

NEXTTECH FOR NEXTGEN

It's Really About Now-Gen

Feb. 23, 2015

INTRODUCTION

NextTech for NextGen is an initiative intended to promote global changes in the aviation maintenance profession, which is necessary in light of the sweeping technological changes in the design and operation of today's aircraft.

The FAA's move to a satellite-based next-generation air traffic control system (NextGen) – along with the similar Single European Sky ATM Research (SESAR) initiative in Europe – requires modernizing aircraft navigation, communications and surveillance systems so they can utilize high-speed digital communication and data links. The NextGen technologies are in addition to the sophisticated equipment that is already installed in modern business aircraft, such as advanced flight deck avionics and inflight office connectivity in the cabin.

Among the top challenges faced by maintenance providers worldwide is keeping up with all of these technologies. Another concern is how to define an aircraft as fit for flight, when such equipment and guidelines are not clearly referenced in the Federal Air Regulations (FARs).

Building upon NBAA's successful Project Bootstrap initiative to advance the training and certification standards for maintenance personnel servicing business aircraft, NextTech for NextGen is a multifaceted call to action that first targets "need to know" information for a maintenance technician tasked with returning to service a modern transport aircraft. This initiative proposes to change the overall description of the maintenance profession – not only for business aviation, but also throughout private and commercial aviation, including fixed-wing aircraft and helicopters.

BACKGROUND

Despite the ever-increasing shift toward advanced technologies throughout the cabins and flight decks of modern business aircraft, certification standards for aviation maintenance technicians (AMT) remain firmly rooted in a bygone era.

With the need to stay connected – even while airborne – aircraft passengers expect reliable cabin connectivity equipment. However, keeping such systems up and running has become the bane of many a maintenance department at a time when these departments already face the need to replace an experienced labor force with the next generation of maintenance personnel.

"When the original certification standards for maintenance personnel were enacted in the 1960s and 1970s, no one envisioned that today we'd have Wi-Fi controlled cabin systems and onboard access to the Internet," notes NBAA

Maintenance Committee Chairman Jim Sparks. “Today’s A&Ps really aren’t trained on how to handle advanced composites, troubleshoot a Wi-Fi network or high-speed data system, or repair sophisticated digital avionics.”

In consideration of business aviation’s traditional role as an early adopter for new technologies entering general aviation, NBAA has for years championed the establishment of a new and advanced global training standard for AMTs that includes proper training and certification on advanced cabin and flight deck systems.

PROJECT BOOTSTRAP

In 2006, NBAA formed an industry-driven initiative called Project Bootstrap (www.nbaa.org/bootstrap) to raise the educational and professional bar for AMTs, redefine training standards to better suit the requirements of business aviation today, and enhance the skills and expectations of technically minded personnel entering the AMT profession.

Developed by the NBAA Maintenance Committee’s Training & Advanced Education Subcommittee – in collaboration with the National Center for Aerospace & Transportation Technologies (NCATT) and its partners – Project Bootstrap aimed to incorporate advanced avionics and electronics training into the traditional AMT and airframe and powerplant (A&P) curriculums. Among the goals of the program was to incorporate training and certification standards, melding the AMT and Aircraft Electronics Technician (AET) professions into a qualification to service all the technologies found onboard modern business aircraft: the Aircraft Maintenance Technical Engineer (AMTE).

Currently, “AETs may repair these components, but they must rely on an A&P to sign off on the repair and return the aircraft to service,” states Brad Townsend, past chair of the NBAA Maintenance Committee and chairman of the committee’s Training & Advanced Education Subcommittee. “It makes sense to incorporate both skill sets into a ‘super-technician,’ so to speak: the aircraft maintenance technical engineer would be able to effect the proper repair, with in-depth knowledge of correct repair techniques and regulations, and return the aircraft to service afterwards.”

Originally launched as an industry-wide effort, an urgent need within business aviation to adopt standards better matched to the latest technologies has refocused the scope of Project Bootstrap to one devoted to implementing changes as expediently as possible within business aviation. Furthermore, the rate of technological advances in the industry has necessitated a more far-reaching effort beyond the original Project Bootstrap proposal.

A maturing aviation workforce also drives the need to recruit new talent to the field by offering attractive job opportunities in step with the technical backgrounds of many high school and college students entering the job market.

GOING FORWARD

To this end, NextTech for NextGen will examine a variety of suggested paths, including development of education and training standards based on a hub-and-spoke system, enabling industry professionals to pick and choose the type of education and training that is important to them. New maintenance professionals trained under these guidelines would receive industry-recognized certification for their efforts. This credential would stay with the employee throughout their career, enabling them to potentially receive additional privileges from regulatory authorities worldwide.

This multifaceted call to action first targets the “need to know” for a technician tasked with returning a modern transport aircraft to service, then proposes changing the overall description of the aircraft maintenance professional. Once defined, curriculums used by schools to educate entry-level technicians must be realigned with the new required knowledge, and existing technicians must receive the needed knowledge to return sophisticated aircraft to service.

NBAA’S ONGOING ROLE

NBAA Maintenance Committee members have engaged in preliminary discussions with FAA officials about the need to revisit FAR Part 91 and 147 certification standards so that they reflect modern aviation technologies, and NBAA has a commitment from the agency to bring the matter before Congress after 7,000 AETs enter the field. However, the greatest opportunity for change may come through direct interaction with training providers themselves.

Despite a general acknowledgment throughout the industry of the disparity between the A&P and AET roles, the challenges of that effort are twofold: Not only must the industry essentially redefine significant elements of the existing Part 147 curriculum, a new career path must also be defined that establishes a higher professional standard for all avionics technicians and A&Ps working on business aircraft, referred to as the Business Aviation Standard of Education (BASE).

For this effort to move forward, the NBAA Maintenance Committee recognized the need to work with those producing the initial training for AMTs and to encourage them to update their curricula to be more in tune with the current state of industry. Global acceptance and harmonization are essential parts of ensuring economical operations worldwide.

ASTM INTERNATIONAL COMES ONBOARD

In December 2014, members of the NBAA Maintenance Committee met with representatives of ASTM International, an authority in adopting industry-wide standards for compliance and regulation, and with several industry partners, including the Aircraft Electronics Association (AEA), Aeronautical Repair Station Association (ARSA) and Airlines for America (A4A), among others.

From this meeting, it was determined that ASTM would lead the effort to establish industry-wide acceptance and regulatory adoption of the new maintenance technician category, while NCATT would oversee the additional development of a business aviation standard.

“Project Bootstrap serves as an effective model for business aviation, but we also realize that what works for our industry may not fully sync with the rest of general aviation, commercial aviation, or be appropriate for rotorcraft,” notes Eli Cotti, NBAA director of technical operations. “ASTM International is the industry-accepted authority for developing and implementing standards under an accelerated timeframe.”

Going forward, these aviation stakeholders will work to define suitable curricula for use by educational institutions to educate entry-level maintenance technicians. These standards will be aligned with the new required knowledge, while also enabling existing technicians to receive the knowledge necessary to return modern aircraft to service.

Among the tasks are:

- Creating a new training standard:
 - For those just entering the profession (career path)
 - To promote our profession to the next generation
- Ensuring training and education standards are in place for:
 - Technical competency for existing and future aircraft
 - Support of the industry certification requirement
- Engaging regulatory authorities to revise policies and regulations, including:
 - Acceptance of industry-defined ASTM Aviation Professional Standard
 - Added regulatory value and benefit, i.e. adoption under Part 91.411, and 91.413

“While the industry has focused on the avionics and equipment components of NextGen, no one has really considered who the ‘NextTechs’ will be servicing this equipment,” Cotti concluded. “NextTech aims to certify technicians who are able to sign off on the next generation of aircraft as airworthy and fit for its mission.”

About NBAA

Founded in 1947 and based in Washington, DC, the National Business Aviation Association (NBAA) is the leading organization for companies that rely on general aviation aircraft to help make their businesses more efficient, productive and successful. Contact NBAA at (800) FYI-NBAA or info@nbaa.org. Learn more about the NBAA Maintenance Committee at www.nbaa.org/committees/maint.

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