



ATCA - Air Traffic Control Association

By Peter Dumont, President

Views on the Future of UAS

Formed in 1956 as a non-profit, international professional membership organization, the Air Traffic Control Association (ATCA) represents the interests of professionals in the air traffic control industry. Dedicated to the advancement of professionalism, the science and technology of air traffic control, ATCA has grown to represent several thousand individuals and organizations managing and providing ATC services and equipment around the world. Members have the opportunity to interact and share ideas with worldwide air traffic control personnel who are actively involved in every facet of modern aviation. Nowhere else is such a broad spectrum of experience and expertise collectively represented than by our ATCA members. These dedicated people, civilian and military, are on a never-ending quest to advance air transportation. The ATCA is deeply involved in NextGen and many of our members are working hard in Europe on SESAR.

Transformation of air transportation is our greatest priority. This year, we have seen the introduction of the very light jet; two new airliners have entered production with the Airbus 380 and the Boeing 787; and derivatives of other commercial airlines. While a diverse manned aircraft fleet mix continues to drive demand and create congestion in the airspace, the unmanned aircraft systems (UAS) present a unique emerging opportunity and challenge for aviation. The opportunity is not only a defense and security market, but also a civilian commercial market ranging from remote sensing to telecommunications. While the UAS market is really in its infancy, the potential is limited only by our imagination and access to the airspace.

A recent market survey by Moire Incorporated characterizes the United States civil market at \$2.6 billion between now and 2017 with a 25% annual growth rate. There are several impediments to growth: 1) access to radio spectrum, 2) uncertainty with aviation regulations and 3) insurance costs. Moire estimates that there will be approximately 2,900 civil unmanned aircraft, with over 79% of these flying at low altitudes and weighing less than 20 pounds. This is quite different from thinking that every UAS is a large Global Hawk or Predator.

Airspace is the challenge – getting certified and putting in place the procedures to be able to file and fly a profile in that airspace. Today, the majority of UAS operations occur in restricted airspace either because of national security, emergency operations, or disaster areas, where few if any other aircraft are operating or under control of the air navigation service provider. But what if you wanted to use UAS's for commercial operations like power and pipeline inspection, remote sensing for resource management, air quality sampling, or a host of other activities where the UAS offers a much more reasonable option than manned flight? The UAS operator must gain access to the airspace. Another challenge is concern over safety for something that most people do not understand. History tells us that when Jaun Trippe of Pan Am introduced jets into service,

they came with significant operating restrictions because those not flying jets were exposed to big, fast aircraft.

The UAS is not unlike the biplanes of the 1920's, before aircraft certification. They were not built to protect human life because it was wonder enough just to be able to fly. But for UAS's there are no people on board. They do not have the reliability of a general aviation aircraft, because they do not need it. In some cases, the UAS is expendable. This is a hard concept to embrace for regulators and the general public. For this reason, our spring issue of *The Journal of Air Traffic Control* focused on UAS integration. ATCA sees one of its roles as promoting *informed* integration of these diverse flight operations.

The safety problems for UAS operations are straight forward: 1) reduce the possibility of mid-air collisions with manned aircraft, 2) manage acceptable risk for lost communications between the UAS and the ground operator, 3) protect citizens from falling debris when loss of control happens, and 4) operate in safe environs that protect people but allow the commercial market to grow. The introduction of UAS into the airspace is a hard task, requiring hard leadership and some tough first steps toward «file and fly» and «sense and avoid.» Some UAS's will fit in your hand. Others fly and hover like helicopters and some are lifted like blimps. This fleet diversity begs the need for diversity in certification standards and airspace operating procedures.

ATCA encourages consideration of the diversity of UAS types and missions and is stepping up to the challenge of being inclusive of this new form of aviation. If we are going to a transformed, performance-based air transportation system, then let's consider as well the performance in safety, certification and operations tailored to the mission.

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