# The Dangers of Reduced Crew Operations

## BACKGROUND

Commercial aviation is the world's safest mode of transportation, with a record that continues to improve even as airline flying steadily grows. The public has many factors to thank for this, but at the top of the list are highly trained pilots who fly through increasingly crowded skies at all hours of the day and night and in all types of weather.

Despite this enviable safety record, various commercial aviation interests are actively considering and planning to remove pilots from airline aircraft. They are advocating for systems which will reduce the number of pilots down to a single pilot, or in some cases, no pilot at all.

Advances in aviation technologies have led to systems that aid pilots in managing workload and improving flight path efficiencies. These systems cannot replace the training, flying skills, judgement, and experience of pilots in emergency situations or the dynamic environment of the complex airspace system.

Some companies argue that reducing the number of pilots aboard aircraft could increase profits for airlines and their financial investors without compromising safety. The current body of evidence and experience shows otherwise. The safety and security risks, as well as the challenges associated with reducing flight deck crews, far outweigh the potential benefits.

### Reduced Crew and Single-Pilot Airline Operations: A Risk Not Worth Taking

There are numerous risks associated with reduced-crew and single-pilot operations. Most prominently, these risks stem from the increased workload for the remaining pilot, the elimination of a critical layer of monitoring and cross-checking and operating redundancy on the flight deck, and compromising the safety and security beyond acceptable levels of risk given the many variable emergency situations that may occur during a flight.

Under reduced-crew or single-pilot operations, a combination of integrated systems with varying levels of automation and ground-based pilots with the ability to control the aircraft would be expected to partially offset the extra workload. However, National Aeronautics and Space Administration (NASA) and others[1] indicate that these proposed solutions do not provide the same safety margin as having a second qualified pilot physically on the flight deck.

In addition to increasing workload, single-pilot operations negatively impact communication and pilot performance and do not defend against pilot incapacitation. There are many examples of incidents where two pilots on the flight deck were needed to recover from equipment malfunctions that otherwise would have likely resulted in disaster.

The following statements summarize IFALPA's position against reduced crew operations: (for a more information on these points, please see the long form version of this paper)

## SAFETY BENEFITS OF MULTIPLE PILOTS

- Workload sharing and crosschecking
- Flight deck coordination
- Rapidly adapting to changing conditions
- Emergency response, including those that are not aircraft systems related

## SIGNIFICANT RISKS OUTWEIGH THE PERCEIVED ADVANTAGES

- Cybersecurity on the flight deck
- Inflight security: risk of insider threat
- Increased workload
- Reduced coordination
- Overreliance on Automation
- Technological Hurdles

## PUBLIC POLICY AND OPINIONS ON REDUCED CREW OPERATIONS

- Regulatory requirements mandate two or more pilots
- Public opinion supports two pilots on the flight deck

[1] San Jose University/NASA, *Toward Single Pilot Operations: The Impact of the Loss of Non-Verbal Communication of the Flight Deck* (2014).

## IMPROVEMENTS IN INFORMATIOIN TECHNOLOGY A HIGHER PRIORITY

- Upgrading airspace systems
- Alternative research avenues

## ECONOMIC JUSTIFICATIONS ARE ABSENT

- Overall operating cost savings insignificant/ No change to ticket prices
- Qualified pilots are required regardless of operation type
- Environmental cost

## CONCLUSION

IFALPA fully supports any developments that improve the current safety and security standards in commercial air transport. Our enviable safety record and culture is based upon at least two properly rested, fully qualified, and well-trained pilots at the controls on the flight deck during all phases of flight. It is imperative that any future evolution of this benchmark improves upon it and does not degrade the safety and security level in any area.

It is IFALPA's position that because reduced crew operations carry significant additional risks over existing two-or-more pilot operations, such operations will result in a serious reduction in flight safety and security. It is essential to fully address the risks and shortfalls in safety and security that lie within those reduced crew concepts before the industry accepts changes to the standards which have built the safest transportation system in history.