured in the various stowage areas. The Pilot Pocket in particular, is the answer to where to stow valuable items such as a portable GPS or cell phone.
- Flight bags should be kept closed after obtaining whatever was necessary.

Then, we encourage flight crews to incorporate the following simple checks in their preflight actions in order to ensure their working environment is well secured for a flight:

- Inspect the cockpit for forgotten or misplaced items before take-off and ensure all are properly secured and isolated from other equipment in the cockpit. This also helps assure their availability throughout the flight.
- Make sure all your personal items such as hats and jackets, iPads or luggage are secured.
- If necessary, remind jump seat riders not to create distractions and to adopt the same measures and same discipline against unsecured items.

And maintain this attitude and level of alertness prior to AND during flight, putting a particular emphasis on the preparation for the approach phase during the approach briefing prior to descent.

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Loose items in a cockpit environment are not welcome: they can too easily drive a crew into a hazardous, and yet easily preventable, operational situation.

To efficiently curb the number of incidents related to unsecured or forgotten items, pilots need to be vigilant and adopt a clean and tidy cockpit philosophy from preflight through to landing and arrival at the gate.

When entering the cockpit, ask yourself these questions: is all of the luggage secure? How about my own flight bag and my iPad? And just remember: a place for everything, and everything in its place...

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