



U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: Recommended Aircraft
Maintenance Practices for
Commercial Air Tour Operators

Date: 1/22/14

AC No: 136-2

Initiated by: AFS-300

Change:

1. WHAT IS THE PURPOSE OF THIS ADVISORY CIRCULAR (AC)? This AC describes maintenance practices that we, the Federal Aviation Administration (FAA), recommend for aircraft that you, a commercial air tour operator, use to perform commercial air tours. (We list these operations in Paragraph 2.) We based these practices, in part, on National Transportation Safety Board (NTSB) safety recommendations. The recommended practices in this AC aren't mandatory and don't constitute a regulation. However, we believe that when properly followed, these practices can increase safety in your operation and reduce the number of maintenance-related air tour accidents.

2. TO WHOM DOES THIS AC APPLY? This AC applies to commercial air tour operators that perform commercial air tours under Title 14 of the Code of Federal Regulations (14 CFR) part 91 and under 14 CFR part 135 with aircraft maintained under § 135.411(a)(1). You should note that 14 CFR part 136, § 136.1 defines a *Commercial Air Tour* as a flight performed for compensation or hire in an airplane or helicopter where a purpose of the flight is sightseeing. Also, § 136.1 defines a *Commercial Air Tour Operator* as any person who performs a commercial air tour.

3. WHY DID WE WRITE THIS AC? This AC addresses recommendations from the Aviation Rulemaking Advisory Committee (ARAC) and NTSB for:

- Commercial air tour operators to establish and maintain a system for continuously analyzing the performance and effectiveness of their inspection and maintenance program. This ensures that all maintenance is performed with the utmost regard for quality and safety. (In this AC, we refer to this system as a maintenance quality assurance (QA) system.)
- Commercial air tour operators to provide formal, model-specific, helicopter maintenance training for their mechanics to ensure an adequate level of competency.

4. WHAT ARE THE CURRENT REGULATORY MAINTENANCE REQUIREMENTS FOR AIRCRAFT THAT COMMERCIAL AIR TOUR OPERATORS USE?

a. Title 14 CFR Parts 91 and 43. Parts 91 and 43 contain the aircraft maintenance requirements for commercial air tour operations conducted under part 91. You should note that these maintenance requirements are the same requirements that apply to aircraft *not* used in passenger-carrying operations for compensation or hire.

b. Part 135. Maintenance requirements for aircraft used to perform commercial air tours under part 135, with aircraft maintained under § 135.411(a)(1), are essentially the same as those that apply to part 91. However, under part 135, you must also comply with the following sections:

- Section 135.415, Service Difficulty Reports;
- Section 135.417, Mechanical Interruption Summary Report;
- Section 135.421, Additional Maintenance Requirements; and
- Section 135.422, Aging Airplane Inspections and Records Reviews for Multiengine Airplanes Certificated with Nine or Fewer Passenger Seats. (Multi-engine scheduled service.)

NOTE: Not applicable to aircraft operated within the State of Alaska.

c. Requirements for Mechanics and Maintenance. Regardless of the operating rule under which you conduct air tours, we have no requirements for aircraft model-specific training for mechanics, or a maintenance QA system. Also, we have no aircraft maintenance requirements in the air tour rule described in part 136.

5. HOW CAN I FOLLOW THE RECOMMENDATION FOR AIRCRAFT MODEL-SPECIFIC TRAINING IF REGULATIONS DON'T REQUIRE IT?

a. Finding a Qualified Mechanic. Although we don't have regulatory requirements for aircraft model-specific training for mechanics, there still are mechanics who have this training. If you don't employ and train your own qualified mechanic, you'll have to find one with the recommended training

(1) Manufacturer's Authorized Service Center. You're likely to find a qualified mechanic with the recommended training at a manufacturer's authorized service center. Some aircraft manufacturers require or provide factory aircraft training on their products to mechanics as a condition for obtaining the service center authorization. Some aircraft manufacturers list their authorized service centers on their Web site and include applicable aircraft models, or they'll provide this information if contacted. Once you find an acceptable service center, you should take the extra step to ensure the mechanic performing the work on your aircraft has the recommended training. If asked, maintenance providers and mechanics should be willing to provide information about training and experience.

(2) Certificated Repair Stations (CRS). You might also find a qualified mechanic with the recommended training at a CRS. (You should note that some manufacturer's service centers are CRS.) However, while a repair station must have an approved training program, it may or may not include aircraft model-specific training for the mechanic working on your aircraft. We recommend that you inquire about the training for the mechanic that will work on your aircraft.

b. Other Qualifications. You should note that aircraft model-specific training is only one factor in judging a mechanic's qualifications. You should also consider experience and skill. Additionally, there are different types of training, such as manufacturer's training, on-the-job training (OJT), and third-party training. There are also aircraft systems training, engine training,

and specialized training. Regardless of the training the mechanic receives, it should apply to the aircraft make/model and the work that you need performed.

6. HOW CAN I FOLLOW THE RECOMMENDATION FOR A MAINTENANCE QUALITY ASSURANCE SYSTEM?

a. Required Inspection. Conducting *required inspection* is one simple but effective method you can use to control maintenance errors. The basic idea for this practice is for a qualified mechanic who didn't perform any of the work involved to inspect the work of another qualified mechanic. You perform a required inspection on *items of maintenance* that could result in a failure, malfunction, or defect that endangers the safe operation of an aircraft if not performed properly or if improper parts or materials are used.

NOTE: You shouldn't confuse *required inspections* with the inspection that parts 43 and 91 require. A *required inspection* is a focused inspection following maintenance on critical systems or components described in paragraph a above. Inspections, as used in parts 91 and 43, refers to inspections listed in § 91.405.

(1) Identifying Required Inspection Items (RII).

(a) To conduct required inspections, you'll first have to identify what qualifies as a RII. For example, because the items below meet the criteria for a required inspection, they might be on your required inspection list:

1. Maintenance performed on:
 - A helicopter flight control system,
 - A helicopter tail rotor drive system,
 - A helicopter main rotor drive system, and
 - A helicopter transmission mount assembly;
2. Powerplant installation on helicopters;
3. Replacement of helicopter landing gear assembly;
4. Engine or propeller installation on single-engine, fixed-wing aircraft; and
5. Replacing and rigging flight controls (fixed-wing aircraft).

(b) Some manufacturers incorporate required inspection-like items into their aircraft maintenance manual procedures. You can verify this by either reviewing the manual or contacting the aircraft manufacturer. If the manufacturer doesn't include required inspection items in its maintenance manual, you should ask the manufacturer to help you identify the aircraft systems or components that fall into this (critical) category.

1. Information for the Mechanic. Once identified, you'll need to provide the list to your maintenance provider and request they perform and record the required inspection. You

might need to explain that the required inspection, although not required by regulation, is a standard you have set for maintenance on your aircraft. You might also need to explain the required inspection concept to your maintenance provider or mechanic. Although written primarily for air carriers using a Continuous Airworthiness Maintenance Program (CAMP), the current edition of AC 120-16, Air Carrier Maintenance Programs, Chapter 7, provides information on the required inspection concept. However, we wouldn't expect a small commercial air tour operator to have the same level of detail in its required inspection program that an air carrier has in its program.

b. Document Reviews. Another QA practice you can use in your operation is a review of all the paperwork and maintenance records produced during the inspection or maintenance visit.

(1) Section 91.405(b) requires you to ensure that maintenance personnel make appropriate entries in the aircraft maintenance records indicating your aircraft has been approved for return to service. Section 43.5 contains the regulatory requirements for the approval for return to service following maintenance, preventive maintenance, rebuilding, or alteration. Additionally, you should ensure that the maintenance provider accomplished the applicable additional performance requirements for inspections, as stated in § 43.15.

(2) Your careful review of the paperwork and maintenance records produced during an inspection or maintenance visit allows you to meet your responsibilities for ensuring aircraft airworthiness that §§ 91.403(a) and 135.413(a) require. Reviewing the documents also allows you to ensure the work performed is complete and accurate before you operate the aircraft. Finally, it provides you with a list of maintenance items to focus on when performing your preflight inspections

7. ARE THERE ANY INDUSTRY GROUPS OR ORGANIZATIONS THAT CAN HELP ME RAISE THE LEVEL OF SAFETY FOR MY COMMERCIAL AIR TOUR OPERATION?

a. Industry Organizations. You can join an industry organization that offers support and services, and promotes safety in the air tour industry. These organizations provide members with support and services that include maintenance standards for an operator to meet. They also conduct audits to verify an operator meets the standards. Two organizations that support commercial air tours are Tour Operators Program of Safety (TOPS) and Helicopter Association International (HAI).

b. FAA Resources. You can also participate in our FAA Safety Team (FAASTeam) seminars, which you can find at: <https://www.faasafety.gov/SPANS/events/EventList.aspx>

8. WHY SHOULD I FOLLOW MAINTENANCE PRACTICES THAT AREN'T REGULATORY?

a. NTSB Recommendations. In 1995, the NTSB recommended that the FAA bring all commercial air tour flights under part 135 requirements. This didn't occur because of the overwhelming opposition to the Notice of Proposed Rule Making (NPRM). The final rule did, however, include a new part (part 136) that added new requirements for commercial air tour

operations. However, the NTSB was still concerned because the part 136 requirements didn't address all identified safety issues, one of which was aircraft maintenance.

b. High-Risk Operations. In its 2010 report to Congress on FAA Oversight of On-Demand Aircraft Operations, the Department of Transportation (DOT) Office of the Inspector General (OIG) described commercial air tour operations as high-risk because of the operating environment. The OIG noted that despite the high risk, the regulations allowed some commercial air tour operators to fly for hire under part 91, which are the regulations associated with general aviation (GA). There are roughly 1,300 commercial air tour operators authorized to conduct commercial air tours under § 91.147. Also, many more commercial air tour operators perform air tours under § 91.146 and part 135.

c. Lowering the Number of Accidents. Even though there has been an overall decline in air tour accidents, the *total* number of accidents is significantly higher than air carriers operating under parts 121 and 135 as commuters. To lower the total number of accidents, commercial air tour operators will have to look for ways to increase the level of safety in their operations. This AC presents one way for you to take an active part in increasing safety in your maintenance operations.

9. WHERE CAN I SEND COMMENTS AND QUESTIONS REGARDING THIS AC?

For comments and questions concerning this AC, contact the Air Carrier Maintenance Branch (AFS-330) at (202) 385-6426 or write to:

Federal Aviation Administration
Aircraft Maintenance Division
Air Carrier Maintenance Branch, AFS-330
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/s/

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