

December 21, 2018

**Electronic Submission via Regulations.gov**

Docket Operations, M-30  
U.S. Department of Transportation (DOT)  
1200 New Jersey Avenue SE  
Room W12-140  
West Building Ground Floor  
Washington, DC 20590-0001

**RE: NBAA Comments to Docket FAA-2018-0811, Airline Transport Pilot and Type Rating for Airplane Airman Certification Standards (FAA-S-ACS-11)**

The National Business Aviation Association (NBAA) represents the interests of over 11,000 member companies. Members include business aircraft operators that employ professional pilots to operate under Parts 91, 91K, 125, and 135. Membership also includes businesses supporting these operators, such as aircraft manufacturers and training providers. It is on behalf of these members that NBAA submits comments to Docket FAA-2018-0811, Airline Transport Pilot (ATP) and Type Rating for Airplane Airman Certification Standards (ACS).

Thank you for the opportunity to submit these comments on behalf of NBAA's members. Please contact me if NBAA can provide any additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Koester", with a long horizontal flourish extending to the right.

Brian Koester  
Senior Manager, Flight Operations & Regulations

NBAA supports the issuance of the Airline Transport Pilot and Type Rating for Airplane Airman Certification Standards to replace the current Practical Test Standards and submits the following comments:

1. Task AA.I.A: Preflight Preparation, Operation of Systems
  - ◆ This task's objective does not specify that the systems tested should be those "appropriate to the airplane" used for the test as currently specified by the ATP PTS and Private/Commercial ACS.
  - ◆ NBAA recommends revising the task's objective to clarify that, "the applicant exhibits satisfactory knowledge, risk management, and skills associated with airplane systems and their components appropriate to the airplane provided for the flight test."
  - ◆ Applicants are only required to be tested on the operation of systems applicable to the airplane provided for test in the current ATP Airplane PTS and Private/Commercial Airplane ACS standards.
  
2. Task AA.I.B.K8: Preflight Preparation, Performance and Limitations, Air carrier weight and balance systems
  - ◆ This task should also be applicable to non-air carrier operators (14 CFR 91, etc.) and is not specifically referenced in either 14 CFR 61.155 or 61.156 with respect to required aeronautical knowledge.
  - ◆ NBAA recommends changing "Air carrier weight and balance systems" to "weight and balance data" to remain consistent with the current ATP PTS.
  
3. Task AA.I.B.S1-S4: Preflight Preparation, Performance and Limitations, Skill Elements
  - ◆ Skill elements S1 through S4 appear to be evaluating an applicant's aeronautical knowledge, not a demonstration of skill.
  - ◆ NBAA recommends eliminating these skill elements, changing these to knowledge elements, or revising them so that they require the applicant to demonstrate a specific skill (or skill set) with respect to aircraft performance/limitations.
  
4. Task AA.I.C.K5: Preflight Preparation, Weather Information, Low-Visibility Operations
  - ◆ Knowledge of Category II and Category III approaches are beyond the scope of an ATP oral/practical test and each has their own eligibility, aeronautical experience, and practical test requirements set forth by 14 CFR 61.67 and 68.
  - ◆ These approaches require special training and authorization and may not be conducted by all ATP-certificate holders without meeting these requirements.
  - ◆ NBAA recommends removing "Category II and III approaches" from knowledge element K5.
  - ◆ NBAA recommends changing "surface movement" to "surface movement and guidance & control system (SMGCS)."

5. Task AA.I.D.K4: Preflight Preparation, High Altitude Aerodynamics
  - ◆ Increased load factor, not necessarily bank angle, may affect high and low speed operating margins. While bank angle increases load factor, so do other external factors such as turbulence and unexpected gusts.
  - ◆ NBAA recommends revising knowledge element K5 to read, "Load factor at high altitude and its effect on high and low speed operating margins."
  
6. Task AA.I.E.K7: Preflight Preparation, Air Carrier Operations, Rudder use in 14 CFR part 25 transport aircraft certification standards
  - ◆ NBAA recommends clarifying what understanding is required of "rudder use" in transport category aircraft. For example, limiting rapid reversal of rudder control input, etc.
  - ◆ NBAA recommends adding a regulatory reference (e.g.:14 CFR 25.353, once finalized) or FAA Advisory Circular/handbook reference to assist applicants in acquiring knowledge of FAR Part 25 transport category aircraft "rudder use."
  
7. Task AA.I.E.K13: Preflight Preparation, Air Carrier Operations, Threat and Error Management (TEM)
  - ◆ NBAA recommends moving this element or adding it to the task's Risk Management section as voluntary safety programs and TEM techniques are tools used to mitigate and manage operational risks.
  
8. Task AA.I.E.K14: Preflight Preparation, Air Carrier Operations, Operations Specifications
  - ◆ Other tasks included later in the ACS require applicants to demonstrate an understanding of Operation Specifications only "if applicable."
  - ◆ NBAA recommends adding an applicability statement to this task, as it only applies to air carriers and does not apply to operators conducting operations in accordance with 14 CFR 91.
  
9. Task AA.I.G.K3-K5: Preflight Preparation, The Code of Federal Regulations
  - ◆ Knowledge elements K3, K4, and K5 are not applicable to all operators irrespective of the category/class rating being sought. For example, 14 CFR 117 is only applicable to certificated passenger-carrying air carriers under 14 CFR 121. This regulation is not applicable to 14 CFR 91, 91K, 121 cargo, 125, or 135 operators.
  - ◆ These regulations are not specifically included in 14 CFR 61.155, 61.156, nor AC 61-138 with respect to ATP CTP curriculum.
  - ◆ NBAA recommends adding an applicability statement, so that 14 CFR 117, 121, and 135 regulations are only to be evaluated if applicable to the operation or type of operation that would normally be conducted in the aircraft presented for the test.

- 10. Task AA.I.H.S1-S3,S5: Preflight Preparation, Water and Seaplane Characteristics, Seaplane Bases**
- ◆ Skill elements S1, S2, and S5 appear to be evaluating aeronautical knowledge rather than skill and closely mirror knowledge elements K2, K3, K8, and K9.
  - ◆ NBAA recommends eliminating these skill elements, since they are already included as knowledge elements, or clarify the specific skills to be demonstrated within these elements.
- 11. Task AA.II.C.S3: Preflight Procedures, Taxiing, Localizer and glide slope critical areas**
- ◆ While AIM 1-1-9(k)(a)(1) & (2) use the terms “localizer critical area” and “glideslope critical area” all references made by ATC (FAA JO 7110.65X, 3-7-5) and through airport markings/signage are to the “ILS critical area.”
  - ◆ Additionally, many 14 CFR 139 airports use ILS critical area markings to identify and protect Precision Obstacle Free Zones (POFZ) which are neither localizer nor glide slope critical areas.
  - ◆ NBAA recommends revising “localizer and glide slope critical areas” to “ILS critical areas.”
- 12. Task AA.III.A.R4: Takeoffs and Landings, Normal Takeoff and Climb, Improper aircraft configuration**
- ◆ NBAA recommends adding “flaps, leading edge devices” to list of improper aircraft configuration examples, as these items frequently contribute to improper aircraft configuration before and during takeoff.
- 13. Task AA.III.H.R1: Takeoffs and Landings, Confined-Area Approach and Landing, Selection of approach path and touchdown area**
- ◆ Obstacles and terrain largely affect the approach path to be flown when landing in a confined area.
  - ◆ NBAA recommends adding “obstacles and terrain” to the list of operational factors affecting selection of approach path and touchdown area for a confined-area approach/landing.
- 14. Task AA.V.A.R2: Stall Prevention, Partial Flap Configuration Stall Prevention**
- ◆ Many modern aircraft are equipped with Angle of Attack (AoA) indicators which represent a very accurate measurement of available lift remaining prior to an aerodynamic stall.
  - ◆ NBAA recommends adding AoA indicators and associated warning devices to list of possible stall warning indicators.

**15. Task AA.V.A/B/C.S4: Stall Prevention Tasks**

- ◆ All three stall tasks reference a bank angle of 15-30 degrees in skill element S4 of each task. This appears to contradict the supplementary information regarding stall prevention tasks in Appendix 7 on Page A-24, which states that only “one must be accomplished while in a turn with a bank angle of 15-30 degrees.”
- ◆ The skill element S4 in each stall task should more clearly indicate that while a bank angle of 15-30 degrees is acceptable at the evaluator’s discretion, a bank is not required to be demonstrated on all stall tasks.
- ◆ NBAA recommends revising skill element S4 of each respective stall task by either removing the reference to 15-30 degrees or clarifying that a bank angle of 15-30 degrees may be requested at the evaluator’s discretion.

**16. Task AA.VI.A.K1: Instrument Procedures, Instrument Takeoff**

- ◆ Runway lighting is an important factor in low visibility takeoffs to assist in the pilot’s ability to continually identify the takeoff surface and maintain directional control during the takeoff roll. Additionally, the absence of certain runway lighting systems (e.g. centerline lighting, high intensity runway edge lights) can significantly increase takeoff minima and have an adverse impact on low visibility operations.
- ◆ NBAA recommends adding “runway lighting” to the list of operational factors for an Instrument Takeoff.

**17. Task AA.VI.B & C.R3: Instrument Procedures, Departure Procedures & Arrival Procedures**

- ◆ It is important to ensure that “see and avoid” is not inadvertently recognized as an acceptable preflight method to avoid terrain or mistaken as an opportunity to disregard aircraft performance calculations. The current ATP PTS makes this distinction in the list of Special Emphasis Areas on Page 9.
- ◆ NBAA recommends clarifying that “see and avoid techniques” refer to traffic avoidance and not terrain/obstacle avoidance.

**18. Task AA.VI.E.K2: Instrument Procedures, Precision Approaches**

- ◆ RNAV (GPS) approaches do not meet the FAA or ICAO definition of a precision approach; however, their use is permitted to demonstrate a precision approach if flown to an LPV DA of 300 feet HAT or lower per Appendix 7, Page A-25.
- ◆ NBAA recommends clarifying that the mention of RNAV (GPS) approach in this knowledge element (K2) is only applicable to the LPV line of minima on an RNAV (GPS) approach procedure.

**19. Task AA.VI.I.S7: Instrument Procedures, Missed Approaches**

- ◆ The most common IFR clearance limit is the destination airport.
- ◆ A short-range clearance to an intermediate clearance limit (fix/waypoint other than an airport) is extremely rare in the NAS today.
- ◆ NBAA recommends revising “Clearance limit” to “Holding fix” as this would be more appropriate in most operational contexts.

**20. Task AA.VII.C: Emergency Operations, Powerplant Failure (Simulated)**

- ◆ NBAA recommends adding the Airplane Flying Handbook, Chapters 3 & 17 to the task References.

**21. Appendix 5, Additional Rating Task Table Note, Page A-13**

- ◆ Within the bullet points on page A-13, the first note refers to an applicant holding only a “private pilot certificate.” 14 CFR 61.153(d)(1) requires an applicant for an ATP certificate to hold at least a “commercial pilot certificate with an instrument rating.” This note appears to contradict this regulation.
- ◆ NBAA recommends revising this bullet point to read, “An applicant holding an airman certificate with airplane single-engine land rating private privileges must perform...”

**22. Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations, Class 1 & Class 2 EFB, Page A-21**

- ◆ While AC 91-78 has not yet been revised to reflect updated guidance, Class 1 and Class 2 EFB definitions have been eliminated to harmonize with ICAO’s definition of Electronic Flight Bags per AC 120-76D (portable or installed).
- ◆ NBAA recommends removing references to “Class 1 or Class 2” EFBs.

**23. Appendix 7: Operational Requirements, Limitations, & Task Information, Page A-22**

- ◆ The note on the top of page A-22 is broad in nature and does not clearly identify which tasks must be performed in “simulated or actual instrument conditions.”
- ◆ NBAA recommends clarifying which tasks must be performed in simulated or actual instrument conditions and which may be performed in visual conditions (Normal Takeoff/Landing, Rejected Landing, Landing from a No Flap or Nonstandard Flap Approach, etc).

**24. Appendix 7: Tasks D & E: Nonprecision & Precision Approaches, Page A-25 & A-26**

- ◆ In the context of precision and nonprecision approach tasks, Appendix 7 states that “one is “expected” to be flown with reference to backup or partial panel instrumentation or navigation display.”
- ◆ The term “expected” differs from the current ATP PTS language (“should be flown”) and is not expressly included in the introductory text which defines a recommendation vs. required directive (Introduction, Page 1).
- ◆ NBAA recommends clarifying both of these statements to more easily distinguish whether this is an ACS requirement or only a recommendation.

**25. Appendix 7: Task E: Precision Approaches, Page A-26**

- ◆ Appendix 7, Page A-26 mentions that RNAV (RNP) procedures with RNP lines of minima “less than RNP 0.30” require specialized advanced training, equipment, and authorization. According to AC 90-101A, RNP procedures with minima of “RNP 0.3 or less” require special training and authorization. This would include RNP procedures with published minima of exactly RNP 0.3.
- ◆ NBAA recommends revising this statement to read, “RNAV (RNP) Instrument Approach procedures with RNP lines of minima of RNP 0.30 or less require specialized advanced training and equipment, and prior FAA authorization.”

**26. Appendix 7: Task G: Circling Approach, Page A-26**

- ◆ Appendix 7, Page A-26 states that in order to remove a “CIRC APCH VMC ONLY” limitation on an ATP certificate and/or type rating, an applicant must complete an approved curriculum or training program. This is a significant change from current guidance which states, “This restriction may be removed when the circling approach is satisfactorily demonstrated to a designated examiner, a check airman who is a designated examiner, or an FAA inspector, in the appropriate type airplane.”
- ◆ An applicant should be able to remove a circling restriction by demonstrating the circling approach and landing from a circling approach tasks outside of the scope of an approved curriculum or training program. Requiring the applicant to complete an approved training program for these two tasks may be extremely cost prohibitive and is not currently required of ATP certificate holders.
- ◆ NBAA recommends revising the statement provided on Page A-26 to allow applicants to remove the CIRC APCH VMC ONLY restriction(s) from an ATP Certificate and/or type rating upon satisfactory demonstration with an appropriately qualified evaluator.
- ◆ NBAA recommends revising the phrase, “same airplane” with “the appropriate type airplane” within the context of this guidance regarding removal of the circling restriction/limitation since a specific type rating often authorizes a pilot to fly multiple make/model/variant aircraft.

**27. Appendix 7: Task D: Powerplant Failure and Restart Procedures, Page A-27**

- ◆ The statement, “The feathering of one propeller and engine shutdown must be demonstrated in any multiengine airplane (or FSTD) equipped with propellers (includes turboprop), unless the airplane is an exception by the type rating and airplane certification.” is not clear with respect to what exception is meant.
- ◆ NBAA recommends revising this sentence to align with the guidance provided in Appendix 6 on page A-19 under “Multiengine Airplane Considerations.”

**28. 14 CFR 61.159(a)(3) – 50-Hour Class Requirement**

- ◆ Amendment 61-130 (78 FR 42375; July 15, 2013) added a 50-hour class requirement for all ATP category/class ratings per 14 CFR 61.159(a)(3). This regulatory addition was prompted by Section 216 of the Airline Safety and FAA Extension Act of 2010 (commonly referred to as the “1500-hour rule” or “Public Law 111-216”) requiring Part 121 flight crew members to have appropriate “multiengine” flight experience.
- ◆ 14 CFR 61.159(a)(3) was added to satisfy this requirement; however, neither the Federal Register nor PL 111-216 makes any distinction between land vs. sea with respect to the

class of aircraft in the context of this regulatory amendment. 14 CFR 61.5(b)(2) defines airplane category classes as: Single-engine land, Multiengine land, Single-engine sea, and Multiengine sea; however, the Federal Register for this regulatory revision makes frequent reference to “multiengine class rating” and “single-engine class rating” without any distinction between land or sea.

- ◆ The regulatory intent of Public Law 111-216 was to require Part 121 flight crewmembers and ATP AMEL certificate holders to have at least 50 hours of multiengine flight experience. The application of 14 CFR 61.159(a)(3) has become burdensome for existing ATP AMEL certificate holders to seek or upgrade ASEL, ASES, and AMES rating privileges to the ATP level due to this new regulation.
- ◆ NBAA recommends amending 14 CFR 61.159(a)(3) to apply only to ATP applicants seeking an Airplane Multiengine Land (AMEL) category/class rating or amending 14 CFR 61.165(e)(3) to exclude the 61.159(a)(3) requirement for applicants who already hold an ATP certificate, seeking an additional ASES, ASEL, or AMES class rating.

#### 29. 14 CFR 61.58 Pilot-in-Command Proficiency Checks

- ◆ The current language in 14 CFR 61.58(d)(1) requires a proficiency check of “...the aeronautical knowledge areas, areas of operations, and tasks required for a type rating...” This has been interpreted by most Federal Aviation Administration (FAA) offices to require what is essentially a maneuvers-based repeat of the original ATP Type Rating exam.
- ◆ NBAA recommends adding an Appendix to clarify which tasks are required when conducting a pilot-in-command proficiency check in accordance with 14 CFR 61.58. This guidance currently exists in the current ATP PTS and would be extremely relevant as the ATP ACS will be the guiding document for the conduct and required standards of 14 CFR 61.58 pilot-in-command proficiency checks.

#### 30. 14 CFR 61.58 Pilot-in-Command Proficiency Checks

- ◆ NBAA believes that effective pilot proficiency checks conducted under 14 CFR 61.58 are essential to maintaining and improving the business aviation safety record.
- ◆ NBAA believes 14 CFR 61.58 currently does not optimally evaluate a PIC’s ability to safely operate complex turbine aircraft in the National Airspace System (NAS). This is especially true of turbojets approved for single-pilot operation.
- ◆ Training and checking will be more effective if it is scenario-based, with individual tasks and maneuvers from the ACS integrated into the scenario. Scenarios should include assessment of risk management proficiency, since this is now required on all tasks in the ACS.
- ◆ Safety data involving business and corporate aircraft have demonstrated that leading accident causes listed in National Transportation Safety Board (NTSB) final accident reports emphasize loss of control-inflight (LOC-I), controlled flight into terrain (CFIT), and a variety of other causes. However, further investigation of these accidents shows the critical role that CRM/SRM plays in such accidents.
- ◆ The safety record of professional two-pilot crews operating corporate aircraft in the United States is unparalleled. In some years, the safety record of these operations mirrors that of domestic airlines operating under Part 121. Nevertheless, accidents in recent years have tarnished this record. For example, on May 31, 2014, a Gulfstream IV crash in Bedford, MA, revealed poor CRM between the two crew members. As a result, a serious procedural non-compliance event escalated into a fatal accident. While the probable cause of these accidents was specified as loss of control, a closer review of the



accident reports suggests other root causes, including poor risk management, inappropriate automation management, ineffective task and workload management, and loss of situational awareness. All these skills are components of SRM and their effective use could potentially have prevented these accidents.

- ◆ The safety record for single-pilot business jets is not as good. For example, in the last several years there have been several fatal accidents involving these operations, including the following.
  - February 1, 2008 – A Cessna 525 CitationJet lost control during departure from a small airport in Maine.
  - December 8, 2014 – An Embraer Phenom 100 crashed during an approach to the Gaithersburg, MD after stalling at low altitude.
  - January 18, 2016 – A Cessna 525 CitationJet lost control while at altitude in Utah, following possible spatial disorientation.
  - December 29, 2016 – A Cessna 525 CitationJet lost control immediately following departure and crashed into Lake Erie, due to probable spatial disorientation.
- ◆ NBAA recommends the ACS Work Group develop standards and guidance for conducting PIC Proficiency checks that are evidence and scenario-based and which emphasize CRM/SRM skills.
- ◆ NBAA recommends recurrent training and checking be evidenced-based and target operations and procedures that address leading accident causes for turbine-powered aircraft, including CRM for multi-pilot crews and SRM for single-pilot operations.

### 31. Risk Management Guidance

- ◆ The draft ATP and Type Rating ACS includes standards for risk management proficiency, as do previously issued ACS documents. However, little guidance is available on how instructors should teach practical risk management and how FAA inspectors, designated pilot examiners, proficiency pilot examiners, and training center evaluators should evaluate risk management skills on practical tests and proficiency checks. Such guidance was recently drafted by the Airman Certification Standards Work Group and forwarded to FAA.
- ◆ To supplement FAA guidance, NBAA has produced a *Risk Management Guide for Single-Pilot Light Business Aircraft*.
- ◆ NBAA recommends FAA expedite its planned review and revision of the *Risk Management Handbook* and other appropriate guidance for pilots on how to conduct effective risk management that was drafted and submitted by the ACS WG, and then revise the *Aviation Instructors Handbook* and examiner guidance accordingly.