ALLIED PILOTS ASSOCIATION

Opposition to Single-Pilot/Reduced-Crew Part 121 Operations

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 *two properly rested and highly trained pilots on the flight deck*.

Despite this enviable safety record, various commercial aviation interests are actively considering, planning, and engineering new flight decks to remove pilots from commercial 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.

While 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. These capabilities also cannot replace the proven safety methodology used today known as pilot flying/pilot monitoring, where one pilot flies the aircraft and the other pilot monitors the aircraft, confirms air traffic control direction and input into the aircraft, and focuses on detection of errors.

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. NASA and FAA studies have shown the safety risks and challenges with single pilot operations far outweigh anticipated benefits, citing significantly increased workloads for single-pilot operations when compared with two-crew operations.[1] This increased workload compounds the likelihood of significant pilot errors. High workload situations such as hazardous weather, system failures, and operations in critical phases of flight require timely support and intervention by a monitoring pilot.

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, cross-checking, and operating redundancy on the flight deck; and compromising 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 (who would still induce a labor cost on the airline) would be expected to partially offset the extra workload. However, National Aeronautics and Space Administration (NASA) and others[2] indicate that these proposed solutions do not provide the same safety margin as having a second qualified pilot physically on the flight deck. Additionally, the European Aviation Safety Administration (EASA) recently published a report saying the technology to enable

[1] https://ntrs.nasa.gov/api/citations/20170009542/downloads/20170009542.pdf

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

reduced/single-crew operations is nowhere near the technological level of maturity required to engage in these operations safely.[3] More specifically, the report finds that the equivalent level of safety between reduced-crew or single-crew operations and normal two-pilot crew operations cannot be demonstrated with existing technology and any new technology would require extensive testing to ensure it would meet existing two-pilot margins of safety.

Additionally, single-pilot operations present a drastic increase in vulnerability to large-scale terrorist attacks. The math is simple: A single pilot on the flight deck reduces the ability to physically defend the cockpit by 50%. Remote systems also introduce a new vulnerability: cyber-attacks on the data link used to enable a "remote pilot" to replace the pilot removed from the cockpit. The threat of a large-scale terrorist attack on those networks and electronic infrastructure would need to be mitigated by providing disproportionally large taxpayer-funded security measures.

Congress passed the ***FAA Reauthorization Act of 2024*** (HR 3935), which was signed into law on May 16, 2024. Sections 229, 916, 925, 1043, 1044, and 1045 are all separate lines of effort to spend millions of dollars creating Advisory Committees, Steering Committees, partnerships for research and development, and authorizations to continue to operate Unmanned Aerial System test ranges. The many lines of effort all point to where the Part 121 industry believes it is headed — a future of single-pilot and possibly unmanned commercial airliners bringing the flying public to and from their destinations.

It is the Allied Pilots Association's firm conviction that this future envisioned by aircraft manufacturers and airlines will be one in which safety is traded away for lower costs. The Association believes *two* highly trained and experienced pilots are required in the flightdeck to ensure the safe operation of FAA Part 121 commercial aircraft. *Two* pilots enable the ability to conduct cross-checks, verify flight information, and provide backup for time-critical decision-making to prevent aviation mishaps.

For questions or additional information, please email GAC-Chairman@alliedpilots.org

[3] https://www.easa.europa.eu/en/research-projects/emco-sipo-extended-minimum-crew-operations-single-pilot-operations-safety-risk