**Sterile Flight Deck – One of Aviation’s Mysteries**

Compiled by Captain Andrew Poulsen & Dr Graham Edkins

Like many airlines, Qantas has adopted a ‘sterile flight deck policy’ as standard operating practice. A sterile flight deck is a period of limited or no contact between cabin crew and flight crew. A recent survey of Qantas cabin crew by the Corporate Safety Department has revealed some misunderstandings about the sterile flight deck policy, and its importance within aircraft operations. The survey findings coincide with Safety Observation Reports (SOR’s) and Air Safety Incident Reports (ASIR’s) that have been submitted as well as anecdotal evidence that continues to be received from crew during line monitoring and normal operations.

This article outlines the rationale for having a sterile flight deck policy, details our current procedures, and discusses the results of the cabin crew survey. It is hoped that this information will promote discussion and awareness of the importance of sterile cockpit procedures amongst all crew.

**Why do we have a “Sterile Flight Deck” Policy?**

The departure (taxi, takeoff, departure) and arrival (approach, landing, taxi) periods are critical phases of flight that involve high workload for flight crew. Distracting the flight crew with non safety-related issues during these periods, can lead to the omission of important tasks such as obtaining clearances to cross active runways, the correct read back of altitude restrictions and the correct completion of checklist actions.

An historical analysis of aircraft accidents has revealed that most occur during the takeoff and landing phases of flight. While these two phases of flight represent only 4% of journey time, they correspond to 70% of all aircraft accidents (Flight Safety Digest, 1994). To minimize flight crew distraction during these high workload and high risk periods, Qantas has developed an additional no contact period. Non-adherence to the no contact period can be disastrous as was shown in the Delta 1141 accident in 1988, where the flight crew became distracted with a flight attendant in the cockpit and failed to extend the flaps for takeoff.

It must be stressed that safety related communication outside the no contact period is always acceptable and should be encouraged. This was highlighted on one of our own Qantas aircraft when cabin crew alerted the flight crew to an unusual noise under the floor during taxi for departure. The aircraft returned to the gate, where it was found that several containers in the cargo hold had not been properly secured.

**The policy explained**

The sterile flight deck policy is detailed in the Aircrew Emergency...
Procedures Manual (03.50.1-2). There are two parts to the policy: (1) no contact periods and (2) contact for safety related issues. Outside of the sterile flight deck periods, normal communications are permitted. The following illustration from the Flight Training Department outlines the policy.

- Passenger problems. Eg., people refusing to sit for takeoff, violent behaviour or disruptive passengers (CASA regulations);
- Unusual noises or vibrations;
- Medical problems;
- Making contact with the flight crew during the sterile period to pass on passenger requests, or inquire about onwards flight details, connections or arrival gate information is not acceptable. These are not safety-related issues.

Embedded within these flight sequences are no contact periods, which coincide with the highest workload/risk segments of takeoff and landing. During departure, the no-contact period operates between the commencement of the takeoff roll to gear up. During arrival it operates between gear down till the runway is vacated or the aircraft has stopped on the runway. Contact with the flight deck for any reason during this period is not permitted, as distractions can disrupt the flight crew at a critical time.

Even if an attempt was made to contact the flight crew during the no contact period it would most likely be ignored because of the increased workload and prioritisation of tasks. Repeated calls could become an operational hazard. In some circumstances, the flight crew may even be dealing with the problem being reported. Contacting the flight crew (for safety related issues only) would have to wait until after the undercarriage was retracted (departure) or the aircraft stopped or turned off the active runway (arrival).
It can sometimes be difficult to determine the position of the undercarriage unless cabin crew are sitting directly over it, making delineation of the no contact period problematic. On departure the landing gear is retracted soon after becoming airborne, which makes identification easier. However, on arrival the sound may be less distinct. As a general rule of thumb, the illumination of the seat belt sign is a good indication that the aircraft is not far from gear extension and the beginning of the no contact period for landing.

Cabin crew sterile flight deck policy survey results

During February and March 2001, a cross section of long and short haul cabin crew were surveyed to collect information about the following:

- their knowledge of sterile flight deck procedures, and
- the types of situations which they considered contact with the flight deck should be made.

Cabin crew were surveyed face to face in sign on and crew room locations. Those that responded, varied in their length of service from 3 months to 32 years, with an average of 12 years.

The majority of those surveyed, felt that they had never violated the sterile flight deck policy. However, very few of the surveyed crew could accurately identify when sterile flight deck procedures began and ended. For example, 61% identified the "seat belt sign off" as the end of sterile procedures after departure, yet only 11% identified "doors closing" as its beginning. Only 22% correctly identified the "arrival PA" as the beginning of the sterile procedures with 6% identifying the arrival of the aircraft at the terminal, as its conclusion. Flight crew have reported that cabin crew occasionally enter the flight deck (or call via interphone) after the arrival PA has been made, or even during taxi to the arrival gate, to enquire about passenger connections, gate information or landing times. These are not safety related issues and are violations to the sterile flight deck procedures. The above survey results may help to explain the reason for the vast majority of sterile cockpit violations.

In the survey, cabin crew were asked to indicate in what situations they would contact the flight deck during the sterile period. For example, 30% of surveyed crew would not contact the cockpit for a major medical emergency while the aircraft was taxiing for departure. Additionally 47% felt it unnecessary to contact the flight deck for a disruptive passenger. Yet 98% have no reservations about contacting the cockpit during taxi for departure for smoke in the cabin or fire or smoke in an engine. There appears to exist a level of reluctance by some crew to relay important safety related information to the flight crew during the sterile flight deck periods. This might be because of misunderstandings about the policy itself, fear of violating the policy or differing opinions on what represents a safety related issue.

The vast majority of cabin crew surveyed confused sterile flight deck procedures with the no contact period. This may well explain the reluctance of some crew to contact the flight deck under certain circumstances. Also evident were misunderstandings about the no contact period, highlighted by 40% of surveyed crews indicating that they would contact the flight deck during the no contact period. In other overseas carriers, cabin crew have failed to report smoke, toilet fires, unusual noises and vibration and changes in cabin pressure for fear of violating sterile cockpit procedures or as a result of misunderstanding the procedures.

In Summary

The survey, together with formal reports and anecdotal evidence, clearly indicates that there is a misunderstanding by many cabin crew about sterile flight deck procedures. Cabin crew are a vital
resource and are the eyes and ears of the aircraft cabin. Anything unusual that can have the potential to affect safety needs to be reported to the flight deck as soon as possible. These circumstances are allowed for in the sterile flight deck policy.

All crew should refamiliarise themselves with the policy, especially the communication restrictions concerning the “no contact” and “safety related issues” contact periods. This policy is for your safety and the safety of the travelling public.

EDITORS NOTE: Restricted Cockpit Access: Recent security changes to cockpit procedures now place a reliance on clear and concise interphone communications. From a human factors perspective, the reliance on the interphone as a communication medium can create a significant barrier to the effective flow of information, since facial expressions and gestures are hidden. In an abnormal situation, it is recommended that the person with the information, coordinate the communication to the flight deck via the interphone, to avoid filtering or misinterpretation. The information conveyed should be accurate, unambiguous and succinct.

Please refer to the warning below from the International Air Transport Association (IATA) Human Factors Working Group about the potential effects of aviation security changes on aircrew human factors.

FROM THE 2001 IATA SAFETY REPORT

A word of caution from the IATA Human Factors Working Group (HFWG) about proposed aviation security initiatives

At the recent IATA Operations Committee (OPC) meeting in Montreal on 2-3 October 2001, the subject of security enhancements dominated the agenda. This discussion came in the wake of the events of September 11, which have had a profound effect on the aviation industry. One of the agreed outcomes of the meeting was the formation of the Global Aviation Security Advisory Group (GASAG), which aims to provide a coordinated industry view towards global harmonisation of security procedures. GASAG have since commented on a number of initiatives in regard to aircraft security and flight procedures; namely:

- Reinforced and restricted access to cockpit doors;
- Transponder alert;
- In-flight security personnel (Sky Marshals);
- Installation of cameras to monitor passengers;
- Weaponry/Combat training for aircrew;
- Aggressive flight manoeuvres and depressurisation; and
- Enhanced ground/airport security.

NB. This IATA report may not reflect Qantas Policy.

About the Authors

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