June 22, 2021

Mr. Timothy R. Adams
Acting Executive Director, Office of Rulemaking
Designated Federal Official, Aviation Rulemaking Advisory Committee
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Via email: Timothy.R.Adams@faa.gov and 9-awa-arac@faa.gov

RE: ARAC Training Standardization Working Group Initial Recommendation Report

Dear Mr. Adams:

On June 17, 2021, the Aviation Rulemaking Advisory Committee ("ARAC") voted unanimously to accept the Training Standardization Working Group's ("TSWG") Initial Recommendation Report ("Report"). As directed in the ARAC tasking, the TSWG developed this Report and provided the recommendations outlined therein based on its analysis and findings. This Report was also submitted timely, as provided in the tasking, no later than June 30, 2021. It should also be noted, the TSWG went beyond solely providing a proposed master schedule and included recommendations for flagship aircraft and initial instructor and check pilot qualification curriculum.

On behalf of the ARAC members, please accept the Training Standardization Working Group's Report and submit to the relevant program offices for consideration. ARAC would also like to extend its appreciation to the WG's Chair and its members for its efforts to complete the Report timely especially given the challenges of meeting and coordinating the finalization of the Report virtually.

Please do not hesitate to contact me with any questions. Thank you very much.

Sincerely yours,

Yvette A. Rose
ARAC Chair
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cc: David Oord, ARAC Vice Chair: david.oord@lilium.com
        Brian Koester, NBAA and WG Chair: bkoester@nbaa.org

FAA Aviation Rulemaking Advisory Committee (ARAC)

Training Standardization Working Group (TSWG) Recommendation Report

6-30-2021

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1. Executive Summary

1.1 Summary

The Aviation Rulemaking Advisory Committee (ARAC) created the Training Standardization Working Group (TSWG) in March 2020 to provide advice and recommendations to the ARAC on the most effective ways to standardize curricula provided by part 142 training centers offered to part 135 operators, known as the Standardized Curriculum Concept.

The Standardized Curriculum Concept supports the overarching goals to enhance training and checking and promote safer operational practices in part 135 operations through a common and consistent methodology for training and evaluating. This supports the <u>National Transportation Safety Board Most Wanted List</u> initiative to improve the safety of part 135 flight operations.

The TSWG is comprised of representatives from the aviation industry, including training centers, aircraft manufacturers, operators and industry organizations, serving as members of the group and report to ARAC. This recommendations report includes the results of the following TSWG's actions:

- Established a master schedule that lists the priority of aircraft or series of aircraft for standardized curriculum development.

- Identified the Gulfstream (G) V series, including the GV, G450, and G550 variants, as the flagship aircraft-specific standardized curricula to be developed, which will incorporate the maneuvers, procedures, and functions to be performed during training and checking.

- Developed a standardized curriculum to qualify part 142 training center instructors and evaluators (check pilots) to provide part 135 training, testing, and checking. This curriculum comprises the requirements and subjects necessary for initial qualification, recurrent training, requalification, differences, new aircraft types, simulator operating systems (SIM IOS), and non-aircraft subjects.

2. Background

2.1 The Task and Tasking

The FAA established the Air Carrier Training Aviation Rulemaking Committee (ACT ARC) in 2014 to provide a forum for the U.S. aviation community to discuss, prioritize, and provide recommendations to the FAA about operations conducted under parts 121, 135, and 142, addressing air carrier training.

The ACT ARC produced several part 135-specific recommendations it believed would achieve standardization (where appropriate) and significant administrative efficiency in check pilot qualification, flight instructor qualification, and part 135 air carrier training curricula delivered by part 142 training centers. The ACT ARC also recommended the FAA establish a Standardized Curriculum Concept for part 135 training provided by part 142 training centers.

On March 19, 2020, the FAA assigned this task to the Aviation Rulemaking Advisory Committee (ARAC), who established a new Training Standardization Working Group (TSWG) for this purpose. The TSWG tasking for standardization includes addressing inefficiencies that exist between part 135 and part 142, such as:

- Training, Testing, and Checking: Operators may not receive training that matches its operational environment; instructors and check pilots may focus on multiple operational methods, which decreases the quality of training, and checking.

- Lack of curriculum uniformity and improvements.

- Complicated Approval Process: Multiple Principal Operations Inspectors (POIs) are currently required to review technical elements of the same curriculum.

- Administrative Inefficiencies: Supplemental training for training center instructors and check pilots is required, with individual letters of approvals for each, which leaves an administrative gap with no easy means to verify qualifications. Additionally, part 135 operators must develop their own aircraft-specific fleet curriculum and must reproduce a physical copy of each as part of their training program records.

Standardized curricula will provide a common method for quality training accessible to any operator that obtains approval to use the curriculum in its FAA-approved training program. The Standardized Curriculum Concept aims to provide an efficient means to approve training curricula offered by part 142 training centers while increasing the consistency of training, testing, and checking delivered to part 135 operators. The use of standardized curricula is strictly voluntary and is one means to comply with the applicable regulatory requirements of parts 135 and 142. The standardized curriculum does not modify existing regulatory requirements for pilot training or qualification.

The Aircraft-Specific Part 135 Standardized Curriculum Model will enhance operator/training center safety programs and create a feedback loop that allows part 135 operators and part 142 training centers to partner in an effort to systematically use safety information to continually review and improve the standardized curriculum, as well as target areas of emphasis to enhance the quality of training provided. This "train as you fly, fly as you train" approach harmonizes with safety management principles, industry best practices, and risk mitigation, raising the level of safety competencies, threat awareness, and feedback for continual evaluation. This improvement feedback mechanism forms the basis for revising the standardized curriculum, training and checking. These three components then work together to allow the part 135 operator to spotlight the quality of the training program rather than the administration of the training program. Likewise, it also allows the part 142 training center to deliver a standardized and consistent training product that has the capability for continual improvement on a national level.

The TSWG will provide advice and recommendations to the ARAC on the most effective ways to standardize curricula provided by training centers. The group is formally tasked with the following:
1. Recommend a detailed master schedule for the development of part 135 standardized curricula for each aircraft or series of aircraft.
2. Develop and recommend a standardized curriculum to qualify training center instructors and evaluators (check pilots) to provide part 135 training, testing, and checking.
3. Develop and recommend part 135 standardized curricula for each aircraft or series of aircraft, which includes the maneuvers, procedures, and functions to be performed during training and checking.
4. Recommend continuous improvements to each part 135 standardized curriculum for a specific aircraft or series of aircraft.

5. Develop reports that contain recommendations for standardized curricula and results of the tasks listed. The group should review relevant materials to assist in achieving their objective, including FAA Advisory Circular 142-1, Standardized Curricula Delivered by Part 142 Training Centers.

Under the Standardized Curriculum Concept, the TSWG uses formalized stakeholder input to develop and recommend to the ARAC standardized curricula for each aircraft fleet. The ARAC uses the work of the TSWG to make recommendations to the FAA. The FAA reviews the recommendations and, if acceptable, makes draft standardized curricula available for public comment through published notices in the Federal Register. The FAA may task the ARAC, through the TSWG, to use the public comments to refine its recommendations to ARAC. The FAA reviews the recommendations and, if acceptable, publishes the standardized curricula at a national level.

2.2 Working Group Solicitation and Selection

On April 28, 2020, FAA published the task notice and solicitation for members on the FAA ARAC web page. The solicitation was promoted by the interested industry associations, including the National Business Aviation Association (NBAA), National Air Transportation Association (NATA), and General Aviation Manufacturers Association (GAMA). The solicitation period closed on May 22, 2020.

FAA received nominations from 29 individuals. FAA reviewed the credentials of each respondent and recommends the Secretary appoint the selected 20 individuals to serve on ARAC's TSWG. Additionally, the FAA Office of Chief Counsel determined each nominee would qualify as a "representative" member.

FAA used the following key factors to select the nominees:
- Ensure an appropriate range of representation that would include small and large part 135 operators, training centers that provide part 135 training, aircraft manufacturers, industry associations, and individuals with proven experience in instructional design and curriculum development.
- Establish a group size of 15-20 members, a number that will accommodate desired representation while optimizing opportunities for full-committee cohesion and collaboration. Consistent with this factor, FAA selected only one candidate in cases where multiple candidates from the same company or association applied.
- Leverage nominees' previous or ongoing experience with other FAA committees and industry working groups.

FAA appointed Brian Koester, Director, National Business Aviation Association (NBAA) Flight Operations and Regulations, as the TSWG Chair. The NBAA has a representative on the ARAC, and represents the broadest set of stakeholders likely to take advantage of standardized curricula as an option for air carrier and operator training. Koester is a key member of the industry group that recommended the Standardized Curriculum Concept, and provides the TSWG a detailed understanding of the technical and regulatory issues involved.

2.3 Participants in the Training Standardization Working Group (TSWG)

Name	Organization
TSWG Members	
Brian Koester, Chair	National Business Aviation Association
Thomas Benvenuto	Solairus Aviation
Stephen Bragg	Executive Jet Management

Greg Brown	Helicopter Association International
Doug Carr	National Business Aviation Association
Fabiano Cypel	Embraer
Jon Dodd	Coalition of Airline Pilots Associations
Steve Hall	FlightSafety International
Aimee Hein	CAE, Inc.
Jens Hennig	General Aviation Manufacturers Association
Todd Lisak	Air Line Pilots Association
Steve Maloney	Sun Air Jets
Allan Mann	Wheels Up, LLC
John McGraw	National Air Transportation Association
Brian Neuhoff	Airbus Helicopters
Janine Schwahn	Summit Aviation, Inc.
Annmarie Stasi	Talon Air, LLC
Daniel Von Bargen	Jet Aviation Flight Services, Inc.
Mike Walton	Textron
FAA, Other Advisory, and Support Staff	
Mary Thompson, Project Lead	Policy Integration Branch, AFS-270
Paul Preidecker, Facilitator	Training and Simulation Group, AFS-280
Tim Vander Ploeg	Training and Simulation Group, AFS-280
Russ Megargle	Training and Simulation Group, AFS-280
Shannon Salinsky	Policy Integration Branch, AFS-270
Mariellen Couppee	Training and Simulation Group, AFS-280

2.4 Working Group Activity

The TSWG members agreed to form subgroup teams to research and analyze:

- Curriculum, which includes published guidance, regulations, reference materials, data sources, and airframes practical for standardization.
- Qualifications, to include instructors, pilots, and safety-implications.
- Continuous Improvement methods, which includes data-driven metrics and recommendations.

The TSWG must comply with the procedures adopted by the ARAC as follows:

1. Conduct a review and analysis of the assigned tasks and any other related materials or documents.
2. Draft and submit a work plan for completion of the task, which includes the rationale to support the plan, for consideration by ARAC.
3. Provide a status report at each ARAC meeting.
4. Draft and submit the recommendation report based on the review and analysis of the assigned tasks.
5. Present the recommendation report at the ARAC meeting.

As outlined in the FAA Tasking Notice, the TSWG will adhere to the following schedule.

STANDARDIZED CURRICULUM
SAFETY · CONSISTENCY

June 2021 – Deadline to submit the initial recommendation report, which includes the proposed master schedule for standardized curriculum development to ARAC. The deadline to submit the interim report to the FAA is June 30, 2021.

December 2021 – Deadline to submit the addendum recommendation report, which includes a standardized curriculum to qualify training center instructors and check pilots to provide part 135 training, testing, and checking to ARAC. The deadline to submit the interim report to the FAA is December 31, 2021.

If unable to meet the abovementioned deadlines, the TSWG Chair will recommend that ARAC request an extension from the FAA.

The TSWG may submit ad hoc recommendation reports, which includes continuous improvements to the standardized curricula, via ARAC to the FAA for review and consideration at any time.

3. Historical Information

3.1 Overview

The concept of the standardized curriculum was recommended by industry through the Air Carrier Training Aviation Rulemaking Committee to remedy inefficiencies in the current dynamic between part 135 and part 142. The new standardized curriculum is expected to improve the efficiency of approval processes and increase the consistency of training, testing, and checking delivered to part 135 operators.

FAA Advisory Circular 142-1, Standardized Curricula Delivered by Part 142 Training Centers, provides the framework for implementation of the Standardized Curriculum Concept. Under the concept, the FAA accepts an aircraft-specific standardized curriculum at a national level. A part 142 training center may deliver the nationally accepted standardized curriculum to any part 135 operator that obtains approval to use it. The part 135 operator's POI reviews the curriculum and grants approval for use of the aircraft-specific part 135 standardized curriculum, without changes, as part of the operator's training program. In discussions with the operator, the POI determines whether use of the aircraft-specific standardized curriculum (which comes with a cadre of qualified instructors and check pilots the POI can accept, along with use of the standardized curriculum) is appropriate for that operator based on the published guidance, rather than reviewing the specific content of individual modules in the aircraft-specific curriculum and the accompanying training center instructor/evaluator documentation. Introducing an aircraft-specific part 135 standardized curriculum for operators, coupled with guidance that enables part 142 training centers to develop a curriculum that would qualify part 142 training center instructors and evaluators to conduct training/checking under that aircraft-specific part 135 standardized curriculum, would address a number of inefficiencies in the current system.

3.2 Defining the Problem

As a practical matter, when the operator's aircraft is similar to the part 142 training center's Flight Simulation Training Device (FSTD), part 142 training center core curriculums developed for use under part 61 (and approved by the TCPM) address part 135 regulatory training requirements. Part 142 training centers generally have many part 135 clients. Currently, these core curriculums cannot be used by part 135 operators. Instead, each part 135 operator must have its own training program approved by the operator's POI. The training program can be based on the part 142 training center's core curriculum;

however, the POI may make any number of suggested changes. These changes, combined with the time it takes for each POI to conduct an in-depth review of each operator's curriculum, creates strain on the POI, the operator, and the training center. The operator is required to obtain POI approval of the Training Center Evaluator's (TCE) "contract check pilot" to conduct checks under the operator's training curriculum. It is important to note that the TCE/contract check pilot is already approved by the TCPM to conduct certification under the core curriculum. In cases where the operator's aircraft is similar to the FSTD, there are very few, if any, differences between the operator's curriculum and the core curriculum.

This "disconnect" has re-directed resources to address administrative inefficiencies that can compromise safety. For example, POI's often request small changes to a core curriculum when submitted by an operator for approval, which causes the training centers to spend an inordinate amount of time adjusting training programs for each operator. This scenario introduces greater risk to the industry in the form of non-standard training. The core curriculum that was the foundation for the template provided to the operator developed using the part 142 training center's safety program. By addressing each change proposed by an operator/POI in an ad hoc fashion, risk may be introduced without sufficient mitigation.

The framework for the aircraft-specific part 135 standardized curriculum model, which also addresses the inefficiencies involved with each operator having approved instructors/contract check pilots, should include a manner by which training center instructors/evaluators can be qualified as instructors/check pilots under part 135. Specific guidance can be developed that would assist training centers to develop a standard non-aircraft-specific training curriculum that satisfies the requirements of §§ 135.329, 135.345, 135.293, and 135.297 in a manner consistent with the size, scope, and complexity of the operator (in this case, a part 142 training center) and can be approved under part 142. The training center would use this special curriculum to train and qualify its instructors/evaluators to conduct training, testing, and checking under standardized curriculums for part 135 operators.

3.3 Resolution and Benefits
The standardized curriculum may be valuable to the industry due to the expectation it will enable safety and administrative benefits. Within the industry, this curriculum will be especially advantageous to part 142 training centers, part 135 operators that use a part 142 training center, training personnel who develop and deliver training under parts 135 and 142, as well as individual contract pilots.

Enhanced Training, Testing, and Checking.
The use of a common set of Standard Operating Procedures (SOPs) eliminates the situation in which part 142 training center personnel deliver training and checking to numerous part 135 operators with widely varying objectives, standards, and procedures. This approach allows instructors and check pilots to focus on one operational method, which increases their ability to evaluate comprehensively the pilots they are checking.

Leveraging Expertise.
An industry-led group composed of SMEs that represent manufacturers, part 135 operators, part 142 training centers, and industry trade organizations develops the standardized curriculum. Any stakeholder can recommend improvement at any time. This means that as risks are identified (i.e. NTSB safety recs), the curriculum can be updated at a global level, with those improvements drilled down to all the operators using the curriculum.

Streamlined Approval Process.

The FAA accepts and publishes the standardized curriculum at a national level. This eliminates the need for multiple POIs to review technical elements of the same curriculum. Instead, POIs evaluate if the curriculum (and associated standards and procedures) fit the needs of the part 135 operator.

Administrative Efficiency.
A part 142 training center qualifies its personnel as instructors and check pilots for the part 135 standardized curriculum. This eliminates the need for individually issued check pilot letters of approval for each part 135 operator. Also, a part 135 standardized curriculum listed in a training center's Training Specifications (TSpecs) may be referenced in the part 135 operator's training program as an FAA-published curriculum in accordance with § 135.341, without the need to reproduce a physical copy of the curriculum.

3.4 The Scope of a Standardized Curriculum

An aircraft-specific standardized curriculum is only a segment of the training required to serve as a pilot in part 135 operations. It will not provide part 135 operators with a complete training program, and is only a segment of training in accordance with § 135.324(b). See Figure 2-1 Standardized Curriculum Elements below:
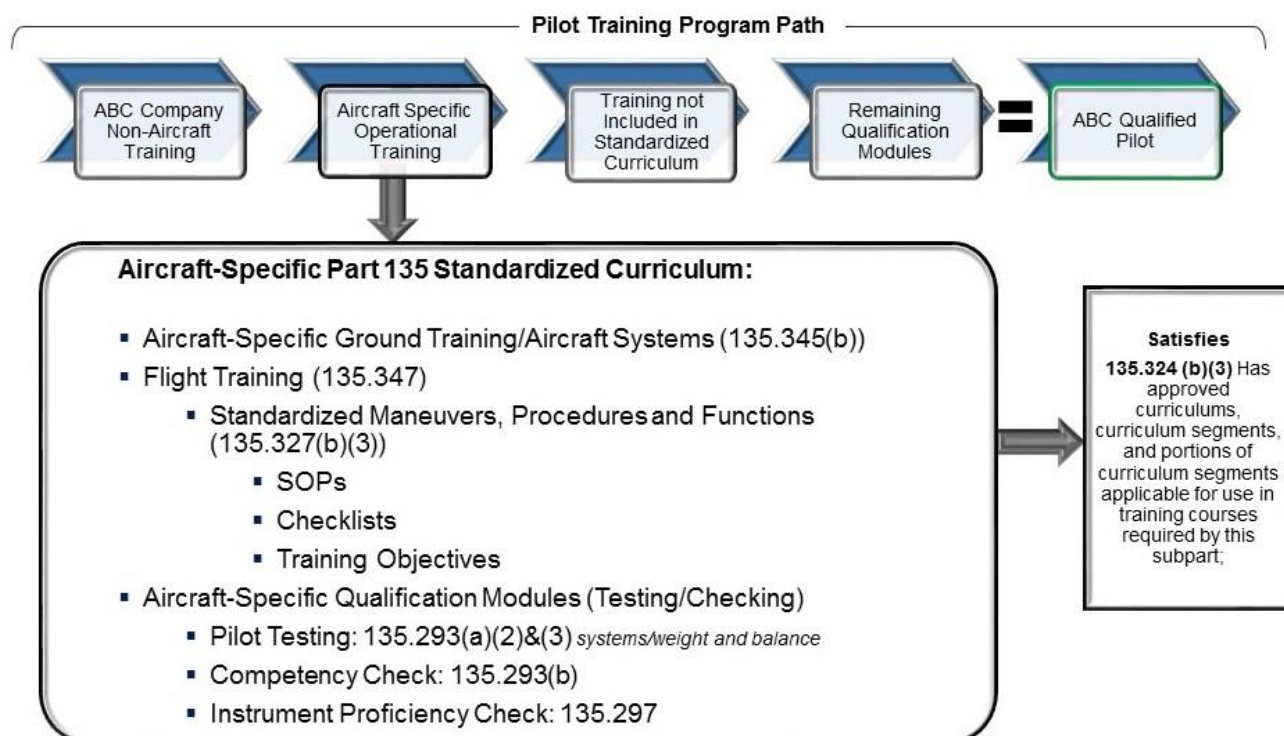
Figure 2-1 Standardized Curriculum Elements

As required for any training conducted in accordance with § 135.324(b), the part 142 training center must qualify its personnel to provide part 135 training, testing, and checking as outlined in AC 142-1 in order to deliver the standardized curriculum. The image above, Figure 2-1, Standardized Curriculum Training Elements, illustrates "the box" in which training, testing, and checking is included in the standardized curriculum, and where the standardized curriculum resides in the path to part 135 pilot qualification. The expanded area, "Aircraft-Specific Operational Training portion of the Pilot Training Program Path", defines the elements within the box of the standardized curriculum, and represents what the ACT ARC recommended.

The Standardized Curriculum Package (SCP) is a package comprised of the training curricula and the supporting courseware, equipment, functionality, personnel, and facilities necessary to deliver a curriculum or group of curricula for part 135 training. The part 142 training center qualifies its personnel to deliver the part 135 training.

A part 142 training center may deliver the nationally accepted standardized curriculum to any part 135 operator that obtains approval for its use. It is one, voluntary way to comply with existing regulations as well as the approval process in a pilot's training program path.

4. Task Group Assignments and Activities

4.1 Defining the Subgroups and Tasking

The TSWG reviewed the assigned tasking from the original ARAC tasking statement, and created these overarching categories to develop a standardized curriculum:
- Curriculum, which includes published guidance, reference materials, data sources, and airframes.
- Qualifications, to include instructors, pilots, and safety-implications.
- Continuous Improvement, which includes data-driven metrics and recommendations related to the cross-type standardized curriculum that will be developed.

Each category was discussed in detail and aligned with task assignments that were directly supportive of the TSWG's objectives and assigned a number:

TWSG Task Detail Table	
1	Develop TSWG meeting schedule.
2	Identify activities that require SME action-teams/sub-groups.
3	Conduct a targeted review of published FAA guidance, data sources, and other reference materials relevant to the design, development and proposals to support the standardized curricula. Examples for review: ARAC Tasking Notice; FAA Advisory Circular 142-1; FAA Order 8900.1 Inspector Guidance (TCPM and POI); Standardized Curricula Delivered by Part 142 Training Centers; Flight Standardization Board Report (FSBR); relevant supporting data sources; etc.
4	Identify systematic development methodology (i.e., Instructional Systems Design (ISD), etc.).
5	Identify list of aircraft types and variants practical for standardized curriculum development.
6	Prioritize standardized curriculum development based on aircraft types.
7	Identify the 'flagship' (first) aircraft type standardized curriculum.
8	Conduct focused review and analysis of existing qualification training curricula for applicable aircraft types under part 135 operations.
9	Develop Instructor and Check Pilot Qualification Curriculum.
10	Identify sub-curricula for each standardized curricula aircraft type (e.g., CQ, Re-Qual; as needed for future development).
11	Identify supporting data and resources.
12	Conduct a regulatory GAP analysis to include parts 135 and 142, along with the proposed standardized curriculum.

13	Identify methodology for ongoing standardized curriculum maintenance and development (who, how, when/triggers for revisions).
14	Determine data-driven methods and element criteria to identify program effectiveness to make recommendations for continuous improvement.
15	Determine the maximum extent to which standardized curriculum programs can be standardized across aircraft types, based on regulatory analysis, safety implications, and manufacturer (OEM) input.

The working group determined these tasks would be achievable through the formation of specialized breakout groups (Action Teams). Each of these new Action Teams would be responsible for research, analysis, and assigned tasking for their team's respective subject categories:

The Regulatory Analysis Action Team	Tasking 3, 8, 11, 12
Instructor / Check Pilot Qualification Curriculum Action Team	Tasking 9
Aircraft-specific Curriculum Action Team	Tasking 5, 6, 7
ISD / Cross-type Specific Action Team (TBD)	Tasking 4, 15
Continuous Improvement Action Team	Tasking 13, 14

The working group agreed on a meeting cadence of bi-weekly, with the Action Teams meeting weekly or as scheduled. Each Action Team provides updates to the broader group's meetings. In light of the COVID-19 public health emergency, all meetings are held virtually. In-person meetings are encouraged when it is determined to be safe and appropriate.

4.2 Subgroup Action Teams

4.2.1 Review and Analysis Results of the Regulatory Analysis Action Team

During the research phase, the Regulatory Analysis Action Team agreed that the current Airline Transport Pilot / Type Rating Airman Certification Standards (ATP ACS) provides the baseline as an acceptable and regulatory compliant framework for both parts 135 and 142 Instructor/Check Pilot qualifications training, maneuvers, and knowledge areas required. The subgroup analysis between the ATP ACS and framework to complete the tasking resulted in a minimal set of differences to be addressed. These differences included maneuvers, which need to be refreshed to ensure alignment and compliance with the ATP ACS and the requirements for part 135 operators.

The team created several documents, matrixes, and side-by-side comparisons to ensure a complete and thorough review was performed, which supports the final recommendations to the TSWG. The Regulatory Analysis Action Team submitted their findings to the broader group for consideration in developing the curriculum in greater detail. Their input outlined the regulatory cross-comparisons between parts 142 and 135, which assisted the curriculum-centric action teams to create standardized training that would fulfill the requirements within a nationally accepted program.

4.2.2 Review and Analysis Results of the Instructor and Check Pilot Qualification Action Team

The Instructor and Check Pilot Qualification Curriculum Action Team convened to propose a standardized, non-aircraft-specific training curriculum to qualify training center instructors/evaluators to deliver the part 135 standardized curriculum. The intent is to have this standard instructor and check pilot curriculum approved under part 142 and authorized in the training center's TSpecs for use by part 135 operators.

Instructors and check pilots must be knowledgeable in the applicable requirements of parts 61, 91, and 135, applicable FAA policies, and the procedures associated with the curriculum they will instruct or check. The submitted recommendation outlines the training required to become qualified as an instructor and/or check pilot in order to administer the training and checking required under part 135 for a standardized curriculum.

Properly trained instructors and check pilots are the key to a successful standardized curriculum. This Action Team's effort resulted in a full curriculum that encompasses the qualification of new personnel and a transition path for the qualification of personnel that are currently qualified to provide parts 135 or 142 training. Additionally, the encompassing curriculum includes modules for requalification, differences (bridging) training, transition training for new simulator operating systems (SIM IOS), and aircraft platforms.

The TSWG believes instructor calibration is a critical component to the standardized curriculum concept. To achieve the full benefits of the standardized curriculum, this group supports a uniform instructor/evaluator grading criterion that includes an evaluation of reliability (inter- and intra-) between instructors and check pilots. Instructor/check pilot calibration should reflect the requirements of the training center and be checked for alignment through regular surveillance and assessments. An assessment interval of one year is considered the minimum but may be conducted more often based upon shifting needs such as high training volume or elevated instructor turnover.

The TSWG recommends each training center have a documented standardization and calibration system in place to meet the calibration criteria. The criteria should include knowledge and application of the grading components, grading scale, and crew assessment.

The working group discussed a four-point grading scale with associated criteria and developed a proof of concept, but determined this needed further refinement and alignment with the upcoming flagship aircraft-specific curriculum in order to create a comprehensive evaluation standard, which complements the standardized curriculum. The grading scale and criteria will be proposed and detailed in a future addendum recommendation report to the ARAC.

During the subgroup's review and analysis, they found variances in the industry with respect to parts 135 and 142 instructor and evaluator credit qualifications. These credit qualifications were initially addressed by the ACT ARC's Air Carrier & Contract Training Working Group (AC&CT WG) as proposed in recommendation 15-2. The team chose to include references to the part 135 and part 142 instructor and evaluator credit qualifications as found in recommendation 15-2 from the AC&CT WG to emphasize the importance for consistency, especially as this directly supports the standardized curriculum concept and measurement of success.

4.2.3 Review and Analysis Results of the Aircraft-Specific Curriculum Action Team

The Aircraft-Specific Curriculum Action Team was formed to identify and prioritize a list of aircraft types and variants for part 135 standardized curriculum development and recommend the flagship (first) aircraft. The following data was reviewed and evaluated:
- The aircraft types as defined by the FAA Type Rating Reference Table as referenced in FAA Order 8900.1- Volume 5, Chapter 2, Section 19.
- The list of part 135 operators and the aircraft types that part 135 operators hold from Title 14 Code of Federal Regulations (14 CFR) Part 135 Operators and Aircraft (updated: 1/4/2021).

- A sample percentage of training events per operator by number of aircraft (by type) and as approved in their Operation Specifications (OpSpec) paragraph A031 for contract training at part 142 training centers.
- Part 135 events recorded at part 142 training centers for a specific one-year time period in the aircraft types listed on the FAA Type Rating Reference Table.
- Aircraft currently in production.

For consistency and clarity, an event is defined as a part 135 operator training schedule reservation with a part 142 training center that result in training / checking activity. A session is defined as singular training, testing or checking that is part – or all of – an event, and occurs based on a defined module within the curriculum.

The extensive FAA Type Rating Reference Table (link noted in above bullets) was used as the starting point to determine the list of aircraft candidates. This information was then cross-referenced with the list of part 135 operators and aircraft types from 14 CFR Part 135 Operators and Aircraft with a 12-month data frameset for all part 135 training events conducted at part 142 training providers willing and able to contribute data.

With this information, a sortable spreadsheet was populated with a percentage of events for all aircraft determined to be applicable. The data was ranked from highest density training events down to the lowest. This approach was used to minimize the chance of convening an aircraft-specific subgroup/action team for a type not currently relevant to industry demand.

Other options discussed were to include sampling part 135 operator's OpSpecs, specifically paragraph A031, and the training events logged at a part 142 training provider over a set period. However, with nearly 2,000 part 135 operators, it was decided that a sample dataset would be non-inclusive as not all operators could contribute and the data would have a chance of missing a specific aircraft variant.

The task team ultimately decided upon part 135 training data from the part 142 providers directly as all part 135 operators training in that time period would be captured in the dataset. While not all part 142 training providers could contribute to the dataset, the providers that chose to participate cover a larger majority of those events than any other dataset. Additionally, the OpSpec data that was available confirmed the data that came directly from the part 142 training providers.

The action team further suggests one program be selected as a beta test candidate, after which the TSWG reconvene to consolidate lessons learned and readjust the aircraft-specific curriculum template as necessary. When complete, the TSWG will convene multiple aircraft-specific subgroup action teams that could be scheduled simultaneously limited only by participant availability, using the priority listing as detailed in the next paragraph.

The information for the Aircraft-Specific Master Schedule table in the Appendix is derived from FAA Orders JO 7360.1; FAA Order 8900.1, Volume 5, Chapter 2 Section 19 figures, "Pilot Certificate Aircraft Type Designators – Airplane", and "Pilot Certificate Aircraft Type Designators – Helicopter", and information from 14 CFR Part 142 Training Provider part 135 training activity for 2019. Five training providers provided information to populate that table:

Bell Helicopter	FlightSafety International
Bombardier Training (BBD)	TRU
CAE, Inc.	

The total volume of part 135 events recorded by the sample number of part 142 training providers used during the team's research was agreed upon as the best indicator of the part 135 events per aircraft designation, and thus the most accurate information on overall volume. From the number of events recorded, a ranking (by percentage) was achieved with the greatest number of training events. Sorting the table by that percentage indicator provided the recommended ranking.

The working group recognized that this list, as included in the Appendix, is subject to change in priorities, as the industry is quickly evolving, along with operator fleet aircraft and training requirements. The list appears static in this document; however, it is only a snapshot of the current landscape. The TSWG agreed the master schedule list should not include data from 2020, due to the global destabilizing events associated with the COVID-19 Public Health Emergency and used data up to 2019 for this purpose. The TSWG also suggests the ARAC update this list each year, starting with the end of year 2021 data to ensure the capture of changes in training volume per type on an annual basis, and to spot new programs training under part 135 at part 142 training providers as they occur.

Additionally, the TSWG suggests current and future programs trained under part 135 at a part 142 training provider should be considered for a standardized curriculum. As recommended, the list provided and updated annually is a list that recognizes the priority of a standardized curriculum development, without precluding any aircraft type or volume of training recorded. As types are brought online, there will be much that could be shared with less active programs. The advantages of having a standardized curriculum option for all programs in use by part 135 operators at part 142 training centers is believed to be worth the time spent creating those programs.

5. Recommendations

1. Recommend the master schedule for aircraft-specific standardized curriculum development as submitted, determined through research and data analysis, the priority in which each aircraft or series of aircraft curriculum will be developed.
2. Recommend the aircraft-specific standardized curricula to be developed for the GV series as the flagship aircraft, including the GV, G450, and G550 variants, incorporating the maneuvers, procedures, and functions to be performed during training and checking.
3. Recommend the submitted standardized curriculum to qualify part 142 training center instructors and evaluators (check pilots) to provide part 135 training, testing, and checking. This curriculum comprises the requirements and subjects necessary for initial qualification, recurrent training, requalification, differences/bridging training, new aircraft types, new simulator operating systems, and non-aircraft subjects.

5.1 Recommendation 1: The Master Schedule

The TSWG recommends the master schedule for aircraft-specific standardized curriculum development as submitted in the Aircraft-Specific Master Schedule table detailed in the Appendix. These aircraft, along with their priority number noted in the "Final Rank" column, include the variants associated with that type designation.

Rationale

With the guidance regarding the standardized part 135 curricula for use at part 142 training centers, "The FAA will now be able to publish a standardized curriculum at the national level. A part 142 training center may deliver a standardized curriculum to multiple 135 operators, which supports quality and consistency of training and checking. Voluntary use of standardized curricula for part 135 training promotes safety and increases administrative efficiency for industry. Based on these benefits, the FAA expects that most part 135 training provided by part 142 training centers will occur through standardized curricula after the implementation of the concept." (AC 142-1 Standardized Curricula Delivered by Part 142 Training Centers)

In order to determine a prioritized list of aircraft for which a standardized curriculum would be appropriate, the working group reviewed training data from as many part 142 training providers as possible. This methodology was chosen because the part 142 training centers are considered training "experts", with data that would be timely, relevant, and in sufficient quantity to provide a valid sampling of which operators use training centers to train, and preferred aircraft training platforms.

With the research provided by the aircraft-specific action team, it quickly became apparent that there are some aircraft that constitute a significant percentage of part 135 aircraft, and that there are many others that are almost one-off part 135 aircraft that would not benefit the industry by creating a standardized curriculum. The subgroup provided data to the group with the aircraft determined to be applicable and ranked from the highest density training events down to the lowest. This approach was used to minimize the chance of convening a type-specific curriculum development subgroup for a type that would not be relevant to industry demand.

5.2 Recommendation 2: Flagship Aircraft

The TSWG recommends the Gulfstream (G) V series for the flagship aircraft-specific standardized curricula aircraft, including the GV, G450, and G550 variants, which will the maneuvers, procedures, and functions to be performed during training and checking. This recommendation is based upon the aircraft-specific subgroup that developed the overall master schedule Aircraft-Specific Master Schedule table included in the Appendix. The Gulfstream GV series ranked first on this list.

The TSWG plans to designate a type-specific GV subgroup to develop the standardized curriculum, and will designate other type-specific subgroups to complete the remainder of aircraft and variants found on the master schedule once this has been completed and approved by ARAC. These type-specific subgroups may reconvene when the initial standardized curriculum has been approved to determine if updates are needed, and what impact (if any) to the baseline curriculum being developed.

Rationale

The TSWG accepted the proposal from the aircraft-specific action team for the GV series to serve as the flagship curriculum candidate based upon their research and findings. The curriculum with baseline template will be developed by a new type-specific subgroup comprised of SMEs. Upon completion and acceptance, the TSWG will consolidate lessons learned and readjust the developed template as necessary. The TSWG will also designate other type-specific subgroup action teams that could develop the remainder of the aircraft found in the priority master schedule simultaneously (limited only by participant availability).

5.3 Recommendation 3: Instructor and Check Pilot Qualification

The TSWG recommends to be qualified as an instructor or evaluator for a 14 CFR part 135 Standardized Training Curriculum approved for use at a part 142 training organization, an instructor or evaluator should successfully complete the requirements as defined in the Instructor/Check Pilot Standardized Curriculum Qualification Course found in the Appendix. This document details the curriculum requirements including the subjects necessary to complete:

- Initial qualification.
- Recurrent training every 12 calendar months.
- Requalification.
- Bridging, which provides a path for those who are currently qualified as instructor/evaluators for parts 135 or 142 the training required to include the Standardized Training Curriculum.
- Variables such as transitioning to new SIM IOS and subsequent aircraft types.
  - Non-aircraft-specific subjects previously completed for the first (initial) instructor or evaluator qualification need not be repeated.

Rationale

Title 14 Code of Federal Regulations, 14 CFR, part 135.324(b)(4) requires that a part 142 training center "Has sufficient instructor and check pilots qualified under the applicable requirements of this subpart" and 14 CFR part 135.323(a)(1) requires that a training program be implemented to ensure those flight instructors and check pilots are adequately trained. Additionally, 14 CFR part 135.337(c)(2)&(3) and § 135.338(c)(2)&(3) require an instructor and check pilot (simulator) complete the training and proficiency or competency checks required of a Pilot in Command (PIC) in operations under part 135.

To conduct aircraft specific training for part 135 pilots at a part 142 training center, much of the part 135 instructor and evaluator training requirements can be credited by currently required part 142 instructor and evaluator training requirements. A review of the instructor and evaluator training requirements for both parts supports this approach. One example is §§ 135.339(c)(1) and 142.55(a)(3)(i); the only difference between the two is the moniker used for 'examiner'. Additionally, the regulatory intent for type specific checking is identical for a simulator evaluator under both those regulations. Similarly, § 135.340(a)(1) & (2) are less restrictive than § 142.53(a)(1), which is the part 142 counterpart to both.

For instructor and evaluator training and qualification requirements under part 135 that exceed those of part 142 and as referenced in AC 142-1 Chapter 3, Section 3.1, additional items are included in the recommendation. These additional modules consist of the part 135 addendum to a part 142 training provider's existing approved instructor and evaluator training program to initially qualify instructors and evaluators - for aircraft-specific type training and checking only - for the part 135 standardized curriculums approved on their part 142 TSpecs. The additional modules include a review of the standardized curriculum guidance to ensure all instructor and check pilot candidates clearly understand the concept.

In accordance with AC 142-1, Chapter 3, Section 3.1.4, "A curriculum for part 142 training center instructor and check pilot training is intended only to qualify them in their role as a part 135 qualified instructor or check pilot at the training center", the working group considers the instructor and evaluator training as outlined in Instructor/Check Pilot Standardized Curriculum Qualification Course as well as the part 135 to part 142 Compliance Matrix found in the Appendix. These support the proposed recommendation to fully cover the elements required (including Basic Indoctrination) to be a knowledgeable, proficient, and qualified part 135 instructor pilot and/or check pilot in a simulator. To

maintain consistency, no additional training should be required. This includes that a part 135 simulator instructor and check pilot need not attend a part 135 operator-specific Basic Indoctrination course.

The additional modules identified in this recommendation can be delivered as part of the initial training program required for simultaneous parts 142 and 135 standardized curriculum instructor and evaluator qualification, or in the form of a transition from parts 142 to 135 qualification course, as add-on modules for instructors and evaluators currently qualified under part 142.

Although part 135 does not require recurrent instructor and check pilot training other than aircraft-specific PIC proficiencies, § 142.53 does require this annual recurrent training. To remain qualified as an instructor or evaluator for a 14 CFR part 135 Standardized Training Curriculum approved for use at a part 142 training organization, a recurrent aircraft training event and a review of the same subjects that are required for initial instructor and check pilot qualification should be covered in annual recurrent instructor and check pilot training.

Both parts 135 and 142 are largely silent on requalification requirements for instructors and evaluators. However, as § 142.53 does require training on all required instructor and evaluator subjects every 12 months, requalification training can be completed using either the full initial instructor training course or the shorter recurrent version as both will cover all the required subjects. In addition, transition from aircraft to aircraft does not necessitate a repeat of already completed non-aircraft-specific instructor and evaluator modules.

The TSWG also supports the ACT ARC 15-2 Recommendation for rulemaking alignment between parts 142 and 135 "to address inconsistencies and to harmonize terminology and requirements", with specific attention to the credit for instructor/evaluator training and qualification equally between both parts where appropriate. To assist with this harmonization and support of a standardized curriculum, the TSWG references the Compliance Matrix found in the Appendix, which was completed in 2014 by the ACT ARC's AC&CT WG. This matrix details a regulation-by-regulation comparison between parts 135 and 142 instructor/evaluator training requirements, and when developed, included representation from the FAA, part 135 operators and part 142 training providers.

6. Consensus

The TSWG voting members achieved consensus on all recommendations as submitted to the ARAC for review and approval.

Glossary of Terms

ACT ARC	Air Carrier Training Aviation Rulemaking Committee
AC&CT WG	Air Carrier & Contract Training Working Group
ACS	Airman Certification Standards
AO	Air Operations
ARAC	Aviation Rulemaking Advisory Committee
Bridging	Standardized Curriculum differences training path for those currently qualified as instructor/evaluator (check pilot) for parts 135 or 142
CAE	Training Center for Pilots
Event	A part 135 reservation resulting in training and/or checking activity
FOQA	Flight Operational Quality Assurance
FSB	Flight Standardization Board
FSI	FlightSafety International / Training Center for Pilots
FSTD	Flight Simulation Training Device
GAMA	General Aviation Manufacturers Association
ISD	Instructional Systems Design
Level D (sim)	Full motion flight simulator which includes all aircraft systems that are accessible from the flight deck and critical to training
LOA	Letter of Agreement
LOE	Line Operational Evaluation
LOFT	Line-oriented Flight Training
LOS	Line Operational Simulation
NATA	National Air Transportation Association
NBAA	National Business Aviation Association
NextGen	Next Generation Air Transportation System
OpSpec	Operations Specifications
PIC	Pilot in Command
POI	Principal Operations Inspector
Session	Singular training, testing or checking that is part – or all of – an event, and occurs based on a defined module within the curriculum
SME	Subject Matter Expert
SMS	Safety Management System
SOP	Standard Operating Procedure
SOQA	Simulator Operations Quality Assurance
TCE	Training Center Evaluator
TCPM	Training Center Program Manager
TSB	Training Standardization Board
TSpec	Training Specifications
TSWG	Training Standardization Working Group

References and Links

ATP ACS

NTSB Most Wanted 2019-20-MWL-SafetyRecs

15-1 Addressing Administrative Inefficiencies for 135 Operator Training Programs delivered by 142 Training Centers (Guidance)

15-2 Addressing Administrative Inefficiencies for 135 Operator Training Programs delivered by 142 Training Centers (Rulemaking)

15-9 Aircraft-Specific Part 135 Standardized Curriculum Model

16-1 Scenario-Enhanced Recurrent (SER) Training and Checking for 135 Operators

16-5 Guidance for 14 CFR 135.299 Line Checks

17-2 Guidance for Written Tests Conducted under Part 135 and Part 142

17-3 Guidance for 142 Instructor/Evaluator Training Requirements

17-4 Guidance for 142.53(b)(1) Deviation Requests

17-5 Guidance for Training Center Evaluator Observation Credit

17-6 Training Center Approval Process Efficiencies

18-4 Continuous Improvement of Standardized Curricula

FAA Order 8900.1 V3 Ch19 Sec16

Advisory Circular 142-1

FAA Order 8900.544 Standardized Curricula Delivered by Part 142 Training Centers

FAA Standardized Curriculum

ARAC Training Standardization Tasking Notice

Standardized_Curriculum FAQs

Appendix

1. Objective

Upon Instructor Prerequisites: Meet the ATP eligibility requirements for the aircraft in which the candidate is seeking instructor qualification. Prior to acting as an instructor on a part 135 standardized curriculum, the pilot must meet the applicable requirements of § 135.338 and successfully complete this course.

    a. Check Pilot Prerequisites: Meet the ATP eligibility requirements for the aircraft in which the candidate is seeking check pilot qualification. Prior to acting as a check pilot on a part 135 standardization curriculum, the pilot must meet the applicable requirements of § 135.337 and be recommended by the training center.

2. Modules

    a. An approved 14 CFR part 142 training program that meets the requirements for instructor/TCE qualification (satisfies the training requirements of §§ 135.337, 135.338, 135.339 and 135.340 except 135.340(c)).

        i. LOS requirement must be conducted in compliance with §§ 135.337(f) / 135.338(f) and 142.53(b).

    b. Additional approved training on *14 CFR part 135 requirements* and generic *certificate holder Policies and Procedures*, to include at a minimum the following (satisfies the training requirements of § 135.340(c)):

        i. Review of the following guidance and documents:

            1. FAA Advisory Circular AC 142-1

            2. FAA Order 8900.1 Volume 3, Chapter 54, Section 3 *Part 135 Standardized Curricula Delivered by Part 142 Training Centers*

            3. Review delta between the training center's part 142 approved core curriculum and the part 142 training center's approved Standardized Curriculum Package (SCP)

        ii. Operations Specifications:

            1. Part A

                a. A004 Summary of Special Authorizations and Limitations

                b. A008 Operational Control

                c. A011 Approved Carry-On Baggage Program

                d. A027 Land and Hold Short Operations (Not Authorized)

                e. A031 Contract Training

                f. A041 Pre-takeoff Contamination Check

                g. A055 Hazmat General Discussion

                h. A057 Conduct "Eligible On-Demand Operations"

                i. A061 Electronic Flight Bag

                j. A097 Use actual, standard average, or survey-derived average weights

                k. A153 ADS-B operations outside of U.S. (Not Authorized)

                l. A999 ICAO Air Operator Certificate

            2. Part C

                a. C049 Destination Airport Analysis Program

                b. C051 Terminal Instrument Operations

                c. C052 Basic instrument approach procedures for airplanes

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      d. C054 IFR approach procedures using special IFR landing minimums

      e. C055 Alternate airport weather minimums

      f. C057 IFR takeoff minimums

      g. C063 IFR area navigation, DP's, STARs, and TA's

      h. C064 Conduct nonscheduled passenger and/or all-cargo

      i. C073 MDA as a DA/DH with vertical navigation on a NPA

      j. C075 IFR circle-to-land approach maneuver

      k. C077 Turbojet operation in the terminal area using visual flight rules

      l. C079 Operations using lower than standard takeoff minima

3. Regulations, Policies and Procedures for:

      a. Instructor/Check Pilot Simulator Qualifications and Requirements

      b. Preflight

            i. Flight preparation

            ii. Crew Briefings (International & Domestic)

            iii. Maintenance Log

            iv. Airworthiness Release

            v. Operational Control

            vi. Destination Airport Weather Minimums

            vii. Takeoff Alternate Airport Weather Minimums

           viii. Surface Movement Guidance and Control System

            ix. Baggage

            x. Carriage of Weapons

            xi. Child Restraints

            xii. Portable Electronic Devices

           xiii. Passenger Briefings

           xiv. Departure Briefings

            xv. Line up and Wait

           xvi. Takeoff

      c. Inflight Operations

            i. Sterile Cockpit

            ii. The Two Communication Rule

            iii. In-Flight Failure

            iv. Oxygen Requirements

            v. Enroute Diversion

            vi. Landing Limitations

            vii. Approach Briefing

      d. Postflight

            i. Maintenance Log Entry

            ii. Mechanical Discrepancy Report

            iii. Post-Flight Briefing

            iv. Safety Report

      e. Applicable Rest/Duty requirements

            i. Rest/Duty Time & Fatigue Mitigation

            ii. Rest Requirements

            iii. Departure Delays

            iv. Additional Flight Time

            v. Exceeding Duty Time

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3. Instructional Delivery Methods

Methods to convey information to the candidates depend upon modules and may vary. Methods utilized are identified in each module of training and could include:

    a. Briefings
    b. Audio/visual presentations
    c. Demonstrations
    d. Drills
    e. Flight Simulation Training Devices
    f. In-aircraft training
    g. Distance learning
    h. Virtual Reality

4. Completion Standards

Each candidate will complete all required modules listed above and demonstrate his or her knowledge, skills and ability. All hours assigned to each module are considered planned hours and may differ from actual hours.

All candidates will successfully pass an oral, written, or electronic exam associated with each ground training module. This exam can be conducted after each module, or as one end of ground training exam. A minimum grade of 80% (corrected to 100%) is required.

In addition, a practical demonstration of instructional or check pilot ability is required as per §§ 135.340 or 135.339. The § 135.340 practical demonstration may be credited for § 142.53(a)(1), and the § 135.339 demonstration meets the annual requirement for a part 142 training center examiner observation.

Upon successful completion of the *Instructor/Check Pilot Standardized Curriculum Qualification Course*, training records will be updated accordingly, with the candidate functions defined in his or her records. Failure to successfully complete the qualification section may result in additional training and a subsequent re-check or removal from the course. Remedial training will be conducted according to the training center's identified policies and procedures.

Description of Part 135 Regulation	Part 135 Regulation	Part 142 Regulation	Regulatory Gap	Recommendations
Holds the applicable airman certificates and ratings, except medical certificate, required to serve as a pilot in command in operations under this part;	135.337(c)(1)	142.55(a)(2) 142.47(a)(5)(i) 142.47(a)(5)(ii) 142.49(c)(3)(iii)	Part 135 requires the check pilot to hold the certificates required to act as PIC while part 142 only requires a TCE to meet the applicable ATP experience requirements.	Guidance should reinforce the requirement for each contract check pilot to hold the certificates required to act as PIC.
Has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training, that are required to serve as a pilot in command in operations under this part;	135.337(c)(2)	142.55(a)(2) 142.55(a)(4) 142.53(a)(3) 142.53(a)(7)(ii)	Depends upon the definition of appropriate training phases for the aircraft. Does this mean all PIC required ground training or just Aircraft Specific? For Aircraft Specific training, part 142 uses different terminology, but addresses the same concept. Part 142 requires annual ground training and flight checking while part 135 requires recurrent training and allows a flight check to substitute for recurrent flight training § 135.351(c).	1. Make it clear in guidance that the intent of this part 135 rule is to require aircraft specific training; or 2. Develop a set of curriculum guidelines that allow a part 142 center to meet AFS-280 Air Carrier standards for both parts 135 and 142 simulator only evaluators. With an approved curriculum that meets the AFS-280 standard, allow the part 142 training to qualify for part 135 credit.
Has satisfactorily completed the appropriate proficiency or competency checks that are required to serve as a pilot in command in operations under this part;	135.337(c)(3)	142.55(a)(4)	Depends upon the definition of appropriate checks required to serve as PIC. Does this mean all PIC required checking or just aircraft-specific § 135.293(a)(2-3) (b)? For Aircraft Specific, part 142 uses different terminology, but addresses the same concept. Part 142 requires annual ground training/testing and flight checking while part 135 requires Recurrent training and allows a flight check to substitute	1. Make it clear in guidance that the intent of this part 135 rule is to require aircraft specific checking; or 2. Develop a set of checking guidelines that allow a part 142 center to meet AFS-280 Air Carrier standards for both parts 135 and 142 Simulator only evaluators. With an approved check that meets the AFS-280 standard, allow the part 142 check to qualify for part 135 credit.

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Description of Part 135 Regulation	Part 135 Regulation	Part 142 Regulation	Regulatory Gap	Recommendations
			for recurrent flight training § 135.351(c).	
Has satisfactorily completed the applicable training requirements of § 135.339; and	135.337(c)(4)	142.55(a)(2) 142.53(a)	Part 135 requires check pilot training on an initial or transitional basis. Part 142 requires evaluator training on an initial and recurrent basis.	If an approved part 142 course that meets AFS-280 standards is used to meet both parts 135 and 142 requirements, then guidance should allow the part 142 training to be accepted for part 135 credit. Part 142 training intervals exceed the part 135 requirements.
Has been approved by the Administrator for the check pilot (simulator) duties involved.	135.337(c)(5)	142.55(a)(1)	None	If an approved part 142 course that meets AFS-280 standards is used to meet both parts 135 and 142 requirements, then guidance should allow the part 142 qualification to be accepted for part 135 credit. Individual POI issued Check Pilot LOA's could continue, but it would be most efficient to automatically allow TCE qualifications to count.
Completion of the requirements in paragraphs (c) (2), (3), and (4) of this section, as applicable, shall be entered in the individual's training record maintained by the certificate holder.	135.337(d)	142.73(b)	Part 135 requires the part 135 certificate holder to maintain the records while part 142 requires the part 142 certificate holder to maintain the records.	If an approved part 142 course that meets AFS-280 standards is used to meet both parts 135 and 142 requirements, and the associated part 142 records are deemed acceptable, then guidance should allow the part 142 records to be maintained at the training center where the training occurred. Individual part 135 operator records could continue using part 142 documents, but it would be most efficient to automatically allow the part 142 instructor and

Description of Part 135 Regulation	Part 135 Regulation	Part 142 Regulation	Regulatory Gap	Recommendations
				evaluator records to be maintained at the part 142 training center using part 142 record keeping rules.
Check pilots who do not hold an appropriate medical certificate may function as check pilots (simulator), but may not serve as flight crew members in operations under this part.	135.337(e)	142.49(c)(3)(iv)	None	
Fly at least two flight segments as a required crewmember for the type, class, or category aircraft involved within the 12-month preceding the performance of any check pilot duty in a flight simulator; or	135.337(f)(1)	142.55(a)(2) 142.53(b)(1)	Part 135 requires two segments as a required crewmember, while part 142 requires two hours in flight including three TO's (takeoffs) and landings as sole manipulator of the controls.	Regulatory changes might be considered to sync up the regulations. One resolution could be to require any part 142 evaluator who is also going to be a check pilot to have documented two segments in flight. It becomes a record keeping issue for each individual evaluator/check pilot to log the appropriate segments and TO/Landings required to meet both rules.
Satisfactorily complete an approved line-observation program within the period prescribed by that program and that must precede the performance of any check pilot duty in a flight simulator.	135.337(f)(2)	142.55(a)(2) 142.53(b)(2)	None. Part 142 allows evaluators to use an Air Carrier line observation program. Interestingly, an Air Carrier is allowed to have a simulator based line observation program, but part 142 must have a deviation to § 142.53(b)(1) in order to get a simulator based flight experience event approved.	If guidance is updated, it could also redefine the § 142.53(b)(3) in-flight observation to align with the § 135.337(f)(2) line observation program (done by flying the simulator) requirements, then the need for § 142.53(b)(1) deviations are no longer needed.

Description of Part 135 Regulation	Part 135 Regulation	Part 142 Regulation	Regulatory Gap	Recommendations
The flight segments or line-observation program required in paragraph (f) of this section are considered to be completed in the month required if completed in the calendar month before or in the calendar month after the month in which it is due.	135.337(g)	142.55(a)(2) 142.53(c)	None	

Type Certificate Holder	Civil Model Designation	Current Type Rating Designation	% Volume of Training	Final Rank
Gulfstream Aerospace Corporation	GIV-X, GIV-X (G350), GIV-X (G450), GV, GV-SP, GV-SP (G500), GV-SP (550)	G-V	7.38	1
Textron Aviation Inc.	DH.125 Series BH.125 Series HS.125 Series BAe.125 Series 800 Hawker 750, Hawker 800 Hawker 800XP Hawker 850XP Hawker 900XP	HS-125	6.52	2
Textron Aviation Inc.	560XL, 560XLS, 560XLS+	CE-560XL	5.65	3
Gulfstream Aerospace Corporation	G-IV, G-IV (G300), G-IV (G400)	G-IV	4.85	4
Textron Aviation Inc.	300, 300LW, B300, B300C, (BE-300F)	BE-300	4.84	5
Embraer S.A.	EMB-505 (Single Pilot) EMB-505 (SIC Required; SIC limitation is required)	EMB-505	4.77	6
Learjet Inc.	23, 24, 24A, 24B, 24D, 24E, 24F, 25, 25B, 25C, 25D, 25F, 28, 29, 31, 31A, 35, 35A, 36, 36A 55, 55B, 55C	LR-JET	4.05	7
Textron Aviation Inc.	525, 525A, 525B, 525C (SIC Required) 525, 525A, 525B, 525C (Single Pilot)	CE-525 & CE-525S	3.68	8
Bombardier Inc.	BD-100-1A10 (Challenger 300)	CL-30	3.64	9
Textron Aviation Inc.	MU-300, MU-300-10, 400, 400A, 400T	MU-300, BE-400	3.47	10
Textron Aviation Inc.	750	CE-750	3.46	11
Learjet Inc.	45	LR-45	3.3	12
Textron Aviation Inc.	90, 200, 250, (non-typed) & 200T, 200CT, A200CT, B200C, B200T, B200CT, B200 Model 200 series with Commuter Category STC applied (typed)	BE-200	2.88	13

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Type Certificate Holder	Civil Model Designation	Current Type Rating Designation	% Volume of Training	Final Rank
Yaborã Indústria Aeronáutica S.A.	EMB-135ER, EMB-135LR, EMB-135KE, EMB-135KL, EMB-135BJ, EMB-145, EMB-145ER, EMB-145MR, EMB-145LR, EMB-145XR, EMB-145MP, EMB-145EP	EMB-145	2.86	14
Textron Aviation Inc.	500, 501, 550, S550, 551, 552, 560	CE-500	2.8	15
Bombardier Inc.	CL-600-2B16 (CL-604 variant)	CL-604	2.67	16
Learjet Inc.	60	LR-60	2.37	17
Pilatus Aircraft Ltd.	PC-12-47/E	PC-12-47/E	2.12	18
Dassault Aviation	Mystère Falcon 50 Mystère Falcon 900 Falcon 900EX	DA-50	2.04	19
Textron Aviation Inc.	680, 680A	CE-680	1.87	20
Dassault Aviation	Falcon 2000 Falcon 2000EX	DA-2000	1.81	21
Gulfstream Aerospace LP	Galaxy, Gulfstream 200	G-200	1.53	22
Textron Aviation	Cessna 208 Caravan CE-208		1.49	23
Dassault Aviation	DA-2000DX, DA-2000LX DA-2000EX EASy	DA-2EASY	1.47	24
Gulfstream Aerospace Corporation	GVI (G650)	GVI	1.4	25
Embraer S.A.	EMB-500 (Single Pilot) EMB-500 (SIC Required; SIC limitation is required)	EMB-500	1.31	26
Embraer S.A.	EMB-545, EMB-550	EMB-550	1.3	27
Airbus Helicopters (Eurocopter)[i]	EC135	EC135	0.92	28
Dassault Aviation	Falcon 7X	DA-7X	0.89	29
Dassault Aviation	DA-900DX, DA-900LX DA-900EX EASy	DA-EASY	0.86	30
Textron Aviation Inc.	4000	RA-4000	0.86	31
Textron Aviation Inc.	650	CE-650	0.84	32
Bombardier Inc.	CL-600-1A11 CL-600-2A12 CL-600-2B16 (CL-601-3A and CL-601-3R variants)	CL-600	0.78	33
Gulfstream Aerospace LP	Gulfstream G280	G-280	0.78	34
Sikorsky Aircraft, A Lockheed Martin Company[i]	SK-76	SK-76	0.64	35
Yaborã Indústria Aeronáutica S.A.	EMB-120, EMB-120RT, EMB-120ER, EMB-120FC, EMB-120QC	EMB-120	0.43	36
Gulfstream Aerospace Corporation	G-1159, G-1159A, G-1159B,	G-1159	0.37	37

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Type Certificate Holder	Civil Model Designation	Current Type Rating Designation	% Volume of Training	Final Rank
Honda Aircraft Company LLC	HA-420	HA-420	0.33	38
Gulfstream Aerospace LP	Gulfstream G150	G150	0.32	39
Textron Aviation Inc.	390 (SIC Required) & 390 (Single Pilot)	RA-390 & RA-390S	0.3	40
Leonardo S.p.A.[i]	AB139, AW139	AB-139, AW-139	0.28	41
Bombardier Inc.	BD-700-1A10 BD-700-1A11	BBD-700	0.26	42
The Boeing Company	737-100, 737-200, 737-200C, 737-300, 737-400, 737-500, 737-600, 737-700, 737-700C, 737-800, 737-900, 737-900ER, 737-8, 737-9	B-737	0.25	43
Gulfstream Aerospace LP	1125 Westwind Astra, Astra SPX Gulfstream 100	IA-1125, G-100	0.24	44
Pilatus Aircraft Ltd.	PC-24	PC-24	0.24	45
MHI RJ Aviation ULC	CL-600-2B19 CL-600-2C10 CL-600-2C11 CL-600-2D24 CL-600-2D15	CL-65	0.21	46
Textron Aviation Inc.	1900, 1900C, 1900D	BE-1900	0.2	47
Viking Air Limited	SD3-30, SD3-60, SD3-SHERPA, SD3-60 SHERPA	SD-3	0.19	48
M7 Aerospace LLC (*) when operating in the restricted category and complying with applicable Notes from TCDS A5SW (**) Type rating not required when operating in compliance with Notes 11 and 14 from TCDS A5SW.	SA226-AT (*) SA226-T(B) (*) SA226-TC, SA227-AC, SA227-BC, SA227-AT SA227-CC, SA227-DC, SA227-PC SA227-TT (**)	SA-227	0.17	49
Bell[i]	Bell-430	Bell-430	0.14	50
Textron Aviation Inc.	510 (SIC Required) 510 (Single Pilot)	CE-510 & CE-510S	0.14	51
Gulfstream Aerospace Corporation	GVII-G500 GVII-G600	GVII	0.14	52
Airbus Helicopters (Eurocopter)[i]	EC145	EC145	0.14	53

Type Certificate Holder	Civil Model Designation	Current Type Rating Designation	% Volume of Training	Final Rank
Dassault Aviation	Fan Jet Falcon Fan Jet Falcon Series C Fan Jet Falcon Series D Fan Jet Falcon Series E Fan Jet Falcon Series F Fan Jet Falcon Series G Mystère Falcon 20-C5 Mystère Falcon 20-D5 Mystère Falcon 20-E5 Mystère Falcon 20-F5	DA-20	0.13	54
Sikorsky Aircraft, A Lockheed Martin Company[i]	S-92A	SK-92	0.13	55
Piaggio Aircraft Ltd.	P-180	P-180	0.13	56
Bombardier Inc.	DHC-8-100 Series DHC-8-200 Series DHC-8-300 Series DHC-8-400 Series	DHC-8	0.1	57
Saab AB, Support and Services	340A (SAAB/SF340A) SAAB 340B	SF-340	0.09	58
Bell[i]	Bell-412	Bell-412	0.07	59
Dassault Aviation	Falcon 10	DA-10	0.05	60
Learjet Inc.	75	LR-75	0.05	61
Israel Aircraft Industries Ltd.	1121, 1121A, 1121B, 1123, 1124, 1124A	IA-JET	0.04	62
Bell[i]	Bell-429		0.001	63

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[i] *Note: The standardized curriculum for helicopters to be developed at a later phase and date.*

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