VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 6 ISSUE A CERTIFICATE OF WAIVER OR AUTHORIZATION FOR AN AVIATION EVENT

Section 1 Issue a Certificate of Waiver or Authorization for an Aviation Event

3-141 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

A. Issue Certificate of Authorization (CoA). Enter "1220" in the "Activity Code" field of the PTRS record and enter "PA" in the "National Use" field if the CoA was issued for parachute demo and "RL" for rocket launch.

B. Issue Certificate of Waiver (CoW). Enter "1230" in the "Activity Code" field, and in the "National Use" field of the PTRS record, enter "BE" for balloon event, "AS" for air show, "AR-XC" for a cross-country air race or "AR-CC" for closed-course air race, "UAS" for Unmanned Aircraft Systems (UAS) demonstrations, "FO-M" for Flyover military.

NOTE: This chapter does not address or include aerobatic competitions or aerobatic practice areas (APA) (see Volume 3, Chapters 5 and 9). Aerobatic competitions are typically conducted in an exclusive environment; the general public is not invited.

C. Complete DD Form 2535, Request for Military Aerial Support. Enter "1231" in the "Activity Code" field and enter "CoW/AI" for Certificate of Waiver or Authorization (CoW/A) issued or "NCoW/A" for no CoW/A issued, entered into the "National Use" field, and note in comments if "unsatisfactory," "satisfactory," or "conditional satisfactory," as appropriate.

NOTE: The reference to "military" includes the following U.S. Armed Forces branches: Air Force, Army, Coast Guard, Marine Corps, and Navy.

D. Complete Aviation Event Flight Standards District Office (FSDO) Checklist. The inspector-in-charge (IIC) must complete the applicable sections of the Aviation Event FSDO Checklist (available on the Federal Aviation Administration (FAA) National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/) as you progress through the issuance of a CoW or CoA process. When each portion of the checklist is completed, place in the FSDO file. When you finish conducting the surveillance of the aviation event you will complete the remainder of the checklist and return it to the FSDO file (see Figure 3-202, Sample Aviation Event FSDO Checklist).

3-142 OBJECTIVE.

A. Task. This section's task is to determine whether to issue FAA Form 7711-1, Certificate of Waiver or Authorization, to an applicant for an aviation event. Completion of this task results in the issuance of a CoW or CoA or the disapproval of FAA Form 7711-2, Application for Certificate of Waiver or Authorization. FAA Form 7711-2 and FAA Form 7711-1 are multipurpose forms. It should be noted that for aviation events a CoW and a

CoA (FAA Forms 7711-2 and 7711-1) should be processed independently of one another, not combined. See the flowchart below (Figure 3-23, CoW/A Issuance and Oversight Procedures Flowchart) for the issuance of a CoW/A and oversight procedures.

NOTE: Appropriate CoW/As or Letters of Authorization (LOA) in the Web-based Operations Safety System (WebOPSS) may be used in lieu of FAA Form 7711-1. See subparagraph 3-158G for more information.

NOTE: See Figure 3-26, Timelines and Coordination for an Application for Certificate of Waiver or Authorization, for more information. The referenced timelines in subparagraph 3-142B are authorized by this policy to supersede the 45-day timeline requirement referenced on FAA Form 7711-2.

B. Timelines and Coordination for an Application for CoW/A. The event organizer must submit applications (FAA Form 7711-2) for a CoW for air shows, balloon events, or air races at least 90 days before the date of the event; 120 days is recommended. An application for a flyover (military) should be submitted 45 days before the date of the event. Approval of the application will be completed only after the event organizer has met all requirements. Within 30 days of receipt by the FSDO, the FSDO must notify the event organizer of any discrepancies or omissions. Notification of approval or disapproval must be completed 30 days prior to the event. It is preferable the CoW be issued 30 days prior to the aviation event. In all cases, all approved CoWs must be issued at least 15 days prior to the aviation event.

1) Submit applications (FAA Form 7711-2) for CoA for a parachute demonstration made over or into a congested area or open-air assembly of people at least 10 business-days before an event. Completion of an application's approval or disapproval must be done within 5 business-days of receipt by the FSDO. All approved CoAs must be issued at least 5 business-days prior to the requested parachute demonstration.

2) Submit applications (FAA Form 7711-2) for a CoA for a rocket launch at an aviation event to the jurisdictional Air Traffic Organization (ATO) facility at least 120 days prior to the aviation event. This CoA is processed in accordance with Title 14 of the Code of Federal Regulations (14 CFR) part 101 and coordinated through ATO and the Office of Commercial Space Transportation (AST). Adhering to timelines is necessary to allow for a safety analysis to be conducted by AST and ATO to process the CoA for a rocket launch. All approved CoAs for a rocket launch must be issued by ATO and submitted to the FSDO at least 30 days prior to the aviation event where the launch will be conducted.

3) Direct event organizers requesting a UAS (public or civil) demonstration or operation at an aviation event to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for detailed procedures at least 120 days prior to the aviation event. All required documents for UAS demonstrations or operations at an aviation event must be issued and submitted to the FSDO at least 30 days prior to the aviation event.

4) Submit applications (FAA Form 7711-2) for an APA or Aerobatic Competency Evaluation/Practice (ACE/P) operation:

a) For short-term (less than 30 days in duration) aerobatic practice areas (STAPA), at least 60 days prior to the aviation event. Approval of the application should be completed by the assigned General Aviation (GA) Operations aviation safety inspector (ASI)/IIC only after the event organizer or sponsor has met all requirements. Within 30 days of receipt by the FSDO, the FSDO must notify the event organizer or sponsor of any discrepancies or omissions. Thirty days prior to the event, the event organizer must be notified of approval or disapproval, or issuance of the CoW. All approved CoWs should be issued at least 15 days prior to the aviation event or the date requested.

b) For long-term (more than 30 days and less than 36 months in duration) aerobatic practice areas (LTAPA), at least 90 days before date requested or, for renewals, the expiration date on a current CoW. Approval of the application will be completed by the assigned GA Operations ASI/IIC only after the event organizer or sponsor has met all requirements. Within 30 days of receipt by the FSDO, the FSDO must notify the event organizer or sponsor of any discrepancies or omissions. Thirty days prior to the event, the event organizer must be notified of approval or disapproval, or issuance of the CoW. All approved CoWs should be issued at least 15 days prior to the date requested or the date the current CoW expires.

1. LTAPAs require environmental considerations in accordance with FAA Order 1050.1, Environmental Impacts: Policies and Procedures. Submit the Environmental Information Document (EID) (found at https://www.faa.gov/about/initiatives/airshow/media/EID_fillable.pdf) with the application (FAA Form 7711-2) at least 90 days prior to either the date requested or the expiration date on the current CoW.

2. The FSDO will submit the EID to the General Aviation Operations Branch within 15 business-days of receipt. Response to the FSDO on the status of an EID should be completed 30 days prior to the date requested or the date the current CoW expires.

c) There are multiple steps leading up to the issuance of a CoW for an ACE/P to the Recognized Industry Organization (RIO). Those steps are not included in the timeline referenced in Figure 3-26. The applicant should see the requirements established in Volume 3, Chapter 9, Section 1.

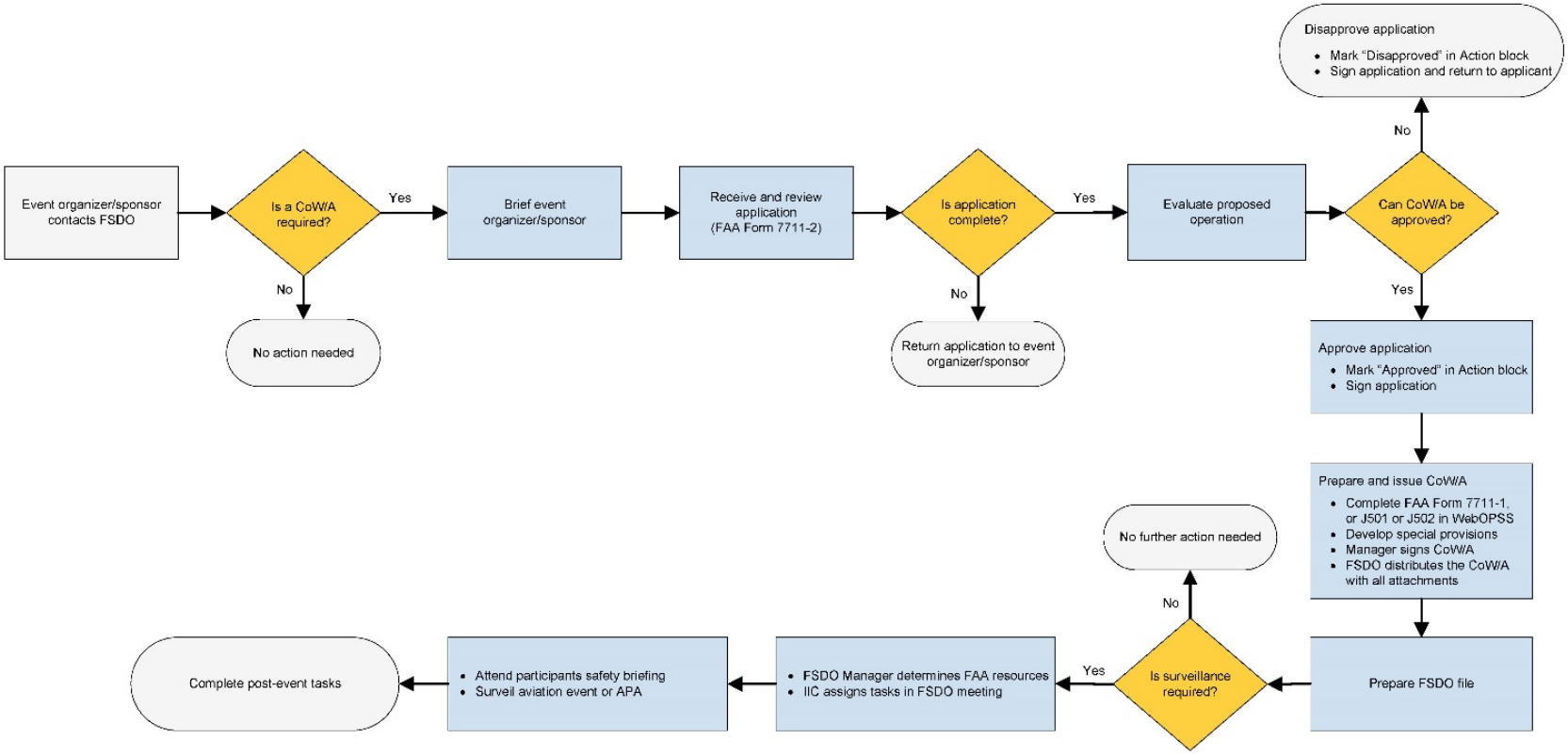
1. At least 15 days before the requested date of the ACE/P operation, the General Aviation Operations Branch issues a CoW for the ACE/P operation and accepts the ACE/P Operations Manual.

2. The authorized ACE/P aerobatic competency evaluator (ACE) submits the Plan of Activities (POA), ACE/P Operations Manual, and ACE/P CoW to the FSDO at least 10 business-days before the requested date of the ACE/P operation. This deadline may be reduced to 3 business-days with FSDO concurrence.

3. The FSDO documents any discrepancies and coordinates with the ACE/P ACE who submitted the POA to resolve them. No further action is necessary if no discrepancies are identified.

NOTE: Direct the event organizer to the responsible FSDO at https://www.faa.gov/about/office_org/field_offices/fsdo/.

Figure 3-23. CoW/A Issuance and Oversight Procedures Flowchart



3-143 DEFINITIONS. Many terms used in this chapter are unique to aviation events; therefore, the following definitions should enhance the understanding of their application:

NOTE: Where they appear in this section, the terms "Aircraft Rescue and Fire Fighting (ARFF)," "Crash, Fire and Rescue," "Emergency Medical Services (EMS)," and "Law Enforcement/Security (LE/S)" are used to refer generically to the corresponding capabilities.

A. Aerobatic Box. The airspace within the demonstration area and flying display area at an air show where participating aircraft are authorized to perform aerobatic maneuvers appropriate to their category (see Figure 3-27, Air Show Fly Zones Relative to Airspace). This box defines the appropriate Category I/II/III show line (Figures 3-33–3-37 and Figures 3-38–3-41) and begins at the surface. Aerobatics performed outside of the aerobatic box are limited to repositioning maneuvers defined in subparagraph 3-148J.

B. Aerobatic Flight. When participating in accordance with the provisions of a CoW for an aviation event, single and formation aircraft are defined as aerobatic maneuvering when the pitch attitude of that aircraft is greater than 60 degrees above or below the horizon and/or the angle of bank is greater than 75 degrees in reference to the horizon. The definition in 14 CFR part 91, § 91.303 does not apply. Therefore, an event organizer should always include a request to waive the applicable portion(s) of § 91.303 that defines aerobatic flight in their request for a CoW.

C. Air Boss. The individual who, under operational authority delegated to him or her by the responsible person, has primary responsibility for control of air show operations (does not include transient or nonparticipating aircraft) on the active taxiways, runways, and the air show demonstration area for coordination with the jurisdictional air traffic control (ATC) facility and the IIC while the CoW and associated Class D Notice to Airmen (NOTAM) or temporary flight restriction (TFR) is in effect. The air boss is responsible for the documentation of procedures between ATC and the air boss establishing the transition of airspace and control of participating and nonparticipating aircraft. The air boss is delegated the primary responsibility for preparation and presentation of a daily Participants Safety Briefing.

D. Air Boss Letter of Authorization (LOA). A valid FAA air boss LOA, issued by the FAA in accordance with Volume 5, Chapter 9, Section 6, to a recognized air boss at an aviation event (air show only) delegated primary responsibility for control of air show operations after demonstrating competency to an industry air boss evaluator (ABE) authorized under an FAA-accepted Air Boss Recognition Program (ABRP). FAA RIOs that developed the ABRP will provide internet access to a current list of ABEs and recognized air bosses issued an LOA. (Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for a link.)

NOTE: After January 1, 2019, prior to acting as an air boss at an air show issued a CoW, an air boss designated for an air show must comply with the phased documentation procedures for the issuance of an FAA air boss LOA established on the FAA National Aviation Events Program website at

https://www.faa.gov/about/initiatives/airshow/. After January 1, 2020, an air boss must be issued a current and valid LOA and must attach a copy of the LOA to the FAA Form 7711-2 for the event.

E. Air Race (Cross-Country and Closed-Course). An aviation event that involves two types of competitive air racing:

1) A closed-course race at a specific location defined by pylons placed on the racecourse (e.g., National Championship Air Race (NCAR) or Red Bull Air Race (RBAR)); or

2) A cross-country race with pre-set checkpoints along the racecourse route (e.g., Air Race Classic).

NOTE: An applicant (except UAS operated under part 101 or part 107) for a closed-course air race must be FAA accredited in accordance with the requirements established in Volume 3, Chapter 6, Section 2 prior to issuance of a CoW for an air race. UAS operated under part 101 or part 107 do not require a CoW for an aviation event when conducting a closed-course air race.

F. Air Show. An aviation event defined as an aerial demonstration/performance by one or more aircraft, which may also include a UAS, rocket, parachutist, or ultralight vehicle, before an invited assembly of persons. A rocket launch, parachute or UAS (civil or public) demonstration held in conjunction with an air show must be issued a CoA.

G. Airworthiness Certificate. For the purpose of this chapter, the terms “airworthy” or “Airworthiness Certificate” refer to more than just the United States and International Civil Aviation Organization (ICAO) Member States’ standard airworthy aircraft. For a U.S.-registered experimental aircraft this would be a Special Airworthiness Certificate, which must be accompanied by operating limitations. Foreign-registered experimental aircraft must be operated in accordance with Chapter V of the Convention on International Civil Aviation, 14 CFR part 375 subpart B, and § 91.203(a)(1): “No person may operate a civil aircraft of foreign registry unless it contains current certificates of registry and airworthiness (standard) issued or rendered valid by the country of registry, or a special flight authorization issued in accordance with § 91.715,” allowing aviation event operations in U.S. airspace. Refer to FAA Order 8130.2, Airworthiness Certification of Aircraft, for issuance of an aviation event special flight authorization and the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for the expanded procedure.

H. Altimeter Setting. Many performers, racers, and jump aircraft may wish to set their altimeters to zero while on the ground to measure height above ground during their performance. This may require a waiver of § 91.121. The IIC should waive § 91.121 for any event where aircraft involved in that event are departing from a runway at that location. This does not require the affected aircraft to set their altimeter(s) to zero but gives the pilot the option to do so.

I. Approved Maneuver. A General Aviation and Commercial Division-approved maneuver or a series of maneuvers. These may include flight over the designated spectator area(s) below 1,000 feet above ground level (AGL), higher speeds for military airplanes, or a

maneuver that may involve energy directed at the primary spectator area that meets safety criteria for an air show (see subparagraph 3-148L).

J. Aviation Event. Aviation events include air shows, aerobatic competitions, closed-course air races, cross-country air races, parachute demonstrations, balloon events, flyovers, and fly-ins conducted before an invited assembly of persons, for which the FAA issues a CoW or CoA or determines no further action is needed.

NOTE: This chapter does not address or include aerobatic competitions or APAs (see Volume 3, Chapters 5 and 9).

NOTE: This chapter does not include policy for civilian flyovers (see Volume 3, Chapter 12, Section 5).

K. Aviation Event Demonstration Area. The total airspace (lateral and vertical limits) identified by the CoW/A, TFR, or the NOTAM issued for an aviation event (sometimes referred to as the waivered airspace). (See Figure 3-28, Example of an Air Show Demonstration Area.)

L. Aviation Event Maneuvering. Maneuvers performed while participating in accordance with the provisions of a CoW for an aviation event. Maneuvers performed at an aviation event require different levels of endorsement and are categorized and defined below.

NOTE: Military pilots require command approval and the applicable level of FAA approval (see paragraph 3-149).

1) Aerobatic Maneuvering. Requires a Statement of Aerobatic Competency (SAC) with an aerobatic maneuvering endorsement for civilian pilots (see subparagraph 3-146B).

a) In a solo flight, aerobatic maneuvering is when the pitch attitude of the aircraft is greater than 60 degrees above or below the horizon and/or the angle of bank is greater than 75 degrees in reference to the horizon.

b) In a formation flight, aerobatic maneuvering is when the pitch attitude of an aircraft is greater than 60 degrees above or below the horizon and/or the bank angle is greater than 75 degrees to the horizon.

2) Dynamic Maneuvering. Requires a SAC with a dynamic maneuvering endorsement for civilian pilots (see subparagraph 3-146B).

a) In a solo flight, dynamic maneuvering includes abrupt maneuvering, crossing maneuvers, and opposing maneuvers. The pitch and bank limitations are when the pitch attitude of the aircraft is less than or equal to 60 degrees above or below the horizon and/or the bank angle is less than or equal to 90 degrees in reference to the horizon.

b) In a formation flight, dynamic maneuvering includes formation separation, formation configuration/position changes, rejoins, crossing maneuvers, and opposing maneuvers. The pitch and bank limitations are when the pitch attitude of the aircraft is less than or equal to

60 degrees above or below the horizon and/or the bank angle is less than or equal to 75 degrees in reference to the horizon.

NOTE: Solo maneuvers conducted after a formation has separated may be performed within the Dynamic Maneuvering–Solo limitations.

3) Standard Maneuvering. Formation flight requires an industry formation credential for civilian pilots (see subparagraph 3-146D).

a) In a solo flight, standard maneuvering includes non-abrupt maneuvering and flybys. The pitch and bank limitations are when aircraft pitch attitude of the aircraft is less than or equal to 60 degrees above or below the horizon and/or the bank angle is less than or equal to 75 degrees in reference to the horizon.

b) In a formation flight, standard maneuvering includes non-abrupt maneuvering, flybys, formation configuration/position changes, and missing-man formation, and the flight may not separate inside the flying display area, except to break for landing or flyby. The pitch and bank limitations are when the aircraft pitch attitude of the aircraft is less than or equal to 45 degrees above or below the horizon and/or the bank angle is less than or equal to 60 degrees in reference to the horizon.

NOTE: Any aircraft conducting aerobatic, dynamic, or standard maneuvering towards the primary spectator area must also comply with the provisions of subparagraph 3-148L.

Figure 3-24. Aviation Event Maneuvering Chart

SAC – Statement of Aerobatic Competency FAA Form 8710-7				Formation Credential – FAST/FFI			
DMF – Dynamic Maneuvering - Formation DMS – Dynamic Maneuvering - Solo AF – Aerobatics - Formation AS – Aerobatics - Solo				FAST – Formation and Safety Training FFI – Formation Flying Inc.			
Formation Maneuvering				Solo Maneuvering			
	Standard Maneuvering	Dynamic Maneuvering	Aerobatic Maneuvering		Standard Maneuvering	Dynamic Maneuvering	Aerobatic Maneuvering
FAST/FFI	Pitch ≤45° and/or Bank ≤60°			No Credential	Pitch ≤60° and/or Bank ≤75°		
SAC + DMF		Pitch ≤60° and/or Bank ≤75°		SAC + DMS		Pitch ≤60° and/or Bank ≤90°	
SAC + AF			Pitch >60° and/or Bank >75°	SAC + AS			Pitch >60° and/or Bank >75°

M. Balloon Event Flightcrew Member. A flightcrew member, other than the pilot, who is carried on board the balloon during the competition flight event and meets the requirements set forth in the FAA-accepted balloon competition manual. Balloon event flightcrew members are differentiated from ground support launch and recovery crewmembers.

N. Balloonmeister (e.g., Event Director, Championship Director). The person at a balloon event or competition who is responsible for the safety and decisions of ground-based balloon activities and has operational control of all flight activity.

O. Certificate of Authorization (CoA), FAA Form 7711-1. An official document issued by the FAA to permit certain activities that require FAA approval under conditions that ensure an equivalent level of safety, but that does not waive any regulations, for example, parachute demonstrations (14 CFR part 105), rocket launches (part 101), or UAS (part 107/part 101). A parachute demonstration issued a CoA may be held in conjunction with any aviation event.

P. Certificate of Waiver (CoW), FAA Form 7711-1. An official document issued by the FAA that authorizes certain operations of aircraft to deviate from a regulation but under conditions that ensure an equivalent level of safety. Section 91.905 lists the sections of part 91 that can be waived (see Figure 3-203, Sample List of Waived Regulations for Aviation Events).

Q. Chase Crew. Personnel that assist the pilot in launching a balloon, following it in a vehicle, and retrieving and packing the balloon. Most balloon pilots use a crew of three to four persons to safely inflate and retrieve the aircraft.

R. Civil Twilight. Civil twilight in the evening is the time between sunset and when the center of the sun is less than 6 degrees below the horizon (see subparagraph 3-148M).

S. Control Point. A specified location where the event organizer, a designated representative, or an air boss manages the aviation event. The control point must have a communication system (backup system) with the capability necessary to control the aviation event.

T. Corner Markers. An easily identifiable marker or landmark from the air, 500 feet or more right and left of primary spectator area along the crowd line from the primary spectator area to provide flybys and performers a 500-foot reference for proper separation from spectators (see Figure 3-29, Example of an Air Show Layout (ARFF/Crash, Fire and Rescue); Figures 3-33 through 3-41; and Figure 3-45, Typical Arc-In Review or Banana Pass).

NOTE: Markers that may be hazardous to aircraft operations should not be placed on runways, taxiways, or any other operational area. This includes the X on the end of runways to denote runway closure. Place them in a safe area adjacent to the designated spot.

U. Critical Aircraft. That aircraft closest to the primary spectator area in a formation flight.

V. Crowd Line. A physical barrier or a line marked on the surface of the ground or water that serves as a restraining line for designated spectator areas and provides the appropriate safety distances from the aerobatic box and/or show line for an aviation event.

W. Emergency Preparedness and Security.

1) Emergency Response Plan (ERP). A written document that, in a manner appropriate to the size and complexity of the aviation event, describes how the organizations presenting and supporting the event will respond to protect people and property in an emergency that affects performers, essential personnel, or spectators at an aviation event (see subparagraph 3-154B). An ERP is a comprehensive, operations-level plan that communicates to personnel what should happen in an emergency, why it is done, and what to expect from it; sets forth lines of authority and organizational relationships and explains how functions and activities are to be coordinated; delineates roles and responsibilities for carrying out response actions; and identifies personnel, apparatus, equipment, supplies, facilities, and other resources and explains where and how resources are obtained and managed. An ERP does not typically provide details on the tactical deployment and utilization of resources in specific incidents, which are found in the event's Incident Action Plan (IAP) (defined in subparagraph 2) below).

NOTE: The term "emergency" in this section assumes a "common and predictable" emergency that may occur at an aviation event for which a risk-based approach to manage the emergency is established. The FAA Aviation Event Risk Tool (AvERT) on the FAA National Aviation Events Program website (https://www.faa.gov/about/initiatives/airshow/) is developed to capture many "common and predictable" types of emergencies that can be expected during an aviation event.

2) Incident Action Plan (IAP). A written document that establishes incident management objectives, lists emergency response resources, describes tactics, and communicates critical supporting information for protecting people and property in an emergency that affects performers, essential personnel, or spectators at an aviation event (see subparagraph 3-154B). In contrast to the ERP, the IAP is an incident-focused, execution-oriented plan that details the tactical deployment and utilization of resources to achieve specific response objectives within specified timeframes. An IAP approved by the entities it encompasses is a required companion document to the ERP for all aviation events issued a CoW/A.

3) Announced Emergency. An emergency that occurs at an aviation event during the period of time when the CoW/A is in effect and participating aircraft are flying. (See the related term "Unannounced Emergency.")

4) Unannounced Emergency. An emergency that occurs at an aviation event during the period of time beginning with the arrival of the first public spectator, before the CoW/A is in effect until after the last public spectator has departed the venue and the CoW/A is no longer in effect, or when the CoW/A is in effect and participating aircraft are not flying. (See the related term "Announced Emergency.")

5) Security Plan. A written document that establishes the methods that will be used to ensure the areas outside of the designated spectator area(s), especially the area under the flying display area, are secure and, where required, sterile. A security plan acceptable to the FAA is required for all aviation events issued a CoW/A (see subparagraph 3-154C).

X. Essential Personnel. Individuals authorized to access the flying display area during an aviation event (see subparagraphs 3-146F and 3-151J).

Y. Event Organizer. The person or agency responsible for the organization and conduct of the aviation event.

Z. Flyby. A pass or a series of passes, performed by one or more aircraft while in the flying display area before an invited open-air assembly of persons while a CoW for an aviation event is in effect. The flyby must be performed in accordance with Table 3-6, Flyby Requirements and Limitations.

AA. Flying Display Area. The airspace at an aviation event where participating aircraft, UAS, and rockets have authorization to perform under a CoW/A. This area begins at the surface and includes the racecourse area, aerobatic boxes, and show lines, but does not include ingress/egress routes.

BB. Flyover. A non-maneuvering pass or a series of non-maneuvering passes performed by one or more aircraft over an open-air assembly of persons temporarily gathered at an event (e.g., stadiums, civic events, and funerals). (See paragraph 3-149 for military flyovers and paragraph 3-153 for civilian flyovers.)

CC. Formation Flight. When two or more aircraft under the command of a flight leader are flown solely with reference to another aircraft and are within 500 feet of the referenced aircraft.

1) Formation Separation. Aircraft separate into solo flight or multiple formations (e.g., bomb-burst, 8-ship to two 4-ships, or 4-ship to two 2-ships).

2) Formation Configuration/Position Change. Aircraft maintain formation while maneuvering to a new formation configuration (e.g., Fingertip to Diamond) via the movement or repositioning of one or more aircraft within the flight (e.g., aircraft #4 moves from outside right wing to slot).

NOTE: Formation separation in the flying display area and formation configuration/position change is authorized during formation dynamic maneuvering. Formation configuration/position change is authorized during formation standard maneuvering. (See subparagraphs 3-143L and 3-146A and B.)

NOTE: Air racing, aircraft circling the jumpers, and simulated dogfighting are not considered formation flight. Neither the tow plane nor the aircraft/ultralight being towed is considered to be in formation flight.

DD. Ingress/Egress Routes. Those routes used by air show performers to enter and exit the flying display area.

EE. Inspector-In-Charge (IIC). The FAA ASI who has primary FAA responsibility for the aviation event (see subparagraph 3-144C).

FF. In-Trail. A solo aircraft or aircraft in formation that are flown solely with reference to another solo aircraft or formation and are more than 500 feet from the referenced aircraft or formation (e.g., during a parade overflight, a flyby, or a racetrack pattern of flybys).

GG. Launch Directors (Balloon Events). Event personnel who:

- Communicate with pilots prior to and during launch via verbal or accepted visual signals to direct preparation, inflation, and launch activity;
- Clear balloons for takeoff;
- Direct crowd management during launches and special events; and
- Advise safety officials of matters pertaining to balloon safety, including airworthiness and airmanship.

HH. Markers (Balloons). Markers used in balloon competition tasks for dropping or marking targets are small weighted bags, with a maximum weight of 3 ounces and a fabric tail 4 inches wide and 6 feet long. The international standard for markers is 77 grams maximum weight, with a tail 10 centimeters wide and 170 centimeters long. Markers made to this specification should not injure persons or damage property.

II. Military Jet Demonstration Teams. The U.S. Department of Defense (DOD)- or Canadian Department of National Defence (DND)-sanctioned North American Military demonstration teams are the United States Air Force (USAF) Thunderbirds, the United States Navy (USN) Blue Angels, and the Canadian Forces Snowbirds.

JJ. Military Single-Ship Demonstration Teams. A DOD- or DND-sanctioned demonstration team that consists of single aircraft conducting flybys, flyovers, or aerobatic demonstrations of current military fighter aircraft.

KK. Multiple Aircraft. More than one aircraft in the flying display area at the same time (e.g., squirrel cage, dogfighting, or crossing maneuvers) maintaining separation and de-confliction from one another. Multiple aircraft maneuvering must be performed in accordance with subparagraph 3-146C.

LL. Night. Night means the time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time (see subparagraph 3-148M).

MM. Official Photographers. Photographers or videographers designated by the responsible person as essential personnel to be in designated surface areas of the flying display area while active during an aviation event (e.g., air show or air race) (see subparagraphs 3-146F and 3-151J).

NN. Participant. Any individual specifically involved with, or directly participating in, the aviation event or APA issued a CoW/A (see subparagraphs 3-146F and 3-151J).

OO. Performer. One who demonstrates a skill, requiring qualification for the performance, in an aerial demonstration before an invited assembly of persons. This includes, but is not limited to, aircraft pilots, UAS operator/pilots, parachutists, and rocket operators.

PP. Primary Spectator Area. The main area designated by and under the control of the event organizer for spectator use. The crowd line creates its boundary and has well defined lateral limits (ends). This is the area, which begins at the surface, from which the public is directed to view the aviation event and should be aligned (parallel) with the show lines. There may be more than one primary spectator area.

QQ. Recognized Industry Organization (RIO). A RIO is an organization that has created an FAA-accepted industry program (e.g., ABRP, Aerobatic Competency Evaluation Program (ACE Program), or formation program) that has been recognized by the FAA.

RR. Responsible Person. The event organizer for the event is responsible for all aspects and special provisions of the CoW/A. This may also be a person designated by the event organizer and listed on the FAA Form 7711-2. This person must be acceptable to the CoW/A-issuing FSDO as being knowledgeable concerning the terms and provisions of the CoW/A for this aviation event. The responsible person(s) will be accountable to the FAA for the safe conduct of the aviation event.

SS. Rockets. Rockets are defined under part 101 and are categorized as Class 1, 2, or 3.

TT. Secondary Spectator Area(s). Any area, not designated as a primary spectator area, where people have a natural tendency to gather to observe the aviation event. This includes, but is not limited to, private property or property not under control of the event organizer, public roads, and private access roads.

UU. Show Center. A visible reference point, typically on the surface, that denotes the center of the flying display area.

VV. Show Line. A line on the surface of the ground or water, marked to be clearly visible to pilots from the air, intended to enhance pilot orientation during the performance or air race. The show line provides the performer with a clear visual reference to the minimum safety distance from the crowd line applicable to the category of the maneuvering aircraft being flown (see subparagraphs 3-148A and C–F).

WW. Stadium (Parachute Demo). Open air athletic fields 150 yards in length by 80 yards in width; or they can be smaller with bleachers, walls, or buildings in excess of 50 feet in height on two or more sides above the landing surface.

XX. Statement of Aerobatic Competency (SAC). A valid FAA Form 8710-7, Statement of Aerobatic Competency (SAC) (or Transport Canada Form 26-0307, Statement of Aerobatic Competency (SAC)) issued by the FAA in accordance with Volume 5, Chapter 9, Section 1 to a pilot performing aerobatics, dynamic maneuvering, or certain other flight operations at an aviation event (air show), after demonstrating competence to an industry ACE authorized under an FAA-accepted industry program. The RIO managing this program will provide internet access to a current list of ACEs and SAC holders. (Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for a link.)

YY. United States Air Force (USAF) Heritage Flight Program. The USAF-approved military and civilian pilots flying formations consisting of USAF, former USAF, and U.S. Army Air Corps aircraft to demonstrate the history of USAF aircraft.

ZZ. United States Navy (USN) Tailhook Legacy Program. The USN-approved military and civilian pilots flying formations consisting of sanctioned USN and former USN aircraft to demonstrate the history of U.S. naval aviation.

AAA. Unmanned Aircraft. An aircraft that is operated without the possibility of direct human intervention from within or on the aircraft. The aircraft could be operated as a public, civil, or model UAS.

1) Unmanned Aircraft Systems (UAS). An unmanned aircraft and associated elements (including communication links and the components that control the unmanned aircraft) that are required for the pilot in command (PIC) to operate safely and efficiently in the National Airspace System (NAS).

2) Small Unmanned Aircraft. An unmanned aircraft weighing less than 55 pounds on takeoff (including everything that is on board or otherwise attached to the aircraft) operated as a public, civil, or recreational UAS.

3) Model Aircraft. The terms “model aircraft” and “UAS (recreational)” are the same for regulatory purposes, and they refer to aircraft that meet the conditions specified in part 101, § 101.41. A model aircraft is an unmanned aircraft that is:

a) Capable of sustained flight in the atmosphere;

b) Flown within visual line of sight of the person operating the aircraft;

c) Flown strictly for hobby or recreational purposes;

d) Operated in accordance with a community-based set of safety guidelines and within the programming of a nationwide community-based organization (CBO);

e) Limited to not more than 55 pounds, unless otherwise certified through a design, construction, inspection, flight test, and operational safety program administered by a CBO; and

f) Operated in a manner that does not interfere with and gives way to any manned aircraft.

NOTE: When flown within 5 miles of an airport, the operator of the model aircraft provides the airport operator and the airport ATC tower (when an ATC facility is located at the airport) with prior notice of the operation.

BBB. Websites. The FAA National Aviation Events Program website is available at https://www.faa.gov/about/initiatives/airshow/. This website will make available documents that are authorized for the current aviation events season, such as links to applicable policy and

guidance (e.g., expanded procedures and checklists), the Aviation Event FSDO Checklist, special provisions, approved maneuvers packages, and General Aviation and Commercial Division LOAs.

3-144 GENERAL.

A. Regulatory Authority. The Flight Standards Service has the authority to grant or deny waivers of the regulations listed in § 91.905; part 107, § 107.205; and those authorized in part 105 for aviation events in accordance with this order. The FSDO that has responsibility for aviation events conducted at the proposed site processes requests for CoW/A. The Flight Standards Service coordinates with appropriate and jurisdictional FAA lines of business (LOB), to include AST, ATO, FAA Airports (ARP), and the UAS Integration Office (AUS) associated with an aviation event requiring a CoA for a rocket launch or UAS demo, a TFR or Class D NOTAM and airspace coordination, or for emergency response planning and ground operation plans at an airport.

1) Scope of Waivers.

a) Waivers of 14 CFR sections and/or subsections and the attendant special provisions may vary in scope depending on the regulations that an event organizer (civilian or military) requests to be waived and will vary depending upon the type of aviation event and the location. Some events require nothing more than waiving § 91.303(e) to permit aerobatic flight at less than 1,500 feet above the surface. Other events that consist of non-closed-course air race events, flybys and static displays may only require waiving sections of part 91 for aircraft speed limitations, minimum safe altitudes, or limitations while operating in the vicinity of airports or within Class B, C, D, or E airspace.

b) Waivers of the basic visual flight rules (VFR) weather minimums specified in § 91.155 may be considered in areas where the entire event can be conducted with ATC providing separation between participating aircraft and nonparticipating aircraft. Section 91.905 establishes a list of rules subject to waivers. Some of the subsections of the mentioned sections may or may not need to be waived. For example, see the note below on § 91.119. There should be a corresponding special provision that gives the conditions that must be followed for each section and/or subsection to be waived to maintain an equivalent level of safety. Another example would be § 91.117. Aircraft speed may be waived but that waiver of airspeed would have a limitation on maximum airspeed, and the limitations on where that waiver is valid would be in the special provisions attached to the waiver.

NOTE: Section 91.119(a) will not be waived for aerial demonstration purposes. Section 91.119(b) and (c) may be waived only when the conditions stated herein are met.

2) Scope of Authorizations. Some aviation events will require a CoA. A parachute demonstration is an aviation event conducted in accordance with part 105, § 105.21 and will require a CoA issued by the responsible FSDO. Other CoAs issued for a rocket launch in accordance with part 101 or a UAS demonstration in accordance with applicable regulations

(see Volume 16) are required to be issued through their respective FAA LOB (e.g., ATO, AST, or AUS).

B. Aviation Events Specialists (AES). A National Aviation Events Specialist (NAES) and the supporting AESs are designated by the General Aviation and Commercial Division. The NAES is responsible for overall aviation event program monitoring and coordination of all information and communications between the DOD, FAA FSDOs, and the public. AESs are responsible for monitoring the same programs for coordinating policy and information between FSDOs and the NAES. The NAES and AESs function in an advisory capacity. IICs making onsite evaluations are responsible for technical determinations as to the issuance or disapproval of a request for CoW/A. A list of NAESs, AESs, and associated FSDOs is available on the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/.

1) The IIC will elevate any issues requiring clarification or that may be of national interest, such as military demonstration team participation, to the assigned AES. The AES will determine the level of national participation. The AES assists in resolving issues and coordinates with the NAES as necessary. The NAES makes recommendations regarding policy changes. When policy change is not required, provide clarification back to the AES.

2) The IIC is required to send the documents in subparagraph a) below to the assigned AES via the designated General Aviation and Commercial Division correspondence mailbox. Specify the name/location/date of the event, the assigned AES, and the responsible FSDO.

a) A copy (electronic format is required) of the following:

1. A signed FAA Form 7711-1 and all attachments for a CoW for a "complex" air show, when signed by the FSDO manager and issued to the event organizer.

2. A completed DD Form 2535 for a military jet demonstration team or a military single-ship demonstration team.

3. A signed FAA Form 7711-1 and all attachments for a CoW for an air race, balloon event, or a CoA for a parachute demonstration when requested by the NAES on an ad hoc basis.

NOTE: See paragraph 3-143 for the definition of an air show, military jet demonstration team, or a military single-ship demonstration team.

b) The documents sent to the assigned AES will be reviewed on an annual basis for consistency and standardization. The NAES, in conjunction with the AESs, will provide annual feedback to the FSDOs, addressing common errors, providing recommendations for changes to FAA policy/guidance or FAA training, changes to special provisions, or recommendations for additional best practices. Annual feedback will also be provided to RIOs through the NAES.

3) The assigned AES will receive reports of initiation of any enforcement investigations, and he or she will coordinate the necessary response with the NAES as early as possible in the investigation. Documentation of the enforcement should be added to the FSDO file for the aviation event.

4) All accidents or incidents occurring at an aviation event must be reported immediately to the assigned AES and NAES via the Regional Operations Center (ROC) in addition to all other emergency notification procedures.

a) The IIC responsible for the accident investigation will provide the preliminary accident/incident report (FAA Form 8020-9, Aircraft Accident/Incident Preliminary Notice) and briefing paper to the assigned AES and NAES within 72 hours. A copy of the preliminary report and briefing paper will be added to the FSDO file for the aviation event.

b) In coordination with the assigned AES and NAES, a decision will be made immediately regarding the performers competence to hold any authority granted or recognized by the FAA to participate in the aviation event when an accident, incident, or enforcement investigation is initiated. The procedures established in the following documents will be followed:

- Volume 5, Chapter 9, Section 1, Paragraph 5-1552, Reevaluation of Competency to Hold and/or Rescission of a SAC;
- The procedures established in the FAA-accepted Formation Flying, Inc. (FFI) and Formation and Safety Team (FAST) formation manuals;
- The procedures established in FAA-accepted manuals for an accredited air race organization or race class;
- The procedures established by the United States Parachute Association (USPA); and
- As required by a General Aviation and Commercial Division LOA issued for performers (civilian and military) at an aviation event.

5) On site at an aviation event, the IIC, in coordination with the event organizer/responsible person (after any required communication with the FSDO manager), will contact the assigned AES when a policy issue cannot be resolved to seek input on resolution. The AES will contact the NAES if unable to resolve the issue.

6) The NAES and the assigned FAA accreditation team members (e.g., AES, IIC, and others as assigned) are responsible for technical determinations as to the approval or disapproval of a request for an air race accreditation (closed-course). See Volume 3, Chapter 6, Section 2.

C. IIC. To enable the FAA to most effectively manage the aviation event program, it is preferred the FSDO manager assigns the intended IIC to process an application for a CoW/A for an aviation event. If the intended IIC is not available for assignment at that time, a qualified ASI may be assigned in the interim. An aviation safety technician may be assigned to support these activities. The IIC evaluates, oversees, or personally conducts the following activities:

- Site feasibility study and completion of DD Form 2535.
- Participation in the preseason evaluation meeting.
- Evaluation of the application for a CoW/A.
- Evaluation of the ERP.
- Evaluation of the security plan.
- Recommendation for issuance or disapproval of a CoW/A.
- Coordination with other FAA organizations (e.g., ATO, AST, ARP Division, AUS).
- Prepares a list of special provisions appropriate for the aviation event in compliance with current guidance in this order.
- Surveillance of the aviation event.
- After-action items and lessons learned.
- Complete FSDO checklist, FSDO file, and PTRS records.

D. IIC Qualifications. The IIC (GA Operations ASI) assigned this task and the subsequent surveillance must have completed the following:

1) Required FAA prerequisite formal training (reference Job Task Analysis (JTA) for aviation events).

2) Applicable on-the-job training (OJT) for each type of aviation event.

3) Participated in the issuance of at least three CoWs for an air show, balloon event, air race (closed course), or Aerobatic Contest Box (ACB).

4) Surveillance of at least three aviation events as a trainee with a qualified IIC.

5) Events in which a military demonstration team performs, the IIC must have satisfactorily completed:

a) Required FAA prerequisite formal training (reference JTA for aviation events);

b) OJT for a military air show conducted on site during two events with military participation;

c) Participation in a site feasibility determination required by DOD and completion of DD Form 2535;

d) Participation in a preseason evaluation meeting; and

e) Preparation of a CoW for an air show with a military demonstration team.

NOTE: At the time of publication, qualified IICs will be required to meet new training requirements as stated in the JTA. The JTA establishes the grace period.

E. Qualified Inspector Not Available. If the FSDO does not have an inspector who meets the above qualifications, the FSDO manager will contact the assigned AES to request an inspector who is qualified to perform the tasks of an IIC. After the assigned AES identifies an available IIC, FSDO managers should work out the arrangements necessary to accomplish the task and provide OJT if an ASI is available. A PTRS record must be made documenting the need for outside resources.

F. Surveillance of an Aviation Event. Surveillance of an aviation event is the responsibility of the FSDO manager. Preferably, the IIC who processed the application for a CoW/A and, if applicable, completion of the DD Form 2535 should monitor the air show, closed-course air race, and balloon event. Consider additional resources for high profile events or large aviation events. The required surveillance team for an air show, closed-course air race, and balloon event, at a minimum, must include an IIC. Any event not monitored by an IIC must be coordinated with the assigned AES well in advance, the outcome documented in the PTRS, and the NAES notified (see Volume 6, Chapter 11, Section 10).

1) The departmental standards of conduct regulations (Title 5 of the Code of Federal Regulations (5 CFR) part 2635 subpart B) prohibit employees from accepting gifts, favors, gratuities, or any other thing of monetary value from any person or company that is subject to FAA regulations.

a) In general, employees should not accept any item that a member of the public would otherwise have to pay for.

b) However, it is acceptable for an inspector to accept a free pass as a means to gain access to an area in order to perform his or her assigned oversight responsibilities, although it is not appropriate for employees to accept free passes beyond what is required to perform their duties.

NOTE: If the free pass includes a lunch, employees should not accept the free lunch, since lunch is not part of an assigned duty.

2) Airworthiness, Avionics, other Operations ASIs or aviation safety technicians may be assigned as part of the team. The IIC and FSDO manager must coordinate with the assigned AES to request a deviation from required minimums.

3) Cross-country air race, aerobatic contest, APA, parachute demonstration, and flyover surveillance requirements are as deemed necessary by the FSDO manager. If surveillance is conducted at an event issued a CoW/A, the team should include an IIC. Airworthiness, Avionics, other ASIs, or aviation safety technicians may be assigned as part of the team. When needed, resources from the responsible FSDOs may be requested. Document in the PTRS record

whether surveillance was conducted or a decision was made by the FSDO manager not to send an IIC to surveil the cross-country air race, aerobatic contest, APA, parachute demonstration, flyover, or at an event issued a CoW/A.

G. Surveillance of an Aviation Event—Inspector Resources Not Available. It is always preferred to have a monitor at each air show, closed-course air race, and balloon event, although in rare circumstances it may not be possible. The FSDO manager, along with the assigned AES, should consider the following as part of the decision-making process and assessing the risk:

1) What is the size of the event (length, number of air show acts and static display, number of spectators)?

2) Has there been a history of problems with the management of the event?

3) Will the event include military participants? Was a DD Form 2535 completed for this aviation event? Are there special conditions for this site?

4) What is the previous safety history of this event?

5) Is the event well planned and are experienced personnel in key positions (e.g., event organizer/responsible person, air boss, performers, and emergency response incident command personnel)?

6) What is the experience level of the responsible person/event organizer and air boss?

7) Is the ERP well designed, exercised, and appropriate for the size, scope, and complexity of the event? Is the Incident Command System (ICS) utilized with a completed IAP that describes the resources and staffing levels?

8) Is the security plan to manage spectators and sterile areas well designed and adequately staffed for this event?

9) Is a TFR issued for the event?

10) Is a rocket launch planned?

11) Is a UAS demonstration planned?

12) Is ATC managing the movement of aircraft? Are they on site?

13) How many FAA monitors would this event normally require?

14) Has the event organizer completed the aircraft and participants checklists for all participants?

15) Will you send an ASI (Airworthiness) to inspect aircraft prior to event?

16) Will you send an ASI (Operations) to check the performers' credentials prior to event?

17) Is it possible to attend the first day to ensure compliance with CoW and special provisions?

18) When the last time surveillance was conducted at this aviation event?

19) Was an onsite feasibility study conducted for the issuance of the CoW/A? Are there special conditions for this site (e.g., overwater show, night show, or pyrotechnics)?

NOTE: Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for a coordination memo to include PTRS codes.

3-145 APPLICATION FOR A CERTIFICATE OF WAIVER OR AUTHORIZATION.

A. FAA Form 7711-2, Application for Certificate of Waiver or Authorization. A GA Operations ASI/IIC who reviews relevant information about the proposed operation and site feasibility and processes an application for an aviation event must use FAA Form 7711-2 (Figures 3-49 and 3-50), submitted by the event organizer. Not all items on the form may apply to each event. In other cases, additional information may be required. Approval of the application by the assigned GA Operations ASI/IIC will be completed only after the event organizer has met all requirements and as stated below:

1) Application Requirements.

a) All event organizers must submit applications for a CoW/A for an air show, balloon event, air race, parachute demo, rocket launch, UAS demo, temporary APA, LTAPA, and ACE/P operation in accordance with the timelines and coordination established in subparagraph 3-142B.

NOTE: Air race (closed course) accreditation requirements established in Volume 3, Chapter 6, Section 2 must have been met prior to submitting an application for a CoW for an air race.

b) The completion and submission of FAA Form 7711-2 and all supporting documents are solely the event organizer's responsibility.

c) Upon approval by the assigned GA Operations ASI/IIC, FAA Form 7711-2 and its attachments become a part of FAA Form 7711-1 (see Figure 3-51, Sample FAA Form 7711-1, Certificate of Waiver or Authorization).

d) The event organizer must attach current maps, sectional charts, diagrams, or other data appropriate to the activities and locations to FAA Form 7711-2 upon application for a CoW/A.

e) For most events, the supporting data must address the following major areas:

1. Diagrams and descriptions of spectator areas which restrict the public from:

- The flight areas;
- The active runways;
- The taxi and run-up areas;
- The rocket launch pad;
- The static display areas (restricted access);
- The aircraft fueling locations;
- The location of the UAS Ground Control Station (GCS) as well as the UAS launch and recovery locations; and
- Other active areas, such as Aircraft Rescue and Fire Fighting (ARFF)-specific assets and Crash, Fire and Rescue personnel on site and at the designated location, parachute landing areas, and pyrotechnic areas.

2. The security and crowd management plan must describe the methods that will be used to ensure the areas outside of the designated spectator area(s), especially the area under the flying display area, are secure and where required, sterile. A diagram and description of security of the areas must be included in the plan (see subparagraph 3-154C for detailed security plan requirements).

3. The ERP, in conjunction with its companion IAP(s), must describe how the organizations presenting and supporting the event will respond to protect people and property in any emergency that affects performers, essential personnel, or spectators (see subparagraph 3-154B for detailed ERP requirements).

4. The applicable manuals and FAA LOAs required for each type of aviation event must be verified and available for reference (refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/).

2) Participant Eligibility. Except for official military pilots, each operator/pilot flying a civil aircraft must demonstrate they have the proper certification and rating for the aircraft to be flown under a CoW/A for an aviation event. Each operator/pilot operating a civil aircraft must also show that they possess the following additional qualifications, as applicable:

a) While performing aerobatics and/or dynamic maneuvering, must possess a current and valid FAA Form 8710-7 or equivalent Transport Canada Form 26-0307 (see subparagraph 3-146B), including foreign civil airmen and UAS pilots issued on the basis of an FAA-accepted ACE Program. (See Figure 3-52, Sample FAA Form 8710-7, Statement of Aerobatic Competency (SAC), and Figure 3-53, Sample Transport Canada Form 26-0307, Statement of Aerobatic Competency (SAC).)

b) While exercising the privileges as an air boss, must hold an FAA LOA issued on the basis of an FAA-accepted ABRP.

c) While participating in an air race, must have a current and valid air race credential issued by an FAA RIO.

d) While performing standard formation maneuvers, must have a current and valid industry formation credential issued by an FAA RIO.

e) While performing standard solo maneuvers, no additional qualifications are required.

f) The FAA does not require certification of operators of ultralight vehicles, wing walkers or trapeze occupants, ribbon cut personnel, drivers of ground vehicles for a car-to-plane transfer, and other non-airmen participants. These non-airmen participants are considered essential personnel and must meet the requirements in subparagraph 3-146F.

3) Participant Credentials. The following civilian pilot, operator, and non-airmen participants' qualifications and credentials can be accepted on the basis of a RIO that is acceptable to the FAA:

a) A SAC card issued by the FAA after a recommendation from the International Council of Air Shows (ICAS) or the Experimental Aircraft Association (EAA) Warbirds of America (WoA) in accordance with their FAA-accepted ACE manual.

b) An air boss LOA issued by the FAA after the recommendation from the ICAS in accordance with their FAA-accepted ABRP.

c) A parachute license or rating issued by the USPA, or equivalent qualifications acceptable to FAA.

d) Rocket operator license or rating issued by the Tripoli Rocketry Association (TRA) or National Association of Rocketry (NAR).

e) UAS pilots who are operating an aircraft that is flown strictly for hobby or recreational use will operate the aircraft in accordance with a community-based set of safety guidelines and within the programming of a nationwide CBO (refer to § 101.41). The Academy of Model Aeronautics (AMA) meets this requirement and is a RIO for UAS operations under part 101 at aviation events.

f) A formation credential for Standard Maneuvering–Formation issued by FAST or FFI in accordance with their FAA-accepted formation program.

g) An air race credential for air race pilots issued by an FAA-accredited air race organization/class.

NOTE: Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for applicable RIO LOAs and contact information.

B. Assisting the Event Organizer With FAA Form 7711-2. Advisory Circular (AC) 91-45, Certificates of Waiver or Authorization: Aviation Events and Aerobatic Practice Areas, or AC 105-2, Sport Parachuting, as appropriate, provides most information necessary to plan and conduct a safe event. FAA inspectors can obtain additional information and they may direct the event organizer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/.

1) Thorough planning has a direct bearing on the success and safety of any aviation event. In larger events, the event organizer should be encouraged to appoint a responsible person (see subparagraph 3-143RR), to develop a detailed plan for all facets of the event regarding the CoW/A. The event organizer and/or responsible person must understand that a CoW/A is only issued after the determination that a proposed event can be conducted safely and in the best interest of public safety. The inspector should direct the event organizer or responsible person to the detailed guidance in this chapter and ensure that the following subjects have been addressed:

- Type of event (e.g., air show, air race, balloon event, fly-in, flyover, or parachute demonstration);
- Each act's support and airspace requirements and eligibility of participants and aircraft (military/civil);
- Profiles for flybys (e.g., parade of aircraft, racetrack patterns with Standard Maneuvering–Solo and Formation pilots) and reenactments;
- Military aircraft performances/flyovers and associated DD Form 2535;
- Rocket launches/safety analysis;
- Pyrotechnics/fireworks or other special events;
- UAS demonstrations/safety analysis;
- Site selection (e.g., airports, fairgrounds, or other sites);
- Airspace considerations and issuance/review of a Class D NOTAM or TFR;
- Airport considerations (14 CFR part 139);
- Minimum safety distances and altitudes;
- Event management, to include security plan and ERP;
- Temporary practice areas; and
- Air race accreditation requirements.

2) The experienced event organizer is generally well acquainted with the requirements and procedures for obtaining the CoW/A and will usually appoint a responsible person to attend to many of the areas listed above to help in preparation of the CoW/A.

a) The IIC should meet with first-time event organizers to review and ensure they have a good understanding of AC 91-45 and/or AC 105-2, which contain important information for planning and conducting safe aviation events, because they may not be aware that a CoW/A is required. These ACs also provide information on how to obtain FAA Form 7711-1.

b) The IIC should strongly encourage first-time event organizers to contact industry organizations (e.g., ICAS, the Balloon Federation of America (BFA), or the USPA) for aviation event support and/or training and be familiar with any industry safety standards/best

practices, including the National Fire Protection Association (NFPA). The NAR and TRA should be contacted when a rocket launch is planned. FFI and FAST should be contacted for information regarding standard formation credentials. The AMA should be contacted when a model aircraft demonstration is planned.

c) The IIC should also direct event organizers to obtain these documents and other pertinent information from the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/. For UAS operations, event organizers can visit the FAA UAS website at https://www.faa.gov/uas/.

d) Additional considerations should be given to fly-ins, flyovers (military/civilian), and special events (e.g., candy drops; helicopters and UAS delivering a game ball or flowers to a football stadium; or flying Santa Claus or a celebrity into a shopping center property). These events may not always require a CoW or CoA. In those cases, the IIC should recommend following guidelines (e.g., safety distances) in this policy and the referenced ACs as a best practice to ensure safety of spectators at the event.

C. Completion of FAA Form 7711-2. (See Figure 3-49.) Upon receipt, review the application (FAA Form 7711-2) for obvious discrepancies. An FAA Form 7711-2 for each type of aviation event must be submitted (e.g., air show, parachute demo, or STAPA). If discrepancies exist, arrange a meeting or teleconference with the event organizer to resolve the issues to mutual satisfaction. The event organizer must revise the information he or she submitted on FAA Form 7711-2. Discrepancies can be modified through electronic media or written correspondence by asking the event organizer to make the corrections on the application. When absolutely necessary, the IIC can make corrections to FAA Form 7711-2, if documented via electronic media, record of telephone conversation, or written correspondence, and attached with the instructions for changes from the event organizer authorizing a change.

1) Items 1 and 2. Not every event organizer is an organization. An individual may be designated as the event organizer of an aviation event. If the event organizer represents an organization (i.e., a sponsor), the organization's name should appear in Item 1. The name of the individual and his or her position or authority to represent the organization as the responsible person should appear in Item 2. If the event organizer is not representing an organization, "N/A" should be entered in Item 1 and the event organizer/sponsor's name entered in Item 2.

a) An event organizer (responsible person) is one who has demonstrated to the FAA knowledge concerning the terms and provisions of the CoW/A for this aviation event. The event organizer will be responsible to the FAA for the safe conduct of the event.

b) The event organizer may delegate to other persons the authority to organize and control particular aspects of the event (e.g., emergency response and security). It is recommended that the event organizer not be the same person that is providing air boss services for the air show. At a small event, one person may be able to coordinate more than one activity, while at a large event, a committee of persons delegated by the appropriate authority may control an activity.

c) The event organizer and all persons designated for a particular aspect of the event as a responsible person must be listed in Item 2. A supplemental list may be attached.

1. For air shows, the air boss must be listed. An electronic copy of the current and valid FAA air boss LOA must also be attached to FAA Form 7711-2.

2. For balloon events, the balloonmeister must be listed.

3. For air races, the race director must be listed.

4. For parachute demonstrations, the team leader must be listed.

2) Item 3. Indicate the permanent mailing address of the organization named in Item 1 or the individual named in Item 2.

3) Item 4. Pertains to banner towers only. Aviation events should enter "N/A."

4) Item 5. Pertains to banner towers only. Aviation events should enter "N/A."

5) Item 6. Refer to §§ 91.905 and 107.205 for lists of rules subject to a CoW. Ensure that the applicable rules to be waived have been requested. List each title, section, and/or subsection of each rule to be waived and include a description of the rule language. An application for a CoA for a parachuting operation should state that authorization is requested in accordance with § 105.21. A CoA for rocket launch in accordance with part 101 is requested through ATO, and indicated in this section.

6) Item 7. It may be sufficient for the event organizer to use the terms air show, parachute demonstration, balloon competition, fly-in, flyover (military), or air race (cross-country, closed-course) to describe the events. However, it would be helpful for the event organizer to fill in as detailed a description as possible if the event is an air show or air race; for example, enter the category of aircraft (including UAS), air race classes, or indicate the class of rocket planned to be launched or if pyrotechnics are used (see Figure 3-49, Item 7).

7) Item 8. The event organizer should describe the aviation event demonstration area, aerobatic box, and the flying display area as a rectangular, cubic, or cylindrical cell of airspace; and the aerobatic box for each category of aircraft as a cube or rectangle bounded by a runway or other definable geographical reference, or lateral point which begins at the surface. The description of the aviation event demonstration area, aerobatic box, and the flying display area can be submitted as a narrative description, or through the use of a map and aerial photographs with clear delineations and notions. Include the show center or center point and the radius of the area. Each of these areas should list the base altitude and the ceiling (in height AGL) and the latitude and longitude of each point. The racecourse(s) is depicted as approved by the FAA. Specify if over land or water, as appropriate.

a) For off-airport sites, the boundaries should also be described using rivers, highways, railroads, or other easily identifiable landmarks or markers.

b) Attach current, properly marked maps, VFR sectional charts, drawings, and/or photographs of the planned area of operation (satellite photographs may be substituted for topographic charts (from http://maps.google.com, http://www.mapquest.com, etc.)). The United States Geological Survey (USGS) publishes maps at various scales and also provides aerial photographs. Refer to https://www.usgs.gov/products/maps/overview/ for more information. Geographic Information System (GIS) maps of airports can also be obtained from the airport operator or FAA ARP Division. The event organizer will include as much of the following applicable data as known at the time of application. The FSDO will review the documentation for acceptance. Any depiction submitted must include indications of the following (to include the latitude and longitudinal coordinates):

1. The location of the boundaries of the aviation event demonstration area.

2. The location of the boundaries of the flying display area and aerobatic box.

3. The location and marking of the show lines (if over water, identify how markings will be secured).

4. Ingress and egress routes.

5. The profile of flyby patterns (e.g., parade or racetrack).

6. The location and type of corner markers.

7. The location of the primary spectator area and the types of barriers used, including gates.

8. The location of the secondary spectator area.

9. The location of the control point.

10. The location of the parachute landing area.

11. The location of the pyrotechnic areas.

12. The location of the helipads.

13. The location of the rocket launch pad.

14. The location of the UAS GCS as well as the UAS launch and recovery locations.

15. As prescribed in the ERP:

a. Primary and alternate access and egress routes to the event site for use by emergency services;

b. The location of emergency services/public safety resources, including ARFF, Crash, Fire and Rescue and Emergency Medical Services (EMS), law enforcement/security, command post(s), onsite medical treatment facilities, and other emergency response capabilities;

c. The pre-positioning location of dedicated ARFF, Crash, Fire and Rescue and EMS apparatus and crews to ensure a 1-minute rapid response to the aerobatic box/flying display area when the CoW/A is in effect; and

d. The location of land and water emergency access routes to and from the aerobatic box/flying display area.

16. The location of the aircraft movement areas.

17. The location of the static display aircraft parking areas.

18. The location of the spectator parking areas.

19. The location of the transient and performer aircraft parking areas.

20. The location of the refueling areas.

NOTE: See Figure 3-29 for an example of an air show layout figure.

c) The event organizer should note in Item 8 if supplemental information is attached.

d) The event organizer is responsible for and must ensure the site layout depicts that the aviation event demonstrations and/or acts can be accomplished at that site. If an aviation event demonstration or act cannot fit within FAA distance criteria, or if congestion or new development around the proposed site impedes those criteria, the site is not appropriate for that demonstration or act and the event organizer must take action to resolve or rescind the application. A review of the previously submitted DD Form 2535 must be conducted by the event organizer and resubmitted, if required.

e) For events that include multiple categories of aircraft flying in the same aviation event demonstration area (e.g., reenactments, flybys (parade or racetrack), and flyovers), a single map, aerial photograph, or written description profile must be submitted that clearly delineates where the various categories of aircraft will perform.

8) Item 9. Lists the start stop times for the effective dates and times requested for the CoW/A. This can be submitted on the form or as an attachment. Advise the event organizer to consider alternative dates or extending times on the initial application (e.g., weather delays).

Alternate dates may be listed. Use month/day/year, 24-hour clock, Standard Time or Daylight Saving Time, and Coordinated Universal Time (UTC) for location (05-21-2014 0900-1830 CDT UTC -6).

9) Item 10. The initial application does not need to list each specific performer/aircraft, rocket operator/class of rocket, UAS type/UAS operator/pilot/UAS operation, and air race participant/aircraft. Providing enough information initially to determine general categories of performers and aircraft (Category I, Category II, Category III, flyby/flyover demonstrations for manufacturers or reenactments) and UAS demonstration or rocket launch planned is required. The application may be accepted with a notation in Item 10 that a list is attached or will be provided at a later specified date and time. The list must eventually include all performers and aircraft (civilian and military), air race participants/aircraft, parachute teams (civilian and military), rocket(s), or UAS.

a) As required, a notation stating the registration number and show line category must be annotated with each make and model aircraft, UAS, and class of rocket.

b) Once the list has been supplied, it may be amended by the responsible person and resubmitted to the IIC for approval.

c) Performers/aircraft added after the CoW/A has been issued or on the day of the event must show proof to the IIC of appropriate qualifications for each performer/participant, that the aircraft is airworthy, and a determination must be made that the performance can be conducted at that show site and, as required, the appropriate category show lines have already been established for that aircraft and for air races, as specified in the operations manual. Rocket launches added later must have a CoA and an AST safety analysis completed showing that the launch can be safely conducted at that show site. UAS operations added later must have a CoA and safety analysis completed showing that the UAS demo or operation can be safely conducted at that show site.

10) Items 11 and 12. This section requires the name and address of the event organizer. The event organizer of an aviation event must be an individual, a group of individuals, or an organization.

11) Item 13. With respect to crowd management, it is the event organizer's responsibility to ensure that the method established to confine spectators is adequate to hold the spectators behind the crowd line or within the defined spectator area, ensure that sterile areas are evacuated and remain sterile, and to present a security plan, applicable to the scope and complexity of the aviation event, to the IIC in sufficient detail that specifies how this will be accomplished and who is responsible to police the aviation event. The application may be accepted with a notation in Item 13 that a written security plan will be provided at a later specified date.

12) Item 14. Particular attention should be paid to emergency facilities and services. As previously noted, the application serves as an all-purpose form and contains items that may or may not be appropriate to emergency facilities. Do not check any box. Event organizers are required to present an ERP, applicable to scope and complexity of the aviation event, that

specifies how this will be accomplished and who is responsible in the event of an emergency. The plan should meet the requirements established in subparagraph 3-154B. The application may be accepted with a notation in Item 14 that a written ERP is attached or will be provided at a later specified date.

13) Item 15. List all ATC facilities, ATC frequencies/requests, TFR NOTAMs/requests, ATC contacts, and additional ATO coordination requirements. ATO coordination requirements are established in subparagraph 3-145E.

a) Methods. Enter a description of the method for the jurisdictional ATC facility(ies) responsible for controlling air traffic operating in the aviation event demonstration area while the CoW/A is in effect and potential alternative communication methods. This is typically accomplished through an LOA or other means acceptable to the IIC.

b) TFRs/Class D NOTAMs. Request for TFRs, as authorized under § 91.145 (if applicable), must be submitted at least 45 days prior to the event. Add a notation in Item 15 that a TFR NOTAM request was initiated or provide the date it will be submitted. Identify who made the request and the ATO point of contact (POC). If a TFR NOTAM was not requested, note that a Class D NOTAM will be issued in accordance with the CoW/A.

c) ATC Frequencies. If additional ATC frequencies are required, note that an Aviation Event Frequency Application has been submitted or provide the date it will be submitted, who made the request, and the ATO POC. The request must be submitted at least 45 days prior to the event.

d) Rocket Launch Coordination. Add a notation in Item 15 if a request for a CoA is initiated through the jurisdictional ATC facility or provide the date it will be submitted, who made the request, and the ATO POC.

NOTE: Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for additional information on TFRs, ATC frequencies, and sample LOAs.

14) Item 16. A proposed Schedule of Events must be submitted to evaluate the application, so a determination can be made that the event (to include daily Participants Safety Briefings (date/time/location) and any specialty/remote briefings (date/time/location)) can be conducted at the site as proposed and requirements for the responsibility for coordinating participating and nonparticipating aircraft emergency response and security plans can be evaluated. It should contain at least a general description of the types of events and their approximate sequence in the event. The application may be accepted with a notation in Item 16 that a final Schedule of Events and briefing schedule will be provided at a later, specified date and time. This can be submitted on the form or as an attachment.

NOTE: Any demonstration or act added to the event schedule requires notification to the FAA and should be submitted at the earliest opportunity (see Item 8, above). Cancellation of a demonstration or act, to include a rocket launch, parachute jump, or UAS demonstration, does not require advance notice, unless it has a significant impact on the event (e.g., cancellation of a military

demonstration team would require notification and coordination with ATC (TFR and airspace) and the AES/NAES, as would the cancellation of the entire event).

15) Signature. The event organizer or sponsor listed in Items 1 and/or 2 must sign the application for it to be accepted by the FAA.

D. Temporary (Short-Term) Aerobatic Practice Areas (APA). An event organizer should consider the need to request a CoW for the establishment of a temporary APA (STAPA or Aerobatic Competency Evaluation/Practice (ACE/P) operation). Temporary APAs are issued for the purpose of developing/practicing aerobatic (unusual attitude) skills, establish and maintain proficiency of air show performance/routine, enhance competitive skills in aerobatic maneuvers, air race aircraft validation, and aerobatic competency evaluations.

1) See Volume 3, Chapters 5 and 9. Inspectors should encourage event organizers to apply for a temporary APA for an associated air show/air race as part of that CoW request, if one is desired. This will provide participating performers with a convenient and safe area in which to practice their aerobatic performances/air race maneuvering.

2) This should be a separate temporary APA CoW, which becomes effective as much as 7 days immediately before the event. It should terminate on or before the same date and time as the event CoW, unless a short extension is needed for training or evaluations.

3) The actual event site may be suitable as a temporary practice area prior to the event if it is a controlled environment and there will be no conflict with other nonparticipating aircraft. The effective times must be thoroughly coordinated with the pertinent ATC facilities before approval and issuance of the temporary APA. This is the most desirable option for performers (civilian/military). The temporary APA associated with an aviation event should be established no more than 20 or 30 miles from the actual event site, unless justification for extended distance is coordinated with the IIC. The physical parameters of the temporary APA should be large enough to encompass all of the maneuvers that will be performed in the aviation event or all that is needed for the required training, evaluation, or requirements.

4) The responsibility for site selection, coordination, application, and oversight of the temporary APA rests solely with the event organizer. The event organizer must control access to the temporary APA, and only those persons performing in the aviation event should be permitted to use the area.

a) Temporary APAs (30 days or less) are categorically excluded from Order 1050.1 due to their temporary nature.

b) LTAPAs are valid for more than 30 days to no more than 36 calendar-months in duration and require an environmental review in accordance with Order 1050.1. They are typically categorically excluded for noise, requiring considerations for extraordinary circumstances.

c) Use of temporary APAs for rocket launches is prohibited.

E. Coordination Requirements.

1) Air Traffic Coordination. Any request for a CoW/A for an aviation event requires coordination with the ATC facility(ies) having jurisdiction over the airspace where the aviation event will take place. Procedures for the transition of CoW/A airspace from ATC to air boss, race director, or balloonmeister must be established, to include the control of nonparticipating aircraft such as EMS, firefighting, aircraft rides (e.g., helicopter, Living History Flight Experience (LHFE), Young Eagles), arriving/departing spectator/local aircraft, or transition through TFR while the CoW/A is effective. Any special conditions or any ATO LOA considered necessary by the ATC facility will be made a part of the CoW/A in the special provisions. These nonstandard special provisions must be submitted and accepted by the IIC no later than 30 days prior to the aviation event.

NOTE: Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for additional information on sample LOAs and procedures for transition of airspace (controlled and uncontrolled) between ATC and the air boss, race director, or balloonmeister.

a) The air boss, race director, and balloonmeister are only authorized to direct performers and their aircraft (with IIC approval, may include arriving and departing static display aircraft) listed under the CoW/A during the effective waivered times. A means of transitioning control of transient aircraft between the air boss, race director, and balloonmeister and the controlling ATC facility operating during the waivered times must be defined, to include transition through TFR and ingress and egress into waivered airspace. The event organizer must attach all ATC LOAs or agreements between the air boss, race director, and balloonmeister and the ATC facility to the FAA Form 7711-2.

b) Although every aircraft in the aviation event may be equipped with a two-way radio, a visual ground-to-air emergency signal must be provided and discussed in the required Participants Safety Briefing. UAS operations may require separate procedures to be established.

c) The following should be discussed with the event organizer and ATC facility:

1. An ATC clearance for a low approach does not authorize a pilot to exceed § 91.117(a), the 250-knot speed limitation below 10,000 feet mean sea level (MSL), or § 91.117(b), the 200-knot speed limitation in Class D airspace.

2. Section 91.117(b) 200-knot speed limitation in Class D airspace. ATC may authorize the pilot to exceed 200 knots only when specifically requested by the PIC.

3. Section 91.117(a) 250-knot speed limitation below 10,000 feet MSL. ATC cannot verbally authorize a pilot to exceed the 250-knot airspeed limitation below 10,000 feet MSL. This is only authorized when § 91.117(a) is waived in a CoW.

4. Section 91.117(d). If the minimum safe airspeed for any particular operation is greater than the maximum speed required by § 91.117(a)–(c), the aircraft may be operated at that speed.

2) Operation of Transponders. Transponders must be installed, operational, and used in the appropriate airspace, as required by § 91.215. All transponder-equipped aircraft are required to have their transponders turned on and set to Mode C while in the waivered airspace unless required to be turned off by ATC for safety purposes. This regulation cannot be waived under § 91.905.

3) Operation of Automatic Dependent Surveillance-Broadcast (ADS-B) Out Equipment. After January 1, 2020, and unless otherwise authorized by ATC, ADS-B must be installed, operational, and used in the appropriate airspace, as required by §§ 91.225 and 91.227.

a) Requirements. All ADS-B Out-equipped aircraft are required to have their ADS-B Out equipment turned on while in the waivered airspace. This regulation cannot be waived under § 91.905.

1. Reduced ADS-B Out avionics performance during aerobatic flight is expected, and the FAA does not consider this to be a condition of noncompliance to applicable regulations.

2. ADS-B Out equipment installed on aircraft used while conducting aerobatic flight or aircraft certified for aerobatic flight must meet the performance requirements specified in § 91.227 when conducting nonaerobatic flights.

b) Formation Flights. As directed by ATC, only the lead aircraft is required to have their ADS-B turned on. This must be authorized by the controlling ATC facility and authorized in the CoW.

4) Special Ultrahigh Frequency (UHF)/Very High Frequency (VHF) Frequency Requests. Requests for special UHF/VHF frequencies for an aviation event usage should be made by the event organizer to the ATC facility having jurisdiction over the airspace where the aviation event will take place. The IIC should also direct event organizers to obtain instructions on how to request frequencies and other pertinent information from the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/. Frequency analysis/testing is required when other frequency use is required for a rocket launch, demonstration/operation, or pyro (airborne/ground) demonstration that is conducted during the aviation event. All frequencies must be published and briefed at the daily safety briefing.

5) FAA ARP Division. Any event organizer who requests a CoW or CoA for an aviation event on an airport certificated in accordance with part 139 must coordinate with the appropriate FAA Airport District Office (ADO), and the event organizer must receive approval for the event ground operations plan and provide the approval to the IIC before issuance of FAA Form 7711-1. The FSDO issuing the CoW or CoA for the aviation event must ensure the coordination with the event organizer and the FAA ADO has occurred no later than 30 days after receipt of FAA Form 7711-2 for the aviation event. Unusual demonstrations, such as a rocket launch, pyrotechnic demo, or UAS demos may require additional coordination, so encourage early coordination during planning stages for the aviation event prior to submission of FAA Form 7711-2.

a) The FAA ADO approval of the ground operations plan and any recommended changes to the ERP or security plan must be coordinated with the IIC, event organizer, ATO, and air boss and subsequently submitted and accepted by the IIC no later than 30 days prior to the aviation event.

b) Encouraging event organizers to include airport management in the coordination early on will greatly facilitate the process. These steps will facilitate the resolution of any conflicts with the ARP Division policy/regulatory requirements relative to part 139.

c) The ground operations plan includes the necessary changes that must be addressed for security and emergency response. The ADO is responsible for ensuring any necessary changes to the ground operations plan and recommendations for changes to the security plan and ERP submitted for the aviation event are coordinated with FAA security and ARFF personnel before they are accepted by the ADO and by the IIC for the aviation event. ADO approval of the ground operations plan is a separate and distinct requirement from the review and approval of the overall aviation event layout (primary spectator area, show line(s), takeoff/landing runway, etc.) that is the responsibility of the FSDO.

d) Any limitations or special provisions considered necessary by the ADO will be made a part of the CoW or CoA. These recommendations must be coordinated with the IIC, event organizer, ATO, and air boss and subsequently submitted and accepted by the IIC no later than 30 days prior to the aviation event. As part of their normal program responsibilities, FAA ADO inspectors may from time to time request information concerning aviation event activities at airports other than those certificated in accordance with part 139.

e) The ARP Division has designated lead airport inspectors in each ARP Division regional office as the approval authority for this approval. The IIC should direct the affected aviation event organizer to call the appropriate regional office for coordination. If unable to reach that office, call the National Airports POC. Information on airports required for aviation events and the list of regional offices is found at https://www.faa.gov/airports/airport_safety/airshows/.

6) Scheduled Air Carrier Operations. If a scheduled air carrier serves an airport that is the site of an aviation event, arrangements must be made for the arrival and departure of such aircraft. It is usually adequate to schedule a break in the activities to allow for scheduled arrivals and departures. The event organizer must complete prior coordination with the air carrier, ATC, IIC, air boss, and the ARP Division or the ADO to ensure procedures are in place for ATC to control arrival and departure. This is typically accomplished through an LOA or other means acceptable to the IIC.

7) TFR. A TFR is an area designated to enhance the protection of persons and property on the surface or in the air, to maintain air safety and efficiency, or to prevent the unsafe congestion of aircraft in the vicinity of an aviation event.

a) The responsible person, air boss, race director, or balloonmeister (not FSDO personnel) must request a TFR. Coordination of a request for a TFR should begin at least 90 days prior to the aviation event.

b) The procedures for requesting a TFR are available on the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/. Aerial demonstrations contained entirely within a Class B, C, or D airspace area should not request the issuance of a TFR under § 91.145.

c) Issuance of a TFR NOTAM in accordance with § 91.145 should be requested when the following conditions are present:

- Any segment of the requested airspace for the aerial demonstration (to include an air race, rocket launch, or UAS demo) for aircraft exceeding 200 knots indicated airspeed (KIAS) is outside of Class B, C or D airspace;
- Military aircraft are conducting aerobatic/aerial demonstrations;
- Civilian aircraft that operate in excess of 200 knots are conducting aerobatic/aerial demonstrations; or
- Sanctioned military parachute demonstration teams are performing.

d) The TFR issued will reflect the dates, times, and lateral and vertical limits of the demonstration area for the aerial demonstration for which a CoW/A (FAA Form 7711-1) has been issued. The times should allow for flexibility at the beginning and end of the aviation event (e.g., weather delays). The TFR must encompass or exclude the entire airport surface area of any airport that is located on the edge of the lateral limits of the TFR.

e) VFR and instrument flight rules (IFR) air traffic (nonparticipating aircraft not specified on the CoW) may be authorized to operate within the designated airspace area published in the TFR NOTAM, when the following conditions and procedures documented are met:

- The controlling ATC facility and air boss grant authorization;
- The air boss has coordinated the procedure with the IIC; and
- The TFR NOTAM specifies the frequency to contact ATC for an authorization. (Only ATC can provide a clearance to nonparticipating aircraft.)

NOTE: Air boss information should not be listed in the TFR. ATC will coordinate procedures with nonparticipating aircraft and the air boss.

f) Cancellation of a CoW/A and TFR NOTAM must be coordinated in advance. The event organizer or air boss must coordinate procedures for cancellation with the controlling ATC facility and the IIC. The procedures should be pre-coordinated, documented, and briefed.

8) Class D NOTAM. Issue a Class D NOTAM for any aerial demonstration for which a TFR was not issued. A Class D NOTAM does not prohibit transient aircraft from entering the airspace. It is only a notice for nonparticipating aircraft that the airport is closed and the purpose of that closure (only ATC can provide a clearance to nonparticipating aircraft).

9) Waiver of § 91.155 Requirements for VFR. Section 91.155, and other sections as applicable, authorizing operations "clear of clouds" and a reduction in minimum ceiling requirements by the IIC is waived under the following circumstances:

- The aviation event is conducted entirely within Class B, Class C or D airspace where ATC communication is maintained; or
- The aviation event is conducted within the boundaries of a TFR issued for that event and ATC communication is maintained.
- The aviation event conducted at night must comply with all of § 91.155.
- The aircraft should be equipped in the event of inadvertent instrument meteorological conditions (IIMC).

10) Rocket Launches. For rocket launches conducted at an aviation event (air show), the issuance of a CoA required by part 101 must be issued through ATO and coordinated with AST and the FSDO issuing the CoW for the Aviation Event. The following steps should be followed:

a) The event organizer will request the sponsor of the rocket launch to submit an FAA Form 7711-2 and required data for rocket launch to the jurisdictional ATC facility and make a notation on the application that this will be conducted in conjunction with an aviation event.

b) ATO will request AST to conduct a safety analysis.

c) Issuance of a rocket launch CoA at an aviation event without a satisfactory AST safety analysis is prohibited.

d) Conduct site feasibility in coordination with event organizer, rocket launch sponsor, AST, and ATO.

e) AST after completing the safety analysis will provide one of the following recommendations to the jurisdictional ATC facility and, if applicable, any special provisions that would apply.

- Satisfactory—define requirements and special provisions.
- Unsatisfactory—state reasons for disapproval.

f) Flight Standards concurrence pending review of FAA Form 7711-2 and associated documents.

g) ATO issues a CoA with appropriate special provisions and recommendation from AST.

h) Attach CoA and special provisions to CoW for the aviation event and add special provisions for rocket launch.

11) UAS Demonstrations.

a) For UAS (civil and public) demonstrations, aerial (aerobatic and nonaerobatic) demonstrations, or UAS operations during an aviation event, refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for the steps that should be followed to authorize the UAS operation of civil or public UAS at an aviation event.

b) UAS demonstrations (civil or public) require the UAS to be authorized in accordance with applicable regulations to conduct a demonstration or operation at the aviation event. A UAS demonstration planned in conjunction with an aviation event is one that takes place any time after the first spectator arrives for the event that day or when a TFR is in effect (whichever occurs first).

3-146 PARTICIPANT AND AIRCRAFT ELIGIBILITY.

A. Event Organizer Collection of Performers' Documents. In an effort to increase efficiency and reduce resources on the first day of the aviation event, the event organizer is authorized to send the responsible FSDO electronic copies of the performer, aircraft, and parachutist documentation 30 days or more prior to the event. This will allow the IIC and associated inspectors time to review the documentation prior to the aviation event. If discrepancies are discovered during the review, they can be corrected prior to the event. The FSDO should provide the event organizer with the Event Organizer Checklists for performers and for aircraft in addition to the Sample Aircraft Status and Inspection Form to collect this information from the performer in advance. The FSDO is required to explain this process to the event organizer when the application for the aviation event is received. The checklists also list the regulatory and policy references for each requirement. (See Figure 3-54, Sample Aircraft Status and Inspection Form; Figure 3-200, Sample Event Organizer Checklist – Required Aircraft Documents; and Figure 3-201, Sample Event Organizer Checklist – Required Performer/Parachutist Documents.)

1) The event organizer should send the aircraft and performer checklist to the participants as early as possible after making application for the aviation event. The performer can supply all the information electronically after scanning all required documents, and if desired, complete the Aircraft Status and Inspection Form, in lieu of logbooks, and email it to the event organizer and the IIC.

NOTE: Once the performer has created an electronic file following the checklist(s), this information can be forwarded electronically to each event organizer and IIC for each subsequent event they will be participating in to meet this requirement. The electronic file will need to be updated by the performer, as needed.

2) Each performer who has opted to submit their airman and aircraft records using this process is required to have their records reviewed and aircraft inspected on site at least one time during the aviation event season, in accordance with subparagraph c) below.

a) When a performer has submitted their airman and aircraft records to the FAA (via the event organizer) and that information has been recognized by the IIC and event organizer as having no discrepancies, those records and aircraft may not be subject to further inspection during the aviation event. Airmen and aircraft that have not already been inspected by an FAA inspector during the aviation event season (e.g., January–December) may still be subject to inspection at the aviation event.

b) The IIC will determine which performers and aircraft will be inspected at the aviation event and coordinate with the event organizer to arrange a time and place at the event before the performers' first performance to inspect the aircraft and their airman records.

c) The inspections will be arranged to ensure they do not present a distraction to performers or an interruption to their normal preparations for their scheduled performance (Golden Hour). Only the following performers or aircraft need to be inspected by the FAA at the aviation event:

1. Those performers and aircraft that did not provide their records electronically prior to event.

2. Those performers and aircraft who provided their records electronically prior to event and had a paperwork problem or safety issue that could not be resolved prior to event.

3. Those performers and aircraft identified for the one-time inspection during the aviation event season. The IIC will review the PTRS to determine which aircraft have not been inspected and select a small percentage to inspect at aviation event.

4. Those performers or aircraft where a safety issue was identified at the event.

d) The IIC or surveillance team member (FAA or designated industry representative) will utilize the Aviation Event Inspection Job Aid to ensure they have the correct information (see Figure 3-58, Sample Aviation Event Aircraft Inspection Job Aid; Figure 3-49, Sample Aviation Event Performer Inspection Job Aid; and Figure 3-60, Sample Aviation Event Parachutist Equipment Inspection Job Aid). The results will be documented in the PTRS and the completed job aid will be added to the FSDO file.

NOTE: When a designated industry representative(s) authorized by the IIC is utilized to conduct inspections of the airman and aircraft records and inspection of aircraft participating in the aviation event, the IIC must document this and authorize via a special provision (refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for procedures and example special provisions).

B. Aerobatic Competency Documentation. All civil pilots/operators, including foreign civil airmen, flying any aircraft, who perform Aerobatics–Solo or Formation, or Dynamic Maneuvering–Solo or Formation, must possess a valid SAC (FAA Form 8710-7) issued by the

FAA (or equivalent Transport Canada Form 26-0307 (see Figures 3-52 and 3-53)). Each pilot must have:

1) Successfully completed a flight and ground review by an ACE possessing authorization to administer the evaluation and make a recommendation to the FAA for the endorsement sought in accordance with the RIOs' FAA-accepted ACE manuals.

2) Met the training and proficiency requirements established by the RIOs' FAA-accepted ACE manuals.

3) Complied with the provisions of subparagraph 3-148L.

4) Shown evidence of solo or formation aerobatics and solo or formation dynamic maneuvering performance(s) or practice(s) within the previous 45 days.

5) Attended the required Participants Safety Briefing. All team members not in attendance must be briefed by the flight leader or delegate (mandatory attendance) of the details.

6) Signed the Safety Briefing Signature Form and ensured the responsible person/flight leader provided the IIC a list of the pilots flying in the formation or as part of the team.

NOTE: Aerobatic demonstrations while operating UAS must be determined in accordance with requirements found on the FAA website at https://www.faa.gov/about/initiatives/airshow/.

C. SAC Limitations – Aerobatics and Dynamic Maneuvering. All limitations on the SAC listed in subparagraphs 3-146B above must be followed in addition to the limitations listed below in subparagraphs 1) through 4).

1) Altitude. Solo or formation maneuvers and sequences/maneuvers that contain aerobatic and dynamic maneuvering must be initiated and completed at or above the altitude level listed on the SAC for each endorsement. All flybys will be conducted in accordance with the limitations established in Table 3-6.

2) Formation Teams–Aerobatics and Dynamic Maneuvering. Members of a formation team holding a SAC with a Dynamic Maneuvering–Formation endorsement, in which some or all members hold a SAC with an Aerobatic–Formation endorsement or a SAC with an Aerobatics–Solo endorsement, may perform maneuvers that mix the privileges of each performer's SAC under the following conditions:

a) Aerobatic passes/maneuvers combined with nonaerobatic formation sequences/maneuvers may occupy the flying display area at the same time only if all performers have been evaluated in the specific maneuvers as a team in an evaluation by an ACE and met the training and proficiency requirements in accordance with the RIOs' FAA-accepted ACE manuals.

b) Holders of an Aerobatic SAC card with solo endorsement may only perform aerobatic maneuvers when separated and not in formation.

c) All flybys will be conducted in accordance with the limitations established in Table 3-6.

3) Formation Teams–Aerobatics, Dynamic, and Standard Maneuvering.

a) Members of a formation team or an ad hoc group of formation pilots may not exercise the privileges of their SAC when flying in a performance with other pilots who only hold a valid industry formation credential.

b) Sequences/maneuvers flown by all pilots will be limited to those maneuvers which the least qualified pilot is authorized to perform. For example, if three pilots are flying and two have a SAC and one has a FAST credential, the entire formation will be restricted to standard formation or solo maneuvering and altitude level for the entire performance. If both pilots have a SAC, they will be limited to those maneuvers and or altitude level which the least qualified pilot is authorized to perform. All flybys will be conducted in accordance with the limitations established in Table 3-6.

4) Simulated Race–Aircraft and Vehicle (Surface-Based). A maneuvering sequence or flyby conducted by the holder of a SAC that involves a race or simulated race referencing a surface-based vehicle, such as a jet car or jet boat, shall be accomplished with the following:

- A briefing, in addition to the required Participants Safety Briefing to include, as a minimum, positioning, altitudes, airspeeds, and emergency procedures;
- The aircraft must always be offset from the surface-based vehicle; and
- The demonstration will be limited to those maneuvers and altitude level which the least qualified pilot is authorized to perform under their SAC.

D. Standard Maneuvering Flight Demonstrations. Each civil pilot who wishes to conduct standard solo and/or formation maneuvers at an aviation event (air show or flyover) must meet the following criteria.

1) Standard Maneuvering–Formation. Pilots conducting standard formation maneuvering must:

a) Be in possession of a valid industry formation credential issued by the RIO in accordance with their FAA-accepted formation manual.

b) Comply with the provisions of subparagraph 3-148L.

c) Not perform any maneuvers that qualify as dynamic maneuvering.

d) Meet the training and proficiency requirements (to include mass formations) established by the RIO's FAA-accepted formation manuals.

e) Attend a briefing given by the flight leader of the proposed flight that meets the requirements of the FAA RIO that issued the flight leader's industry formation credential.

f) Attend the required Participants Safety Briefing. All team members not in attendance must be briefed by the flight leader (mandatory attendance) of the details.

g) Sign the Safety Briefing Signature Form and ensure the responsible person/flight leader provided the IIC a list of the pilots flying in the formation.

h) Show evidence of performing or practicing their standard maneuvering formation performance(s) within the previous 45 days.

2) Standard Maneuvering–Solo. Pilots conducting standard solo maneuvering must:

a) Comply with the provisions of subparagraph 3-148L.

b) Not perform any maneuvers that qualify as dynamic maneuvering.

c) Attend the required Participants Safety Briefing. Flybys (e.g., parade or racetrack for manufacture displays or reenactments) with multiple aircraft solo or in formation conducted in-trail require attendance at a briefing given by the flight leader of the proposed flight(s) that meets the requirements of the FAA RIO that issued the flight leader's industry formation credential.

d) Sign the Safety Briefing Signature Form.

E. Required Crewmembers. With the exception of stunt persons, the special provisions of a CoW/A for an aviation event provide that only required crewmembers by aircraft type design be carried on any civil aircraft engaged in an aerial demonstration. Military aircraft require command approval, and it is recommended the following guidelines are considered. A required crewmember is prohibited from being on board a UAS or rocket. For additional persons necessary for safety to be on board a performing civil aircraft, the situation must meet the following conditions and be approved by the IIC:

1) Each required crewmember must be on board to fulfill a definite safety function, such as, but not limited to:

a) A one-time show site checkout for a qualified pilot who is unfamiliar with the site;

b) A qualified pilot flying cover for closed-course air racing;

c) A qualified person who is required to operate aircraft systems during normal or emergency conditions in flight;

d) A qualified pilot obtaining experience before inclusion as a nonaerobatic aerial demonstration team member;

e) Air race pilots during qualification training; or

f) Media personnel during non-race operations while a CoW for an air race is in effect. Not authorized if a CoW for an air show in conjunction with the air race is in effect and a performance is occurring.

NOTE: Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for legal interpretation.

2) Each pilot designated as a required crewmember must be current and have the proper qualifications for the specific make and model of a civil aircraft.

3) Each pilot designated as a required crewmember must hold a current and valid SAC with an aerobatic or dynamic maneuvering endorsement when occupying a seat of an aircraft with functional dual controls for all three axes when conducting aerobatic or dynamic maneuvering flight.

4) Each pilot designated as a required crewmember must hold a current and valid formation credential when occupying a seat of an aircraft that has functional dual controls for all three axes when conducting standard maneuvering formation flight.

F. Essential Personnel Requirements. Examples of essential personnel as determined by the IIC would include, but are not limited to: ARFF and Crash, Fire and Rescue personnel; military personnel; FAA personnel; pyro technicians; essential support crewmembers (e.g., balloon, air race (pylon crews), and UAS and rocket operators); other performers with a requirement; other participants with a requirement (e.g., jet car/boat driver, motorcycle or car driver for comedy act, pole holders, or glider wing runners); official photographers; or taxiing aircraft associated with the event. Essential personnel must meet the following conditions:

1) Attend the required Participants Safety Briefing and discuss ingress and egress from the aerobatic box/flying display area for each performance. Ensure essential personnel not authorized during a performance have exited the aerobatic box/flying display area prior to the next performance. Discuss time constraints for setting up and removing equipment/vehicles between performances. The team leader can attend and is responsible for briefing team members.

2) Wear high-visibility clothing that will easily identify them as essential personnel when in the aerobatic box/flying display area.

3) Official photographers and support crewmembers may not exceed the number agreed upon by the responsible person and the IIC to be in the specified areas at one time.

4) Essential personnel do not include news media or photographers (other than official photographers) for the event.

5) The IIC should direct event organizers to obtain industry-recognized safety guidelines for essential support crewmembers (e.g., pole holders, pyro technicians, etc.) and other pertinent information on the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/.

G. Aircraft Eligibility (Including UAS and Rocket). To be eligible to participate in an aviation event, an aircraft or rocket must be in an airworthy condition.

1) Airworthy Condition. The CoW/A-named responsible person must ensure that all of the participating aircraft or rockets have the required documentation to show the aircraft or rocket is in airworthy condition. In accordance with subparagraph 3-146A, this can be done prior to the aviation event and each performer is required to have their records reviewed and aircraft inspected onsite at least one time during the aviation event season (e.g., calendar-year) The responsible person can use the event organizer aircraft required documents checklist to ensure they have all the correct information (see Figure 3-200).

2) Examination of Condition. To ensure that all of the aircraft or rockets participating in an aviation event are in an airworthy condition, an IIC or his or her representative should examine the general condition of the aircraft or rockets and required aircraft documents, and he or she should determine if the aircraft have met the specified inspections. They can use the applicable Aviation Event Inspection Job Aid to ensure they have the correct information (see Figures 3-58 through 3-60).

3) Determining Compliance.

a) The ASI or designated industry representative should use one of the following methods to determine compliance with required inspections and ADs:

1. Review of the aircraft's maintenance records (logbook photocopy accepted), or

2. Review of a current and valid form supplied by the owner/operator:

- The completed form must be similar to the sample FAA Aircraft Status and Inspection Form (see Figure 3-54).
- The form will reflect the current status of the aircraft. If the next due dates or hours are due at the time of the aviation event, the required inspection or AD must be complied with prior to the start of the aviation event.
- The form must be signed and dated by the owner/operator.

b) Airworthiness of the rockets is to be determined by AST (or designated representative).

c) Military UAS are not issued airworthiness certificates and do not require FAA inspection. UAS with Special Airworthiness Certificates must comply with the attached operating limitations. UAS operated under an exemption may not meet an airworthiness standard. UAS operated as model aircraft must meet the CBO guidelines. UAS condition for safe operations must be determined in accordance with requirements found on the FAA website at https://www.faa.gov/about/initiatives/airshow/.

d) Military (U.S. or foreign) aircraft are not issued airworthiness certificates and do not require FAA inspection. Military aircraft leased to a manufacturer or other public entity must provide documentation of operational control, maintenance procedures, and pilot authorization/qualification. A copy of a lease is an acceptable form of documentation.

4) Aircraft Status and Inspection Form. If the Aircraft Status and Inspection Form (Figure 3-54) is utilized by the performer, the performer does not have to carry the aircraft records or copies of the records to the event.

a) The FAA recognizes the Aircraft Status and Inspection Form (electronic copy is acceptable) as a document listing the current status of the aircraft. It is the responsibility of the owner/operator to verify the information listed on the Aircraft Status and Inspection Form accurately reflects the current status of the aircraft at the time of the event.

b) If any of the next due times listed on the form are due the items will require compliance prior to the aircraft participating in the event. A new form must be submitted reflecting the change.

3-147 AIRSPACE REQUIREMENTS. FAA Form 7711-1 specifies a geographic area, both lateral and vertical, where aviation event demonstrations are authorized. This area could be quite large (e.g., 5 nautical mile (NM) radius, from the surface up to 18,000 feet MSL) or rather small (e.g., 2 NM radius from the surface up to 3,000 feet MSL), depending on the type of aviation event planned. Ensure Density Altitude (DA) has been considered when determining size of area. In determining where aerobatics will be performed within the geographic area specified on FAA Form 7711-2, the event organizer selects a site that will accommodate all the specific types of aviation event demonstrations without compromising safety or creating a hazard to any nonparticipants or spectators. It is imperative that all areas adjacent to the aviation event site containing homes, factories, major highways, traveled thoroughfares, or any occupied vessel, vehicle, or structure be carefully evaluated before making a final decision for site selection. An environmental review in accordance with Order 1050.1 is not required due to the temporary nature of a CoW/A for an aviation event. You must identify the applicable items for an aviation event as required by subparagraph 3-145C7).

3-148 MINIMUM SAFETY DISTANCES AND ALTITUDES. This paragraph provides the minimum safety distances, both horizontal and vertical, which must be maintained between aircraft in flight and the primary spectator area, secondary spectator area, congested areas, and occupied buildings during an aviation event.

A. Show Lines. For aerobatic and other flight demonstrations, an aerobatic box and show lines must be established at prescribed minimum distances from the designated spectator areas. The appropriate performers must be able to easily identify these lines on the surface.

Table 3-1. Minimum Show Line Distance From Spectator Areas, Congested Areas, and Occupied Buildings by Aircraft Category

Minimum Show Line Distance from Spectator Areas, Congested Areas, and Occupied Buildings	Aircraft Category or Aircraft Type (Includes UAS Equivalent Category), Ultralights, and Rockets	Demonstration Maneuvers Authorized
1,500 feet	Category I aircraft	Aerobatic/Dynamic/Standard
1,500 feet	Class 1, 2, and 3 rockets up to an altitude of 6,000 ft AGL	Rocket launch
1,000 feet	Category II aircraft	Aerobatic/Dynamic/Standard
1,000 feet	Helicopters/gyroplanes	Aerobatic/Dynamic
1,000 feet	Class 1 rockets up to an altitude of 4,000 ft AGL	Rocket launch
500 feet	Category III aircraft	Aerobatic/Dynamic/Standard/Flybys
500 feet	Ultralights (hang gliders, hoverboards, paragliders, jet packs, etc.) powered/unpowered	Aerobatic/Dynamic
500 feet	Powered parachute aircraft and weight-shift control aircraft	Aerobatic/Dynamic
500 feet	Helicopters/gyroplanes	Standard/Flybys
500 feet	Category I aircraft	Flybys
500 feet	Category II aircraft	Flybys
500 feet	BD-5J Microjet or equivalent UAS (> 55 pounds)	Aerobatic/Dynamic/Standard/Flybys
500 feet	Class 1 rockets up to an altitude of 2,000 ft AGL	Rocket launch
250 feet	UAS (< 55 pounds)	Aerobatic/Dynamic
100 feet	Powered parachute aircraft, ultralights (hang gliders, paragliders; others (e.g., jet packs, hoverboards, etc.)) powered and unpowered; UAS (<55 pounds)	Standard/Flybys

NOTE: The minimum distances in this table are based upon the following criteria:
For reciprocating-engine-powered airplanes—true airspeed in straight and level flight at 75 percent power at standard temperature and pressure (15 °C/sea level) and maximum certified gross weight.
For turbine engine-powered airplanes (does not include the BD-5J or equivalent Microjet)—85 percent of the maximum continuous powered straight and level flight true airspeed at standard temperature, pressure (15 °C/sea level), and maximum certified gross weight.

NOTE: The speeds in the note above are used for determining assignment to a show line, not the maximum performing speed of the aircraft. See Table 3-1A for show line category criteria. Additional analysis by AFS-800 will be needed to compute appropriate distances for this table.

B. Formation Flight Demonstrations. For formation flight demonstrations, the formation leader must adjust his or her ground track so that the critical aircraft remains, at a minimum, the appropriate distance from the designated spectator areas, depending on the show line. (See Figure 3-35, Example of Category I Aircraft Formation on Show Line; Figure 3-37, Example of Category II Aircraft Formation on Show Line; and Figure 3-41, Example of the Minimum Width of a Flying Display Area for Multiple Category III Aircraft Performing Lateral and/or Turning Maneuvers.)

C. Guidelines for Establishing Show Lines and/or Aerobatic Boxes.

1) Establish show lines prior to establishing the spectator area. If possible, the distance from a crowd line to the closest shoulder of an active runway should be at least 500 feet. This will allow demonstration teams to make formation takeoffs, performers to use the entire runway for ribbon cuts and car-top takeoffs and landings, etc. It is permissible to use a crowd line that is 500 feet from the center line of the runway in use but requires Category I airplanes to make single-ship center line takeoffs. For rocket launches it is permissible to use a crowd line that is at least 500 feet from the closest edge of the launch pad area, or further if required by the class of rocket. Consideration for nominal impact point and dispersions, as established in the rocket launch CoA, should be taken into account for show lines.

2) Use prominent features on the surface such as runway shoulders or center lines, tree lines, parked vehicles, boats (for events over water), or other geographical features to establish the show lines. Fence lines can be marked with fluorescent ribbon along the top of the fence.

3) Prescribed minimums may not be altered to accommodate obstacles that are hazards to performers (antennas, windsocks, tall trees, hangars, bridges, etc.). It is always assumed that the floor of the aerobatic box or flying display area begins at the surface. The surface is where the show lines and crowd lines are marked and measurements for prescribed minimums are taken. All show lines must be clearly discernable, to ensure that pilots have adequate visual references throughout their performance.

4) Show lines for events held at night must be lighted in a manner that ensures the lines are clearly visible and identifiable by the participating pilots.

5) Show lines for events over water must be marked in a manner that ensures the entire show line is clearly visible and identifiable by the participating pilot. Use prominent features such boats, barges, or large buoys for events over water. Two features do not make a definable straight line; a minimum of three features should be used. It is critical that anything used to define the show line is securely anchored and should be monitored throughout the event to ensure it is not moving. If such an item is moving, the event shall be stopped until it is re-secured.

6) For military demonstration teams, the Category I and Category III show lines must be discernible at least 3 miles from show center at an altitude of 200 feet; the Category I show line should be clearly visible from the highest altitude required by the applicable team or 15,000 feet over show center.

7) Any turbine engine-powered airplane for which bona fide performance data acceptable to the FAA is not available will be required to perform on the Category I show line.

Table 3-1A. Example of Airplane (Including UAS Airplane) Show Line Category

AIRPLANE (INCLUDING UAS) SHOW LINE CATEGORY	AIRCRAFT CHARACTERISTICS*	STANDARD SHOW LINE DISTANCE FROM THE SPECTATOR AREA
I	More than 245 knots (282 miles per hour (mph))	1,500 feet
II	More than 156 knots but 245 knots or less (181-282 mph)	1,000 feet
III (Single reciprocating engine and BD-5J or equivalent)	156 knots or less (180 mph)	500 feet
III (Single reciprocating engine and BD-5J or equivalent)	No more than 2,250 pounds gross takeoff weight (GTOW)	500 feet

* These are not operating limitations.

NOTE: The following criteria are the basis for the minimum distances for airplanes:

a) For reciprocating-engine-powered airplanes, knots indicated airspeed (KIAS) in straight and level flight at 75 percent power at standard temperature and pressure (15 °C/sea level) and maximum certified gross weight.

b) For turbine engine-powered airplanes (does not include the BD-5J (or equivalent) Microjet), 85 percent of the maximum continuous powered straight and level flight KIAS at standard temperature, pressure (15 °C/sea level), and maximum certified gross weight.

c) For Category III, either the speed or weight characteristic must be met.

D. Category I Show Lines. The minimum distance from the spectator area to the show line for Class 1, 2, or 3 (up to 6,000 feet AGL) rockets and Category I aircraft is 1,500 feet or greater (see Figure 3-33, Minimum Distance from Spectators, Congested Area(s), Occupied Buildings, and Secondary Spectator Areas for Category I; and Figure 3-34, Site Layout with Flying Display Area Less Than 1,500 Feet from Show Line).

1) Aerobatic maneuvers for Category I airplanes remain centered on the Category I show line and parallel to the crowd line while in the flying display area. This includes single- or multiple-airplane maneuvers (Figure 3-35).

2) If the only well-defined show line is closer than 1,500 feet to a spectator area, and if it is not possible to move the spectator area, the distance between the Category I show line and the primary spectator area may be reduced from 1,500 feet to a minimum of 1,200 feet. This reduction is authorized solely in the interest of flight safety because a well-defined show line is essential for pilot orientation. Place all artificial show lines at 1,500 feet.

3) When there is a reduction in the distance from the show line to the primary spectator area, a similar reduction shall not be permitted for the secondary spectator area side of the show.

4) In no case shall there be less than 2,700 feet between the primary and the secondary spectator areas.

5) The reduction should be determined by first considering the secondary spectator area side of the show line.

6) The show line should only be reduced as necessary to ensure the maximum safety distances are attained. An automatic reduction to 2,700 between the primary and the secondary spectator areas should not be the default.

E. Category II Show Lines. The minimum distance from the spectator area to the show line for Class 1 (to 4,000 feet AGL) rockets and Category II aircraft is 1,000 feet or greater. (See Figure 3-36, Minimum Distance from Spectators for Category II Aircraft.)

1) Aerobatic maneuvers for Category II airplanes remain no closer than the Category II show line and parallel to the crowd line while in the flying display area unless the aerobatic box is large enough to contain any aerobatic maneuver. This includes single- or multiple-airplane maneuvers (Figure 3-37).

2) If the only well-defined show line is closer than 1,000 feet to a spectator area, and if it is not possible to move the spectator area, the distance between the Category II show line and the primary spectator area may be reduced from 1,000 feet to a minimum of 800 feet. This reduction is authorized solely in the interest of flight safety because a well-defined show line is essential for pilot orientation.

3) When there is a reduction in the distance from the show line to the primary spectator area, a similar reduction shall not be permitted for the secondary spectator area side of the show line.

4) In no case will there be less than 1,800 feet between the primary and the secondary spectator areas.

5) Determine the reduction by first considering the secondary spectator area side of the show line.

6) The show line should only be reduced as necessary to ensure the maximum safety distances are attained. An automatic reduction to 1,800 feet between the primary and the secondary spectator areas, should not be the default.

F. Category III Show Lines.

1) The Category III show line will not be closer than 500 feet from the primary or secondary spectator areas.

2) If there is less than 1,000 feet between the primary and any secondary spectator areas, the site cannot be considered for an air show CoW.

3) The width of the flying display area:

a) If there are less than 1,000 feet between the primary and any secondary spectator areas, the site cannot be considered for an air show CoW. The width of the aerobatic box/flying display area must be large enough to contain the aircraft maneuvers and still ensure the safety distances for the spectators. When the flying display is only 1,000 feet between the spectator areas, a single aircraft must fly centered on the 500 feet show line when in the display area. No lateral or turning maneuvers are performed in that area and the aircraft must fly past the spectator areas and make a nonaerobatic turn to re-enter the aerobatic box/flying display area (see Figure 3-38, Single Category III Aircraft in Minimum Width Flying Display Area).

b) For multi-aircraft demonstrations the aerobatic box/flying display area must be wide enough to contain all maneuvers and/or all aircraft where no aircraft or maneuver is closer than 500 feet from a spectator area (see Figure 3-40, Minimum Width of a Flying Display Area for Category III Aircraft in Formation Flight; and Figure 3-41).

c) For single aircraft performing lateral and/or turning maneuvers the aerobatic box/flying display area must be wide enough to contain all maneuvers where the aircraft or maneuver is closer than 500 feet from a spectator area (see Figure 3-39, Minimum Width of a Flying Display Area for Category III Aircraft Performing Lateral and/or Turning Maneuvers).

4) For Class 1 (to 2,000 feet AGL) rocket launches, the closest edge of the rocket launch pad must be no closer than 500 feet from any spectator area.

5) The 500-foot show line may also be used for flybys for Category I and II aircraft. In this case, clearly delineate the Category III show line for high performance aircraft.

6) For flybys and ingress/egress routes, place corner markers on the ground to clearly identify the 500-foot lateral separation (corner) points left and right of the primary spectator area (see Figure 3-32). Corner markers must be highly visible landmarks or contrasting markers easily visible from 200 feet AGL at 200 KIAS.

NOTE: Per § 91.117(d), if the minimum safe airspeed for any particular operation is greater than the maximum speed required by § 91.117(a)–(c), the aircraft may be operated at that speed.

G. Minimum Distance Between Spectator Area(s), Congested Area(s), or Occupied Buildings and Takeoff/Landing Surface.

1) Performance Characteristics. As listed in Table 3-2, Minimum Distance Between Spectator Areas, Congested Areas, or Occupied Buildings and Takeoff Landing Surface, an aircraft's/UAS's performance characteristics will determine the minimum distance required between the spectator area and the takeoff/landing surface. The guidance pertaining to aircraft/UAS operations applies to all aircraft/UAS operating at an aviation event while the

waiver is in effect. These same safety distances are recommended to be applied starting when spectators are allowed into the show site until all spectators have left the show site.

Table 3-2. Minimum Distance Between Spectator Areas, Congested Areas, or Occupied Buildings and Takeoff/Landing Surface

Minimum Distance Between Spectator Areas, Congested Areas, or Occupied Buildings and Takeoff/Landing Surface	Aircraft/UAS/Rocket Performance Characteristics Note: All UAS must follow the requirements for equivalent aircraft listed in this table
100 feet	Powered parachute (aircraft/ultralight) and UAS (< 55 lbs).
200 feet	(1) Airplanes, gyroplanes, and weight-shift control aircraft with reference speed for final approach (V_{REF}) of 60 kts or less and a certificated gross weight of 2,500 lbs or less, including ultralights (airplanes, gyroplanes, and weight-shift control) (see Figure 3-30).
200 feet	(2) Gliders and ultralights (paragliders and hang gliders) powered and unpowered (see Figure 3-30).
200 feet	(3) Helicopters—engine start, takeoff and landing, and shutdown (see Figure 3-46).
300 feet	Airplanes and gyroplanes with a V_{REF} of more than 60 kts up to 99 kts and certificated gross weight of 50,000 lbs or less; UAS (> 55 lbs) (see Figure 3-31).
300 feet	See Note c) below.
500 feet	(1) Airplanes and gyroplanes with a V_{REF} in excess of 100 kts (see Figure 3-32).
500 feet	(2) Airplanes and gyroplanes with a certificated gross weight in excess of 50,000 lbs (see Figure 3-32).
500 feet	(3) Airplanes, gyroplanes, and helicopters conducting excessive, nonaerobatic maneuvers on takeoff or landing (car-top landing/comedy acts) (see Figure 3-32).
The minimum distances in this table for: a) Formation takeoff/landing operations: will be measured to the closest runway edge; b) Single aircraft operations conducted on the center line: may be measured to the runway center line; and c) Car-top landings: only those performers with a current and valid SAC and a car-top landing endorsement with a 300-foot limitation are authorized to maneuver nonaerobatic, take off, and land at a minimum of 300 feet from spectators, congested areas, or occupied buildings when a hard prepared surface is available and a similar surface is not available at 500 feet.	

2) Takeoffs and Landings—Aerobatic Maneuvers Conducted. When the takeoff runway is separated from the primary or secondary spectator areas by less than 500 feet for Category III; 1,000 feet for Category II; and 1,500 feet for Category I aircraft:

a) Aerobatics are never permitted over spectator areas or congested areas.

b) An aerobatic maneuver may be performed after takeoff when the aircraft has turned away from the primary spectator area and crossed the appropriate show line. (See Figure 3-42, Aerobatic Maneuvers Performed after Aircraft Beyond Spectator Area, and Figure 3-43, Aerobatic Maneuvers Performed after Turn Away Performed, for Category III aircraft examples.)

3) Helicopter Operations. As listed in Table 3-2, all helicopters must take off and land at a minimum distance of 200 feet from the spectator area during an aviation event and helicopters will not pass over spectator areas at any time, except as provided in subparagraphs 3-148H and I below, during the departure and arrival. Direction of flight must be away from the spectator area(s) for takeoff. Landing approach or ingress should be done at a 45-degree angle to the spectator area.

4) Aircraft Towing. Conduct glider, hang glider, and paraglider towing (airplane/automobile) at a minimum distance of 200 feet from the crowd. UAS towing is not authorized.

5) Engine Run Areas. The FAA requires at all aviation events:

a) Unguarded engine run areas where engines and propellers are turning must be at least 100 feet from the spectator area. Areas where aircraft with rotors are turning must be at least 200 feet from the spectator area. These distances are measured from the critical wingtip, tail, tail rotor, or rotor blade.

b) In guarded areas where engines and propellers are turning, the aircraft must be at least 50 feet from the spectator area. In areas where rotors are turning, the rotorcraft must be at least 100 feet from the spectator area. These distances are measured from the critical wingtip, tail, tail rotor, or rotor blade. All aircraft must be guarded by wing walkers, marshallers, and either crowd monitors or barriers that prevent entry by unauthorized personnel.

NOTE: These are minimum distances. Consideration should be given to increasing distances when large aircraft and/or military aircraft are operating in the engine run area or at events with spectator areas that are very congested.

H. Flight Over Primary Spectator Area.

1) Civilian and Military Aircraft. Flight over the primary spectator area is permitted when at or above 1,000 feet above the spectators. Flight is non-maneuvering and straight and level or wings level in a normal climb. Formation flight is also required to be in one direction only—back to front or front to back.

2) Military Demonstration Teams. Only when authorized by the General Aviation and Commercial Division, military demonstration teams and USAF Heritage teams are permitted to fly at a minimum altitude of 500 feet above the highest obstacle over the primary spectator area if:

a) Flight is non-maneuvering and straight and level or wings level in a normal climb; and

b) The direction of flight is in one direction only—back to front or front to back.

3) Rockets. Flight over primary spectator area is prohibited.

4) UAS. UAS operations are not authorized unless authorized by the Administrator.

I. Flight Over Secondary Spectator Areas. The responsible person will make every effort to discourage secondary spectator areas. Secondary spectator areas cannot be under the aerobatic box. Flight over the secondary spectator area is permitted by all civilian and military air show performers when the following conditions are met:

1) Minimum altitude must be no lower than 500 feet above the spectators.

2) Until the aircraft reaches an altitude of 500 feet, flight will be non-maneuvering and wings level in a normal climb.

3) For rockets, flight over secondary spectator area is prohibited.

4) UAS operations are not authorized unless authorized by the Administrator.

Table 3-6. Flyby Requirements and Limitations

FLYBY REQUIREMENTS AND LIMITATIONS

FLYBY. A pass or a series of passes, performed by one or more aircraft while in the flying display area before an invited open-air assembly of persons at an aviation event while a CoW for an aviation event is in effect. A flyby is not considered part of a performer's maneuvering sequence and therefore must be performed in accordance with the requirements listed below.

SAC – Statement of Aerobatic Competency, FAA Form 8710-7

- DMF – Dynamic Maneuvering–Formation
- DMS – Dynamic Maneuvering–Solo
- AF – Aerobatics–Formation
- AS – Aerobatics–Solo

Formation Credential – FAST/FFI:

- FAST – Formation and Safety Training
- FFI – Formation Flying, Inc.

Category Aircraft	Minimum Aircraft Category Show Line	Limitations
CAT I **CAT II** **CAT III**	**CAT III – 500 feet**	
CAT I/II/III Aircraft – Solo ➢ Standard Maneuvering–Solo ➢ Dynamic Maneuvering–Solo ➢ Aerobatic Maneuvering–Solo	**CAT III**	➢ **Standard Maneuvering–Solo** No Credential Required: Pitch ≤ 60° and/or Bank ≤ 75° Altitude ≥ 100 feet AGL Airspeed ≤ 300 kts IAS ➢ **Dynamic Maneuvering–Solo** SAC with DMS endorsement: Pitch ≤ 60° and/or Bank ≤ 90° Altitude: SAC-DMS Level II ≥ 100 feet AGL Airspeed: SAC-DMS Level II – No limitation (supersonic not authorized) ➢ **Aerobatic Maneuvering–Solo** SAC with AS endorsement: Pitch > 60° and/or Bank > 75° Altitude: SAC-AS Level I or higher – No limitation Airspeed: SAC-AS Level I or higher – No limitation (supersonic not authorized)

CAT I/II/III Aircraft – Formation ➢ Standard Maneuvering–Formation ➢ Dynamic Maneuvering–Formation ➢ Aerobatic Maneuvering–Formation	**CAT III**	➢ **Standard Maneuvering–Formation** FAST or FFI Formation Credential: Pitch ≤ 45° and/or Bank ≤ 60° Altitude ≥ 250 feet AGL Airspeed ≤ 250 kts IAS Formation separation is not authorized in the flying display area (see subparagraph 3-146D1)) ➢ **Dynamic Maneuvering–Formation** SAC with DMF endorsement: Pitch ≤ 60° and/or Bank ≤ 75° Altitude: SAC DMF Level II ≥ 250 feet AGL Airspeed: SAC DMF Level II – No limitation (supersonic not authorized) ➢ **Aerobatic Maneuvering–Formation** SAC with AF endorsement: Pitch > 60° and/or Bank > 75° Altitude: SAC-AF Level I or higher ≥ 250 feet AGL Airspeed: SAC-AF Level I or higher – No limitation (supersonic not authorized)

All Aircraft: ➢ Maneuvering sequence may not be interrupted to perform a flyby. ➢ Flyby may only be performed before or after the sequence is completed. ➢ The limits of this chart do not apply to the maneuvering sequence. The limits of the SAC apply during the maneuvering sequence. ➢ No abrupt maneuvers between the corner markers may be performed along the Category III show line. ➢ Flyby must be conducted in accordance with subparagraph 3-148L. ➢ Supersonic flight not authorized.	**Military Aircraft:** ➢ Sanctioned military demonstration teams with an FAA-approved maneuvers package must comply with the limits approved. ➢ All other military pilots must comply with the flyby requirements and limitations.

J. Repositioning Turns.

1) Return to the Flying Display Area/Aerobatic Box. Conducting repositioning turns having an energy vector directed towards the primary spectator area, and in accordance with subparagraph 3-148L, made for the purposes of returning to the flying display area or

aerobatic box to realign with the appropriate category aircraft show line, must be completed as follows:

a) Civilian performers.

1. Pilots who hold a SAC with an Aerobatic endorsement (Solo or Formation) and flying Category III or Category I and Category II ex-military fighters are permitted to perform repositioning turns for the purposes of returning to the flying display area or aerobatic box using a maximum of 120 degrees of bank and 90 degrees of pitch when above 500 feet AGL and not over designated spectator areas or congested areas.

2. Pilots who hold a SAC with a Dynamic Maneuvering–Solo endorsement are permitted to perform repositioning turns using a maximum of 90 degrees of bank and 60 degrees of pitch when above 500 feet AGL when not over designated spectator areas or congested areas. Formation not authorized.

b) Military jet demonstration teams and single-ship demonstration teams for the purposes of returning to the flying display area or aerobatic box:

1. Military demonstration teams with accepted maneuvers packages are permitted to exceed a maximum of 120 degrees of bank and 90 degrees of pitch;

2. Pitch and bank angles must not exceed standard operating procedures prescribed for the specific aircraft; and

3. Inverted flight is not authorized below 1,500 feet AGL and not over congested areas or spectator areas.

2) Inside the Flying Display Area/Aerobatic Box. When it is not practical to leave the flying display area or aerobatic box in between segments of a flight performance, repositioning turns that have an energy vector directed towards the primary spectator area, in accordance with subparagraph 3-148L, and are made for the sole purpose of remaining in the flying display area and realigning with the appropriate Category show line are permitted in accordance with the following:

a) Pilots who hold a SAC with an Aerobatics–Solo or Dynamic Maneuvering–Solo endorsement are permitted to perform repositioning turns and/or clearing turns to a maximum 90 degree bank. Pilots who hold a SAC with a Dynamic Maneuvering–Formation endorsement can perform repositioning turns using up to 75 degrees of bank. Pilots who hold an industry formation credential can perform repositioning turns using up to 60 degree angle of bank.

b) The turns are carried out without abrupt control inputs during the portion of the turn when the aircraft is directing energy at the crowd.

c) The turns are conducted in a manner to ensure the aircraft remains beyond the appropriate distance for their show line category (i.e., 500 feet for Category III; 1,000 feet for Category II; 1,500 feet for Category I).

K. Ingress and Egress Routes Into and Out of the Flying Display Area/Aerobatic Box.

1) All Civil and Military Aircraft. For flight over congested areas adjacent to flying display areas/aerobatic box:

a) Section 91.119(a) will not be waived for aerial demonstration purposes. Section 91.119(a) requires that all pilots must always operate an aircraft at an altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface, except when necessary for takeoff or landing.

b) Aerobatic maneuvers are prohibited.

2) All Civil and Military Aircraft (Except for Sanctioned Military Demonstration Teams). For flight over congested areas adjacent to the flying display area/aerobatic box:

a) Minimum Altitude. At least 1,000 feet above the highest obstacle within a radius of 500 feet from the aircraft. This requires § 91.119(b) to be waived for lateral limits.

b) Ingress from Adjacent Congested Areas to Flying Display Area/Aerobatic Box. Aircraft entering a flying display area/aerobatic box from over a congested area are permitted to leave the minimum altitude specified above in subparagraph a) to complete a smooth transition to the performance altitude on the flight line; however, the angle of descent should not be lower than a normal approach for that aircraft type (i.e., steeper-than-normal approaches are not permitted).

c) Egress from Flying Display Areas/Aerobatic Box to Adjacent Congested Areas. Aircraft exiting a flying display area/aerobatic box to a congested area should climb at a rate consistent with the safe operation or best pitch attitude for that aircraft type. If extended flight over the congested area is expected, compliance with the minimum altitude specified above in subparagraph a) is required (see Figure 3-48, Aircraft Approach and Exit to and from a Flying Display Area Bordered by Congested Areas).

L. Air Show Maneuvers Toward Primary Spectator Area. The categories for air show maneuvers towards the primary spectator area are as follows:

- Unacceptable level of risk—prohibited.
- Acceptable level of risk—no approval required.
- Acceptable level of risk—approval required.

1) Prohibited Maneuvers.

a) Maneuvers that put the aircraft in an aerobatic attitude while the energy vector of the aircraft is directed at the primary spectator area between the corner markers are prohibited. Aerobatic maneuvers that, in the event of a catastrophic failure, a part of the aircraft would contact the surface at or inside the primary spectator area between the corner markers, are

prohibited. Maneuvers of this type include inverted flight, pulling to the vertical, and loops where the energy vector is directed at the primary spectator area during the maneuver.

b) Rocket launches conducted inside the aerobatic box that, in the event of a catastrophic failure, might result in a part of the rocket contacting the surface inside the primary spectator area between the corner markers, are prohibited.

2) Permitted Maneuvers—No Approval Required. The following maneuvers are permitted without any additional approval:

a) Aerobatic maneuvers by a single aircraft, by multiple aircraft, or aircraft in formation in which the aircraft, but not the actual energy vector, is momentarily pointed towards the primary spectator area. For example, a spinning maneuver that has the energy vector of the aircraft directed toward the ground, but may briefly have the nose of the aircraft directed at the crowd, will be permitted. Similarly, a humpty-bump maneuver in which the direction of the aircraft is briefly directed at the crowd when the aircraft has nearly zero air speed is also permitted. Maneuvers of this type include spins, tail slides, torque rolls, humpty-bumps, and flops, as well as hammerhead turns and tumbles or lomcovaks whose flightpaths are parallel to the show reference line.

b) High energy maneuvers such as minimum radius turns (maximum of 90 degrees of bank) by a single aircraft on the appropriate show line for the aircraft category in accordance with the following (see Figure 3-47, Maneuvers Toward the Primary Spectator Area – 360 Degree Turns Using Bank Angles of Less Than 90 Degrees):

- Category III aircraft—maximum altitude of 250 feet,
- Category II aircraft—maximum altitude of 300 feet, and
- Category I aircraft—maximum altitude of 500 feet.

c) Nonaerobatic maneuvers by a single aircraft, by multiple aircraft, or aircraft in formation with an energy vector directed towards the primary spectator area provided the aircraft/UAS remains beyond the appropriate show line for aircraft category (i.e., 500 feet for Category III; 1,000 feet for Category II; 1,500 for Category I). (See Figure 3-44, Nonaerobatic Maneuvers by a Single Aircraft with an Energy Vector Directed Toward the Primary Spectator Area.)

d) Nonaerobatic formation maneuvers (e.g., flybys) that may direct momentary, but not sustained, energy toward the primary spectator area, except during any formation separations, formation configurations/position changes, or rejoins. This does not apply to nonaerobatic formation maneuvers conducted in accordance with subparagraph c).

e) Flight over the spectator areas in accordance with subparagraphs 3-148H and I.

f) Repositioning turns in accordance with subparagraph 3-148J.

g) All other maneuvers that do not direct an energy vector at the primary spectator area.

h) Class 1 rocket launches in accordance with subparagraph 3-145E10).

3) Permitted Maneuver—Approval Required. The following maneuvers are prohibited unless approved in accordance with the General Aviation and Commercial Division maneuver packages approval/acceptance process in Volume 3, Chapter 6, Section 3:

a) Aerobatic maneuvers which direct an energy vector toward the primary spectator at any point, other than those described in subparagraph 1), which are prohibited.

b) Nonaerobatic formation or multiple aircraft maneuvers in which a sustained energy vector of one or more aircraft is directed at the primary spectator area unless authorized in subparagraph 2).

c) Aerobatic 360 degree turns with an energy vector directed towards the primary spectator area that exceed the requirements of subparagraph b) above:

- For single aircraft; or
- Multiple aircraft.

d) Class 1 or 2 rocket launches in accordance with subparagraph 3-145E10) (safety analysis from AST).

M. Night Demonstrations. Event organizers may request authorization to conduct aerial demonstrations at night. Night is defined as the time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time. Inspectors can accommodate such requests by ensuring that the following has been accomplished:

1) The responsible person must thoroughly review the night aerial demonstrations in the Participants Safety Briefing.

2) Aerobatic demonstrations at night shall be confined to 1 NM on either side of the show center along a well-defined, lighted show line from 500 feet AGL up to but not including 5,000 feet AGL.

3) The minimum weather conditions at night require a cloud base no lower than 2,500 feet and visibility of at least 3 statute miles (sm). Inspectors shall not waive § 91.155 for any flight conducted at night.

a) Aircraft position lights must be operating from sunset to sunrise except while pyrotechnics on the aircraft are illuminated unless § 91.209 is waived.

b) Inspectors should only waive § 91.209 if the flight is conducted totally within Class B, C, D airspace or when a TFR is effective.

4) UAS demonstrations may be approved at night if a part 107 CoW is issued or an exemption is issued for UAS greater than 55 pounds, in accordance with the procedures established on the FAA website at https://www.faa.gov/about/initiatives/airshow/ (refer to this website for the steps that should be followed to make the necessary changes to authorize the UAS operation at an aviation event).

5) Rocket launches may be approved at night with the approval of ATC and AST. The rocket must have light-emitting devices attached.

6) In addition to the applicable Air Show Special Provisions listed on the FAA website at https://www.faa.gov/about/initiatives/airshow/, include the Night Special Provisions.

N. Airborne Pyrotechnic Demonstrations. Event organizers may request authorization to conduct airborne pyrotechnic demonstrations during the day or at night when submitting FAA Form 7711-2. These demonstrations are typically conducted by performers managing the pyrotechnic devices attached to the aircraft. Inspectors can accommodate such requests by ensuring that the following requirements have been accomplished:

1) The responsible person must thoroughly review the use of airborne-based pyrotechnics in the aviation event's Participants Safety Briefing. (See subparagraph N above and refer to the FAA website at https://www.faa.gov/about/initiatives/airshow/ for the Airborne Pyrotechnics Checklist.)

2) The pyrotechnic installation must be appropriately documented in the aircraft's maintenance records.

3) Pyrotechnics shall not be illuminated over persons at any altitude. In addition, airborne pyrotechnic demonstrations shall be conducted from 500 feet AGL up to, but not including, 5,000 feet AGL.

4) In addition to the applicable Air Show Special Provisions listed on the FAA website at https://www.faa.gov/about/initiatives/airshow/, include the Airborne Pyrotechnic Special Provisions. If airborne pyrotechnics will be deployed at night, the Night Special Provisions must also be issued.

O. Ground-Based Pyrotechnics. Event organizers may request authorization to conduct ground-based pyrotechnic demonstrations when submitting FAA Form 7711-2. If the ground-based pyrotechnics will be installed and/or detonated anywhere on the airport surface, coordination with the ARP Division may be required (see subparagraph 3-145E5)). Event organizers should ensure that the demonstrations are in compliance with any applicable permitting requirements or ordinances, or in the absence of local requirements, recommend they be conducted in accordance with NFPA 1123, Code for Fireworks Display. In addition, inspectors must ensure the following requirements have been accomplished:

1) The event organizer must thoroughly review the use of ground-based pyrotechnics in the Participants Safety Briefing. The pyrotechnic shooter in charge (PSIC) must complete the Ground-Based Pyrotechnic Briefing in accordance with the Ground-Based Pyrotechnic Industry Guidelines. The pyrotechnic briefing card must be used. (Refer to the FAA National Aviation

Events Program website at https://www.faa.gov/about/initiatives/airshow/ for the Ground-Based Pyrotechnic Guidelines and briefing card.)

2) Ground-based pyrotechnics shall not be placed on and/or detonated in any safety area(s) defined by part 139, § 139.309, and described in the airport certification manual if any certificated air carrier or commercial operator will be conducting revenue operations on the adjacent airport movement area(s) during the time period beginning when ground-based pyrotechnics are installed and ending when the ground-based pyrotechnics have been expended and/or safely removed and secured.

3) For all other public use airports, ground-based pyrotechnics shall not be placed on and/or detonated in any safety area(s) as defined in AC 150/5300-13, Airport Design, Table 3-1, Table 3-2, or Table 3-3, as appropriate, if any nonparticipating aircraft will be operating on the adjacent airport movement area(s) during the time period beginning when ground-based pyrotechnics are installed and ending when the ground-based pyrotechnics have been expended and/or safely removed and secured.

4) If nonparticipating aircraft operations will be restricted to provide adequate separation from ground-based pyrotechnics to ensure the safety of the aircraft relative to the use of ground-based pyrotechnics, the restricted movement plan must be approved by the airport manager and/or other appropriate official(s).

5) Verify a qualified PSIC will be used for the event.

6) In addition to the applicable Air Show Special Provisions listed on the FAA website at https://www.faa.gov/about/initiatives/airshow/, include the Ground-Based Pyrotechnics Special Provisions.

NOTE: It is common for an event organizer to plan a fireworks display at the conclusion of an aviation event. Typically, the installation of the fireworks takes place prior to the commencement of the aviation event; therefore, it is important that all participants know the location of the fireworks. Commercial fireworks or pyrotechnics are classified as explosive devices. If fireworks are installed and/or detonated anywhere on the airport surface, the Ground-Based Pyrotechnic Special Provisions must be issued and the location briefed at the required Participants Safety Briefing.

P. Passenger and Emergency Helicopter Operations. During some aviation events, helicopters take passengers for rides or serve as emergency vehicles. The responsible person, in conjunction with the helicopter operator, will establish a comprehensive operation plan, to include egress and ingress routes that do not overfly spectator areas at low altitudes and will not interfere with performers or other operations conducted during the event. This plan will be briefed at the required Participants Safety Briefing. The following guidelines will be adhered to:

1) Startup and shutdown areas for helicopters will be:

a) Located at a minimum distance of 200 feet from the crowd or passenger waiting areas and measured from the critical wingtip, tail or tail rotor, or rotor blade.

b) Protected by appropriate barriers and/or crowd management personnel to prevent unauthorized persons from entering these areas.

c) Located to prevent the helicopter from passing over spectators during takeoff or landing.

2) Pilots must receive the required Participants Safety Briefing by the same briefer unless relief is granted by the IIC for a different briefer to give the briefing due to remoteness of helicopter operations in reference to the event (attendance at the Participants Safety Briefing is highly recommended).

3) Refueling procedures for operations conducted during the event hours must be approved by the IIC.

4) Helicopter operations will not be permitted during military demonstration team performances, rocket launches, parachuting operations, or when a civilian performer requests all helicopter operations be suspended during their performance. The IIC may permit helicopter operations during parachuting operations if the operations are 1,000 feet from rotors turning from the parachuting landing area to not be a safety hazard (e.g., Air Venture at Oshkosh, where the helicopter operations are at a separate location from the main airfield).

Q. Helicopter Demonstrations.

1) Helicopter Acts Involving External Load Operations. Air show acts that are considered Class B, C, or D external load operations, will not be conducted over persons on the surface unless those persons are part of the act and must be conducted in accordance with 14 CFR part 133 and the provisions of the waiver. Military helicopters need not comply with part 133 but must comply with the provisions of the waiver.

2) Helicopter Acts Involving Aerobatic Maneuvers. Helicopters may perform aerobatic maneuvers no closer than 1,000 feet horizontally from designated spectator areas.

3) Helicopter Acts Airworthiness Certificate Requirements. Helicopters performing aerobatic maneuvers must have a valid and current special airworthiness or experimental certificate issued in the experimental category for the purpose of exhibition. Nothing contained in these special provisions of the CoW should be contrary to any operating or special limitation issued as a part of that special airworthiness or experimental certificate. They may be authorized as a platform for parachute demonstrations.

4) Helicopter Abrupt Maneuvers. Helicopters may not perform nonaerobatic abrupt maneuvers closer than 500 feet horizontally from a spectator area.

5) Helicopter Aerobatic Performers. Helicopter performers are limited to the aerobatic maneuvers as listed on their SAC.

R. Air Carrier Aircraft Demonstrations. Flight demonstrations may be conducted under the provisions of a CoW issued for an air show by any certificated air carrier with a large (more than 12,500 lb gross takeoff weight (GTOW)) aircraft listed on that certificate. The

limitations are more restrictive than the requirements for standard maneuvering. The event organizer in conjunction with an air carrier must request authorization to conduct a flight demonstration at an air show, at least 45 days prior to the event. The event organizer must provide the following information supplied by the air carrier when making application for a CoW or adding this aircraft as an additional flight demonstration during the air show:

1) The air carrier will develop a performance package that describes in detail the entire flight profile. The performance package will specifically address the make and model of the aircraft and take into consideration any specific flight safety conditions of that aircraft.

2) A special provision should be developed with the following limitations:

- Minimum altitude—300 feet AGL;
- Maximum bank—30 degrees;
- Maximum pitch—30 degrees;
- Maximum speed—300 knots;
- Minimum speed—VREF for the configuration and weight of the aircraft, or as required for the go-around sequence; and
- Touch-and-go landings should be permitted only when the air carrier has addressed the crew procedures, the runway requirements, and the abort procedure in detail.

3) Coordination with the air carrier's Principal Operations Inspector (POI) is necessary before approval by the IIC, as well as documentation of authority (FAA LOA through the provisions contained in the WebOPSS operations specification (OpSpec) A001, subparagraph d) from the air carrier to conduct the flyby demonstration in accordance with the approved flight profile.

4) Required crewmembers must show evidence of performing or practicing their demonstration:

- As a designated paired crew for the demonstration;
- May be in an approved simulator that represents the make and model of the demonstrated aircraft; and
- Within the previous 45 days.

5) This practice may be in an approved simulator that represents the make and model of the demonstrated aircraft.

6) Only required crewmembers by aircraft type design may be carried on any civil aircraft engaged in an aerial demonstration. (See subparagraph 3-146E.)

NOTE: This may apply to transport category aircraft not being conducted under an air carrier certificate (e.g., 14 CFR part 121). Apply the above safety parameters when approving a demo for a manufacturer (e.g., Airbus, Boeing, 14 CFR part 125).

S. Ultralight Vehicle Demonstrations. An ultralight vehicle is only a single place vehicle and must meet the applicability of 14 CFR part 103, § 103.1 and operate as an ultralight vehicle under part 103. The FAA does not require certification of ultralight vehicle operators meeting the provisions of § 103.1. It is important to remember that an ultralight vehicle that has been certificated as an experimental aircraft and no longer operates under part 103 must meet the same requirements as a conventional aircraft; this includes aircraft operating limitations, pilot certification, and statement of aerobatic competency.

1) Aerobatic flight demonstrations by ultralight vehicles should be included on a CoW, with appropriate special provisions. The applicant must provide the issuing office with a statement of determination that the vehicle meets the requirements of § 103.1 or authorized under an exemption to part 103, and the operator is able to conduct the proposed demonstration without creating a hazard to persons and property on the surface. The statement should contain a summary of how the determination was made. The IIC determines if the statement is suitable. The IIC may require a demonstration prior to making a determination. For additional support, contact the General Aviation and Commercial Division. (Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for a sample statement of determination.)

2) Ultralight vehicles must meet the same separation standards as Category III aircraft or as required in Table 3-2 above.

3) Wing walking acts using ultralight vehicles are not authorized for operation as an ultralight vehicle operated in accordance with part 103. Only certificated aircraft may be used for this type operation.

4) Ultralight vehicles may not be operated for compensation or hire; therefore, ultralight pilots may not receive compensation for participation at aviation events.

T. Experimental and Special Light-Sport Aircraft Including UAS. The aircraft/UAS can be flown acrobatically if it is airworthy or in a condition for safe operation and not prohibited from aerobatic flight. The performer must provide to the IIC documentation of the aerobatic maneuvers authorized in accordance with the aircraft operating limitations. The IIC should consult with the Airworthiness inspector, or UAS focal point for UAS aircraft, regarding suitability.

U. Wing Walking and Aerial Transfer. Performers who hold a current and valid SAC with an endorsement for wing walking or aerial transfer are authorized to conduct these types of acts. Section 91.107(a)(2) and (3) may need to be waived for stunt persons only. All helicopter trapeze acts must comply with the applicable requirements of part 133 concerning helicopter external load combination Class B or D operations. Overflight of the designated spectator areas for these acts is prohibited.

V. Glider Demonstration. The following criteria apply only to glider operations:

1) Motorized/self-launching and non-motorized gliders fall into the Category III aircraft group. Category III aerobatic box and performance distances apply.

2) Unless obstructions are present that would make a taxiway takeoff unsafe, it should be permitted with a minimum distance of 200 feet from the primary spectator area (see Figure 3-30, Minimum Separation Distance (200 Feet) Between Runway or Takeoff Area and the Primary Spectator Area). This distance may be reduced to 150 feet if the takeoff path is at an angle of at least 10 degrees away from the spectators.

3) Landings may be approved on the taxiway used for the takeoff as long as there are no obstructions or adverse wind conditions that would create a hazard to the spectators. If the landing approach requires a low altitude turn over the spectators, landing on a taxiway is not permitted. After landing, the aircraft must come to a full stop at least 50 feet from spectators.

W. Agricultural Aircraft Demonstration. In addition to the applicable air show special provisions listed on the above-mentioned websites, include the appropriate agricultural aircraft special provisions for events that have agricultural aircraft aerobatic demonstrations.

X. Compensation at Aviation Events.

1) To receive any type of compensation (e.g., monetary payment, fuel, oil, lodging, or rental cars) for flight activities at an aviation event, an airman must have a Commercial Pilot Certificate, applicable category and class rating, and second-class medical certificate, if a medical certificate is required for the aircraft operation. The aircraft/UAS must be certificated for operations that allow compensation or hire. Additionally, if passengers or property are carried for compensation or hire, the aircraft/UAS must be certificated to allow for those types of operations.

2) In accordance with § 91.315 or § 91.319(a)(2), aircraft issued a limited or experimental airworthiness certificate may be authorized to be operated for compensation or hire without any passengers or property on board.

3) Prize money awarded on the basis of competition is not compensation.

4) The responsible person should ensure that all operators who carry passengers for hire in aircraft issued a limited or experimental airworthiness certificate must comply with the regulations (refer to § 91.315 or § 91.319(a)) or have an exemption authorizing the conduct of the flight.

5) Additionally, all FAA inspectors conducting surveillance should be vigilant in monitoring activities that involve passenger rides at an aviation event. They should conduct an investigation when they become aware of operations conducted in an aircraft or by a pilot who may be operating contrary to regulations.

6) IICs should conduct an investigation when they become aware of any performers who may only hold a private pilot certificate (or less) and appear to be receiving compensation while performing or giving rides in aircraft.

7) There are several different organizations that give rides in experimental aircraft not for compensation and may be specifically authorized per the regulation, under an FAA exemption, or under an FAA interpretation (e.g., Young Eagles and Kids in Flight). It is the

responsibility of the event organizer to ensure they understand the limitations of all the exemptions, interpretations, and how the aircraft are being operated during the aviation event. Contact the General Aviation and Commercial Division for additional information.

a) LHFE exemptions provide operators relief from several FAA regulations. This exemption allows holders to carry passengers for compensation or hire in historically significant aircraft holding a limited or experimental airworthiness certificate. The LHFE exemption does not authorize aerobatic and formation flight under the conditions of the exemption, in addition to other additional limitations. Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for a list of LHFE exemption holders.

b) Sightseeing/air tour rides conducted for charity in standard category aircraft must be conducted under § 91.146 or § 91.147.

1. Aerobatic and formation flight is not authorized under the conditions of the rule, in addition to many other additional limitations. This includes specific reporting requirements that must be complied with by the event organizer.

2. Any passenger-carrying flights in a standard category helicopter or airplane for compensation or hire not conducted by a certificated air carrier must be conducted under § 91.147 and issued an LOA by the operator's responsible FSDO (verifiable via WebOPSS). Section 91.147 does not apply to balloon events.

3-149 MILITARY PERFORMANCES.

A. General. The guidelines in this paragraph apply to military aircraft, pilots, and parachute teams specifically designated and sanctioned by the respective branch of military in coordination with the FAA to perform missions for the U.S. DOD and the Canadian DND.

1) The U.S. DOD-sanctioned military teams are the USN Blue Angels, the USAF Thunderbirds, the USAF single-ship demo team (e.g., A-10, F-15, F-16, F-22, and F-35), the USN single-ship demo team (e.g., F-18), the USN Leap Frogs, and the U.S. Army Golden Knights. The Canadian DND-sanctioned military teams are the Canadian Forces Snowbirds, the Canadian Forces single-ship demo team (e.g., CF-18), and the Canadian Forces SkyHawks parachute team. Their contact information is listed on https://www.faa.gov/about/initiatives/airshow/.

2) The DOD/DND-sanctioned military demonstration teams are not exempt from any regulation or policy that is used in issuing a CoW or CoA unless specifically stated in their FAA-accepted LOA recognizing the DOD/DND command guidance/orders/instruction. They must conduct their demonstrations in accordance with this section.

3) The FAA does not issue any blanket special approvals, authorizations, waivers, or blanket exemptions that would pertain to all military performances. The DOD/DND has agreed to approve participation at official events only when safety is not compromised.

4) The sanctioned North American military demonstration teams have maneuver packages that are approved each year and/or they have command guidance/orders/instruction that are reviewed annually and pertain only to the team for which it was approved.

5) Forward any outside complaints received by the FAA as a result of the aerial demonstration to the designated military representative for disposition and document in the PTRS. Direct any questions by FAA representatives involving a military team to the appropriate team.

6) Enforcement action against any military team or performer will be conducted according to current FAA policy (refer to FAA Order 2150.3, FAA Compliance and Enforcement Program). When enforcement action is initiated, the IIC must notify the NAES through the assigned AES within 24 hours and provide a briefing paper.

7) All accidents and incidents must be reported to the NAES by the IIC through the assigned AES within 24 hours and provide a briefing paper. The identification/contact information of the delegated military IIC must be identified in the briefing paper. The IIC shall offer any support or resources needed to support the investigation. All media inquiries shall be directed to the military public affairs office.

8) The event organizer is responsible for providing the IIC (and the military demonstration team if required in support manual) with the following: current templates, maps, and aerial photographs of the required airspace for the event, to support conducting the feasibility study/onsite survey and DD Form 2535.

a) A current aerial photograph or topographical chart (or equivalent, e.g., Google Maps) depicting the Category I show line, aerobatic box, aerobatic demonstration area, required for the approved maneuvers package, ingress/egress routes, and DD Form 2535.

b) A current 7.5-minute series Topographic Quadrangle Maps, published by the USGS (scale 1:24,000) or equivalent will be required to conduct the feasibility study/onsite survey depicting ingress/egress routes, indicating the minimum altitudes requested, the 500 foot lateral distance of the end of the primary spectator area, and any other secondary open-air assemblies of persons and for conducting flights below 500 feet AGL. See the example map in Figure 3-25 below.

Figure 3-25. Sample 7.5-Minute Series Topographic Quadrangle Map

B. Sanctioned Military Jet Demonstration Teams. This subparagraph pertains only to the sanctioned North American military jet demonstration teams, USN Blue Angels, the USAF Thunderbirds, and the Canadian Forces Snowbirds. The General Aviation and Commercial Division will distribute copies of the General Aviation and Commercial Division LOA, FAA-accepted and command-approved maneuvers packages, and the list of pilots who may perform at aviation events to the AES and will be available on the FAA website at https://www.faa.gov/about/initiatives/airshow/. See Volume 3, Chapter 6, Section 3 for the FAA approval/acceptance process.

1) The sanctioned North American military jet demonstration teams provide the General Aviation and Commercial Division the command-approved maneuvers packages, to include a list of command-approved pilots who are authorized to conduct the aerial demonstrations, and the team representative(s) designated to attend briefings for the team.

a) A USN Winged Naval Aviator or Naval Flight Officer listed as a team member meets the requirement for an authorized team representative (e.g., tactical weapons officer).

b) These teams normally will conduct preseason meetings with the event organizer and jurisdictional FAA offices. These meetings will usually occur in the winter months before the start of the air show season. Participation in these meetings is mandatory for the responsible FSDO. It is incumbent upon the event organizer to notify the responsible FSDO with ample time to send a representative to the meeting. The FSDO will notify the AES of the meeting. Additionally, the military jet demonstration teams will provide the NAES with meeting

dates, times, and locations. The NAES will coordinate this information with the AES, who will ensure a representative from the FSDO is present.

2) The event organizer must ensure that ample time is set aside during this meeting, and it is imperative to review site feasibility in detail with the event organizer, FSDO representative(s), and military jet demonstration team representative at this meeting. The representative from the team will provide the FSDO with the results of a completed onsite survey and a copy of the approved DD Form 2535. This will include, but is not limited to, the placement of the aerobatic box and impact on the nonparticipating public on the surface within the boundaries of this aerobatic box, review of proposed ingress/egress routes that will require FAA FSDO approval, all conditional requirements on DD Form 2535, and any impact on scheduled air carrier operations. Discuss whether § 91.119(b) and (c) is waived and establish an understanding that the following must be met if waived:

a) Each pilot must always be in compliance with § 91.119(a).

b) The CoW is only for nonaerobatic flight while temporarily exiting or returning to the aerobatic box.

c) The CoW authorizes essential personnel and their vehicles or vessels to be positioned closer than 500 feet from the performing aircraft.

d) Waive § 91.119(b) and (c) for flight over structures, roads, vehicles, or vessels under the following conditions for the USAF Thunderbirds, USN Blue Angels, and Canadian Forces Snowbirds:

- When the show line is generally aligned with a runway at an active airport;
- When ingress and egress transition of the operating area coincides with established approach or departure paths used for the designated runway;
- When aerobatic flight will not be conducted over any nonparticipating persons; and
- When nonaerobatic flight over nonparticipating persons is not closer than 500 feet, but may be as low as 200 feet above occupied structures, roads, vehicles, or vessels, and no less than 500 feet laterally from the ingress/egress route while flying within 3 NM from the show center.

e) The results of the meeting should be documented in the PTRS.

3) Sanctioned military jet demonstration teams must coordinate any change considered to an FAA-accepted and command-approved maneuvers package or the addition or removal of a pilot authorized to fly under the prescribed maneuvers package with the NAES as soon as possible. These changes are not authorized until accepted or approved by the Commanding Officer (CO) for the team, the General Aviation and Commercial Division, and the NAES. A change to the approved maneuvers package or command-approved pilot list after the General Aviation and Commercial Division LOA has been issued may require an amendment to

the LOA and/or additional review of the demonstration team in accordance with Volume 3, Chapter 6, Section 3.

4) Sanctioned military jet demonstration teams may conduct an arrival demonstration. This normally consists of several passes for visual familiarity with existing landmarks and maneuvers practice using these landmarks. The arrival demonstration is limited to flight along the ingress and egress routes and within the aerobatic box as specified in the FAA-accepted maneuvers package. The teams must coordinate details of the arrival demonstration in advance, so the event organizer can ensure the application for the CoW reflects what is needed. This pre-coordination should be accomplished at the preseason meeting.

a) The arrival demonstration must be previously approved, coordinated with the event organizer/air boss and IIC, and meet all FAA regulations, minimum altitudes, maneuvers packages (ingress and egress routes), and requirements as stated in the CoW and special provisions. The main difference between the arrival demonstration and a regular demonstration is that the normal size crowd is not present, which may require an adjustment for crowd management.

b) The team advance coordinator or operations officer may accept the arrival demonstration briefing and relay all necessary information to the team if the team representative is a rated aviator and approved by the IIC. Briefings with the team representative must be completed before the team's arrival at the demonstration site. It is mandatory that the IIC or IIC's representative is present at this briefing and the results of this briefing must be documented in the PTRS.

5) The FAA-accepted and command-approved maneuvers packages describe each demonstration maneuver in detail and specify ingress/egress routes. Refer to the General Aviation and Commercial Division LOA for specific requirements that must be complied with in the FAA-accepted maneuvers package.

6) At a site where the USN Blue Angels, the USAF Thunderbirds, or the Canadian Forces Snowbirds are appearing, flight over congested areas adjacent to flying display areas/aerobatic box, along the ingress and egress routes must be carried out as follows:

a) They are authorized to fly nonaerobatic at 500 feet above obstacles and/or occupied buildings when within 3 NM of show center.

b) The opposing solos are authorized to descend below 500 feet AGL when within 3 NM from show center along established ingress and egress routes, over occupied structures, roads, vehicles, or vessels in a wings-level shallow descent, to arrive at 200 feet AGL before reaching 1 NM from show center.

c) On a case-by-case basis, where it is deemed a safe transition to the next maneuver, the IIC may authorize (waive § 91.119(b) and (c)) the sanctioned military jet demonstration teams for flight over structures, roads, vehicles, or vessels under the following conditions to fly along specified ingress/egress routes within 3 NM from show center, as low as 200 feet above the highest obstacle (within a 500 foot horizontal radius), provided the following conditions are met:

1. A request from the CO is provided in the maneuvers package for each show site where this is needed or as a blanket request to be considered at each show site.

2. A representative of the military jet demonstration team will conduct an onsite survey during the current air show season (preferably at the preseason meeting) and the results will be provided in writing with aerial diagrams and charts to the event organizer and IIC and discussed at the preseason meeting (in person or via telecom) to ensure all parties have a thorough understanding.

d) A comprehensive feasibility study/review (onsite or offsite) of the flying display areas/aerobatic box, and along the ingress and egress routes is required to be accomplished prior to each event by the sanctioned military jet demonstration team, the IIC, and the event organizer.

1. The USN Blue Angels conduct a comprehensive onsite review each year during the winter meetings.

2. The USAF Thunderbirds conduct a comprehensive onsite review every 5 years or if there has been a significant change it is done sooner during the winter meetings.

3. The Canadian DND Snowbirds conduct a comprehensive onsite review each year when they arrive for the demonstration.

e) Flight is never authorized below 500 feet:

- Over occupied structures, roads, vehicles, or vessels outside of 3 NM from show center; and
- Within 500 feet laterally of open-air assemblies of persons.

NOTE: Aerobatic flight is not permitted outside of the aerobatic box.

f) The IIC will authorize, via a standard special provision attached to the CoW for the air show, the team to fly along each specified ingress/egress routes within 3 NM from show center, and specify if approved to fly as low as 200 (or altitude authorized) feet above the highest obstacle (within a 500-foot horizontal radius) along each ingress/egress route.

C. Sanctioned Military Single-Ship Demonstration Teams. The sanctioned North American military single-ship demonstration teams are specialized teams that demonstrate the capabilities of one particular aircraft at aviation events. The USAF (e.g., A-10, F-15, F-16, F-22, and F-35); the USN (e.g., F-18); and Canada's DND (e.g., F-18) all have sanctioned military single-ship demonstration teams.

1) The applicable branch of the military must provide the General Aviation and Commercial Division (NAES), their DOD/DND command-approved maneuver packages, which define the aerial demonstration to be performed at aviation events.

2) The military must establish a list of command-approved pilots who are authorized to conduct the aerial demonstrations.

3) The maneuvers package and list of command-approved pilots must be submitted to the General Aviation and Commercial Division for acceptance in accordance with the approval/acceptance process in Volume 3, Chapter 6, Section 3. A change to the FAA-accepted and command-approved maneuvers package or command-approved pilot list after the General Aviation and Commercial Division LOA has been issued may require an amendment to the LOA and/or additional review of the demonstration team. These changes are not authorized until accepted or approved by the CO for the team, the General Aviation and Commercial Division, and the NAES in accordance with Volume 3, Chapter 6, Section 3.

4) The General Aviation and Commercial Division will distribute copies of the FAA-accepted and command-approved packages and the list of command-approved pilots who may perform at aviation events to the AES, which will be available on the FAA website at https://www.faa.gov/about/initiatives/airshow/.

5) A comprehensive feasibility study/review of the flying display areas/aerobatic box, and along the ingress and egress routes is required to be accomplished prior to each event by the military single-ship demonstration team, the IIC, and the event organizer.

D. Other U.S. Military Demonstration Teams. Other U.S. Military demonstration teams include the USAF Heritage Flights and the USN Tailhook Legacy Flights. Various other military aircraft may be authorized for flyovers, flybys, simulated in-flight refueling demonstrations, simulated assault or rescue operations, reenactments, or other nonaerobatic operations or static displays. Other U.S. Military demonstration teams that incorporate aerobatic maneuvers are not authorized until accepted or approved by the CO for the team, the General Aviation and Commercial Division, and the NAES.

1) The USAF Heritage Flights and the USN Tailhook Legacy demonstration teams must provide their DOD command-approved maneuver packages, which define the aerial demonstration to be performed at aviation events.

a) The military must establish a list of command-approved pilots who are authorized to conduct the aerial demonstrations.

b) The approved maneuvers package and list of command-approved pilots must be submitted to the General Aviation and Commercial Division for acceptance in accordance with the procedures established in Volume 3, Chapter 6, Section 3. A change to the FAA-accepted and command-approved maneuvers package or command-approved pilot list after the General Aviation and Commercial Division LOA has been issued may require an amendment to the LOA and/or additional review of the demonstration team. These changes are not authorized until accepted or approved by the CO for the team, the General Aviation and Commercial Division, and the NAES.

c) The General Aviation and Commercial Division will distribute copies of the FAA-accepted and command-approved packages and the list of pilots who may perform at aviation events to the AES, which will be available on the FAA website at https://www.faa.gov/about/initiatives/airshow/.

d) A comprehensive feasibility study/review of the flying display areas/aerobatic box, and along the ingress and egress routes is required to be accomplished prior to each event by the military demonstration team, the IIC, and the event organizer.

2) USAF Heritage Flights, USN Tailhook Legacy, and similar demonstration teams may use aircraft that hold civilian experimental airworthiness certificates. Section 91.319(c) states: "Unless otherwise authorized by the Administrator in special operating limitations, no person may operate an aircraft that has an experimental certificate over a densely populated area or in a congested airway. The Administrator may issue special operating limitations for particular aircraft to permit takeoffs and landings to be conducted over a densely populated area or in a congested airway, in accordance with terms and conditions specified in the authorization in the interest of safety in air commerce." Section 91.319 cannot be waived under § 91.905. Consequently, the IIC must evaluate each aircraft and each operation to determine if the aircraft can be included in the waivered event.

3) Other DOD military aircraft may be authorized to conduct an aerial demonstration (e.g., flyovers, flybys, simulated in-flight refueling demonstrations, simulated assault or rescue operations, reenactments, or other nonaerobatic operations) or static displays. Aerobatic maneuvers are not authorized. These demonstrations require command approval, profile of approved demonstration, documentation of training requirements, and authorized crewmembers, and do not require acceptance from the General Aviation and Commercial Division.

4) State (military) aircraft from foreign countries that perform in air shows/aviation events in the United States receive a diplomatic clearance from the U.S. Department of State (DOS) to operate in the NAS. This clearance is obtained by applying to the appropriate military attaché in the U.S. Embassy in the country of origin. The U.S. Embassy will coordinate with the U.S. DOS and the NAES in the General Aviation and Commercial Division. Foreign military teams require acceptance from the General Aviation and Commercial Division in accordance with procedures established in Volume 3, Chapter 6, Section 3.

E. Military Parachuting Demonstration Teams.

1) Sanctioned Military Parachute Teams. The sanctioned North American military parachute demonstration teams are the U.S. Army Golden Knights, USN Leap Frogs, and the Canadian DND SkyHawks. The sanctioned military parachute teams are considered to have met the highest level of parachuting certification.

a) DD Form 2535 must be submitted for a parachute demonstration (see subparagraph 3-149F).

b) An application for a CoA (FAA Form 7711-2) for a parachute demonstration must be requested in advance (see subparagraph 3-142B1)). The team members for a sanctioned team need not be listed on FAA Form 7711-2. The event organizer may make the application for a sanctioned team.

2) Non-Sanctioned Military Parachute Teams. Non-sanctioned military parachute teams are not performing any demonstrations for the DOD or DND, and therefore must meet all the same requirements as any civilian team (U.S. or foreign). Non-sanctioned military parachute

teams that are performing for the DOD or DND should refer to the requirements established in paragraph 3-150 and, as applicable, the procedures in Volume 3, Chapter 6, Section 3 for the issuance of a General Aviation and Commercial Division LOA.

NOTE: All military parachute teams should refer to requirements established in paragraph 3-150 for all parachute demonstration or exhibition jumps that require a CoA (FAA Form 7711-1).

F. DD Form 2535 (Military Participation). The DOD requires the event organizer, or a designated representative, to complete DD Form 2535 when requesting a U.S. Military aerial demonstration team on or off a military installation. The event organizer or representative must forward the DD Form 2535 and an aerial diagram and charts depicting the aviation event demonstration area, aerobatic box/flying display area, and if applicable, ingress and egress routes to the responsible FSDO for review.

1) Review Period. The event organizer must allow for a 30-day review period. The FSDO completes Section IV, FAA Coordination (to include Airspace and Airports Coordination). The FAA GA Operations ASI who has met OJT requirements, preferably the IIC, conducting the site feasibility study will classify the proposed site requiring a CoW/A for an aviation event as satisfactory, conditional satisfactory, or unsatisfactory and return DD Form 2535 with the aerial diagrams and charts to the event organizer, retaining a copy for the FSDO file. The USAF is using an automated DD Form 2535 and the event organizer can only obtain it by accessing their website at https://www.acc.af.mil/Home/AerialEvents/AerialEventsScheduling.aspx.

a) A satisfactory classification indicates that a CoW is not required or can be issued following compliance with other stated requirements in this chapter (e.g., ensuring that the requested military demonstration team can perform all maneuvers within their FAA-approved maneuvers package within the proposed aerobatic box or flying display area).

b) A conditional satisfactory classification will include specific conditions that need to be met, such as closing roads, evacuating buildings, any obstructions, and special consideration for the military demonstration teams' ingress and egress routes.

c) An unsatisfactory classification indicates that the requested activity cannot be performed safely at the proposed site, and a CoW/A will not be issued.

d) Contact the ATC facility with jurisdiction for the airspace being used for coordination and enter the air traffic contact information block 18 of Section IV.

e) Check the appropriate boxes (a through g) in block 15.

f) Check the appropriate box in block 16. If other than satisfactory, enter the conditions for "Conditional Satisfactory" or reason(s) for "Unsatisfactory" in block 17.

2) Aerobatic Box. Generally, the standard aerobatic box for the Blue Angels and Thunderbirds is 12,000 feet by 3,000 feet. The Snowbirds usually request 8,000 feet by 3,000 feet. For a single-ship demonstration team, the standard aerobatic box is 6,000 feet by

3,000 feet or 4,500 feet by 3,000 feet. The air show demonstration area is typically 5 sm and may be increased if DA is a known factor for that location and timeframe of the event. This should be considered when application is made. The support manuals and maneuvers packages will indicate the size of the required airspace for the aerobatic box, flying display area, and demonstration area that is required to be met for a conditional satisfactory classification. If the airspace requirements or site feasibility requirements cannot be met, the event organizer must either withdraw their DD Form 2535 request or the Operations ASI/IIC conducting the review must issue an unsatisfactory classification that indicates the requested activity cannot be performed safely at the proposed site. Coordinate with the AES if unique circumstances need to be considered.

3) Military Flyovers. DD Form 2535 for a flyover at civic events, funerals, etc., are submitted to the responsible FSDO for FAA coordination. Nonaerobatic flyovers (e.g., stadiums, parades, funerals) are authorized at or above 500 feet above the highest obstacle within 1,000 feet horizontal from the flightpath when a CoW (FAA Form 7711-1) is issued by the responsible FSDO for the three sanctioned North American jet demonstration teams, the single-ship demonstration teams, and the USAF Heritage Flight Team. This authority is granted through the annual General Aviation and Commercial Division LOA and command approval. All other nonaerobatic flyovers utilizing military aircraft (U.S. or foreign) should be accomplished at 1,000 feet above the highest obstacle within 2,000 feet horizontal from the flightpath. For procedures addressing the issuance of a CoW for a military flyover, see paragraph 3-145.

a) If no regulations are requested to be waived, the DD Form 2535 should be marked “Conditional Satisfactory” with the following conditions:

1. No site evaluation is necessary.

2. The assigned PIC must provide a briefing to the FSDO 48 hours prior to the flyover.

3. Compliance with all other rules of part 91 is required.

4. The event organizer for the flyover must provide documentation of command approval.

5. Contact the ATC facility with jurisdiction for the airspace being used for coordination and enter the air traffic contact information in block 18 of Section IV.

6. Check the appropriate boxes (a through g) in block 15.

7. Check the appropriate box in block 16 and enter the conditions for “Conditional Satisfactory” or, if applicable, the reason(s) for “Unsatisfactory” in block 17.

b) If a waiver of one or both of the following regulations is requested for a sanctioned military demonstration team, the following conditions in subparagraphs 1 and 2 below must be met and listed as applicable in the remarks for “Conditional Satisfactory”:

1. The speed requested is above those authorized in § 91.117(a), (b), or (c).

NOTE: Per § 91.117(d), if the minimum safe airspeed for any particular operation is greater than the maximum speed required by § 91.117, the aircraft may be operated at that minimum speed.

NOTE: If only § 91.117 is requested to be waived, ATO (controlling facility) can issue the required CoW or authorization.

2. One of the sanctioned military demonstration teams listed above is requesting a flyover below 1,000 feet above the highest obstacle and less than 2,000 feet either side of their flightpath as required in § 91.119. If a waiver of §§ 91.119 and 91.117 is requested:

a. A site feasibility/review must be conducted including ingress and egress routes.

b. Flight below 500 feet above the highest obstacle and less than 1,000 feet either side of the intended flightpath is not authorized.

c. Only shallow turns, climbs and descents are authorized below 1,000 feet AGL.

d. The assigned PIC must provide a briefing to the FSDO 48 hours prior to the flyover.

e. Compliance with all other rules of part 91 is required.

f. Confirmation of annual General Aviation and Commercial Division LOA issued and command approval granted.

g. Contact the ATC facility with jurisdiction for the airspace being used for coordination and enter the air traffic contact information in block 18 of Section IV.

h. Check the appropriate boxes (a through g) in block 15.

i. Check the appropriate box in block 16 and enter the conditions for "Conditional Satisfactory" or if applicable reason(s) for "Unsatisfactory" in block 17.

c) USAF Heritage teams and USN Tailhook Legacy demonstration teams must ensure compliance with § 91.319(c) for authorized civilian experimental aircraft and flight over densely populated areas during ingress and egress. Those civilian aircraft that hold an experimental airworthiness certificate may not overfly densely populated areas. Enter these conditions for "Conditional Satisfactory" in block 17.

4) Sporting Event TFR. Military flyovers and military parachute demonstrations conducted over or into open air sporting events requiring a Transportation Security Administration (TSA) TFR (commonly referred to as a Sporting Event TFR), within the National Capital Region TFR, or a Special Events TFR (e.g., Republican or Democratic National

Conventions and the Super Bowl) do not need to comply with the requirements for the TSA and the FAA Airspace Access Program. Those requirements do not apply to DOD aircraft authorized by, and in contact with, ATC.

3-150 PARACHUTE DEMONSTRATIONS. Although many air show activities may require a CoW, parachute demonstration or exhibition jumps do not. As provided in part 105, some of these parachute jumps require a CoA, FAA Form 7711-1, or CoA J501 in WebOPSS. FAA Form 7711-2 is the application for a CoA for a parachute jump. Refer to the FAA website at https://www.faa.gov/about/initiatives/airshow/ for a sample checklist to be used when preparing FAA Form 7711-2.

A. Parachutists Associated with the USPA. The FAA authorized the USPA to adopt its own safety rules and licensing standards for parachutists and instructors.

1) Members of the USPA who wish to participate in a demonstration or exhibition jump over or into a congested area must present to the FAA satisfactory evidence of the experience, knowledge, and skill required by the USPA. A parachute license or rating issued by the USPA (a RIO) is acceptable to the FAA when conducting a parachute demonstration under a CoA.

a) USPA licenses are valid only while the holder is a current regular USPA member or a current temporary USPA member; there is no other renewal requirement.

b) USPA ratings are only valid while the holder is a current regular USPA member.

2) Toward this goal of assisting the FAA, the USPA has made their Skydiver's Information Manual (SIM) available on their website at https://www.uspa.org/Downloads, which contains the Basic Safety Requirements (BSR) and a list of their safety programs. The USPA has offered assistance to the FAA if any questions arise regarding parachuting or information regarding the validity of a USPA parachute license or rating.

B. DOD/DND North American Sanctioned Parachute Teams. The DOD has officially sanctioned the U.S. Army Golden Knights and the USN Leap Frogs as parachute teams. A team may have more than one unit operating under the designated team name (e.g., two Golden Knight teams (the Black Team and the Gold Team) jumping at two different locations). The DND has sanctioned the Canadian SkyHawks. (See subparagraph 3-149E.) An FAA LOA is not issued to these sanctioned teams. Refer to the FAA National Aviation Events Program website for links to each team.

1) The DOD/DND-sanctioned military parachute team determines site acceptability, effect of wind conditions, and location of exiting the aircraft. This includes the decision to exit over a spectator area, the authority to jump with other DOD/DND-sanctioned parachute teams, and the determination of authorized passengers on board the military/public aircraft during performances. The DOD accepts the responsibility for these technical judgments with respect to the jump exhibition safety.

2) An application for a CoA (FAA Form 7711-2) must be submitted by the event organizer for the team to the responsible FSDO to conduct a demonstration or exhibition jump over or into a congested area. The application must contain a statement that the military command or service has determined that adequate safety margins exist at the site (from a performer's perspective) for the scheduled demonstration by the specific team(s) on a specific date.

a) If multiple sanctioned commands/services are conducting a joint demonstration, each CO should provide a statement that they have determined that adequate safety margins exist at the site (from a performer's perspective) for the scheduled demonstration by the specific team(s) on a specific date.

b) If a DOD/DND-sanctioned military parachute team requests a demonstration with a non-sanctioned DOD/DND or civilian parachute teams, command approval must be provided with the application for a CoA (FAA Form 7711-2).

C. Non-Sanctioned DOD Parachute Teams. Other military jump teams, such as the USAF Academy's Wings of Blue, the United States Special Operations Command (USSOCOM), and Black Daggers, are not DOD-sanctioned parachute teams.

1) If a CoA is required under part 105 (§ 105.21), it may be issued only for a DOD non-sanctioned military jump operation when:

a) The unit is required to meet the same standards as DOD-sanctioned teams and all aspects of training, equipment, and procedures are under the military's direct control and responsibility.

b) All members of the DOD non-sanctioned parachute team are active military and hold a USPA class D license (e.g., USAF Wings of Blue).

c) A tactical parachute demonstration team with either mixed civilian and active military or all active military (e.g., USSOCOM, Black Daggers) is issued an LOA from the General Aviation and Commercial Division (see Volume 3, Chapter 6, Section 3 for the approval/acceptance process). The FAA LOA will establish additional requirements, to include that all civilian team members must hold a USPA class D license.

2) Tactical parachute demonstrations by military units that do not meet the same standards as DOD-sanctioned parachute teams and require a CoA under part 105 (§ 105.21) can be conducted by landing on or beyond the Category II show line. The active soldiers assigned to these tactical military units, using standard military equipment, are not required to hold a USPA license for conducting tactical demonstrations.

3) The IIC must determine if the civilian team members have a USPA class D license or higher and active military members have a valid military ID. If it is unclear whether a member meets USPA requirements, coordination with the military liaison, USPA, or the AES may be appropriate.

4) Any complaints received by the FAA as a result of the aerial demonstration by a DOD parachute team shall be forwarded to the designated military representative for disposition. Any questions involving a military team should be directed to the appropriate team. Enforcement action will be conducted according to current FAA policy.

D. Parachutists (Civil U.S. or Foreign) Not Associated with the USPA. Civil parachutists who are not members of the USPA and who wish to participate in a demonstration or exhibition jump over or into a congested area must present to the FAA satisfactory evidence of the experience, knowledge, and skill equivalent to that required by the USPA.

1) If the event organizer or applicant is unable to provide adequate information about the event or jumper's qualifications, inspectors, after coordination with the AES, may require a demonstration jump (not over a congested area) before approving a CoA.

2) Airborne demonstrations, other than those performed by the DOD/DND or those who hold a USPA license or rating (or equivalent), must have an LOA from the General Aviation and Commercial Division containing the conditions for these demonstrations if the equipment, opening altitude, and jump experience do not meet the requirements of USPA. USPA does not recognize round canopy airborne demonstrations. (See Volume 3, Chapter 6, Section 3 for the approval/acceptance process.)

E. Safety. Part 105 states rules designed to protect the general public and other users of the national airspace from sport parachuting activities.

1) When a parachute jump is conducted over or into a congested area, a CoA is required.

2) An open-air assembly of persons usually occupies a relatively small area. Therefore, it should not be a problem to avoid these areas during an exit. The primary purpose of an exit limitation over an open-air assembly is to provide a higher level of safety under the remote possibility that a jumper would be unable to deploy one of two parachutes.

3) In some cases, the local USPA safety and training advisor may be able to answer safety questions regarding the jump and landing area. Contact the USPA for assistance in locating a USPA safety and training advisor in your area.

4) Although the majority of contacts with the parachutists are made by Operations inspectors, questions concerning parachute riggers, airworthiness, or engineering should be referred to the Aircraft Maintenance Division and/or the Aircraft Certification Service (AIR) Rotorcraft Standards Branch (AIR-680) for resolution.

F. Issuance of a CoA—FAA Form 7711-1 or CoA J501. Section 105.21 includes rules applicable to jumps over or into congested areas or open-air assemblies of persons. Any jump over or into a congested area requires FAA Form 7711-1. Section 105.15(a)(1)–(7) lists the information required when applying for a CoA.

1) The drift-over provision of § 105.21 permits a jumper to exit an aircraft over areas other than a congested area and, with a fully deployed parachute, drift over a congested area or open-air assembly of persons, and then land in an open area. Under these circumstances a CoA is not required. However, the drift-over provision does not permit any jump that results in a landing into a congested area or open-air assembly of persons unless the parachutists have obtained a CoA.

2) The following may clarify the intent of § 105.15 and help to determine when an authorization is necessary.

a) A jump will be at a town just east of a large lake. The jumper wishes to exit the aircraft over the lake and drift eastward to land in an open area. Authorization is not required.

b) At the same town, the jumper wishes to change the landing site to a school playground in the eastern part of town. The playground is several acres in size, completely fenced in, but surrounded by residential dwellings. Even though the landing target can be placed 500 to 600 feet from the fence, the jump is into a congested area. Authorization is required.

c) An exhibition jump is planned for a county fair. The fairgrounds are on the north edge of a town with clear, open land on three sides. The jumpers plan to exit their aircraft on one side of the fairground and land on the opposite side. This is a drift-over jump. Authorization is not required.

d) At the same fairgrounds, the target will be placed in the middle of a racetrack, enclosed by a wire mesh fence, and located near the center of the fairgrounds. The target is more than 500 feet from the fence. This would be a jump into an open-air assembly of persons. Authorization is required.

e) Jumps made into large areas, even though near or within a popu1ated area or near an open-air assembly of persons, do not require written FAA authorization. This provision applies to open areas large enough to enable the parachutist to exit the aircraft over the area and remain within the area during descent and landing. Since at no time would a jumper be over a congested area, jumps of this nature would not impose a public hazard. However, parachutists should ensure that the landing area is completely clear of assembled persons other than the ground crew and other show performers.

3) Operations inspectors reviewing applications for a CoA to jump into congested areas or controlled airspace should look for any indication that these jumps involve special equipment or more participants than allowed by the aircraft's type certificate (TC), Supplemental Type Certificate (STC), or field approval. When in doubt, coordinate with the FSDO airworthiness unit.

4) CoA J501 can be used in lieu of FAA Form 7711-1 for all parachute demonstrations. The responsible FSDO for the organization will enter the operator/organization into the national database. Any changes required on CoA J501 will be updated by the FSDO.

5) For organizations with multiple scheduled seasonal jumps:

a) Using the CoA J501 template allows issuance for the calendar season, expiring by December 31 of that year. Every jump must have a FSDO-approved FAA Form 7711-2 that will be attached to the WebOPSS paragraphs described in subparagraph 3-150F.

b) To request a seasonal CoA J501 for multiple jumps, the organization must make the request in writing to their responsible FSDO, which includes the following information:

1. The name of the operator or organization.

2. The address of the operator/organization.

3. The name, address, phone number, and email of the responsible person that will be overseeing the jump season.

4. The date period requested with the end date no later than December 31 of that year.

5. The names of the pilots with certificate numbers.

6. The N-number and make/model of aircraft to be used.

7. The parachutists' names and license class information.

c) This information will be used by the ASI/aviation safety technician to populate the WebOPSS paragraphs. The first issued CoA J501 must have an accompanying FAA Form 7711-2 specific for the first requested jump demonstration. However, when issuing the effective dates, the seasonal dates are applied.

G. Parachutist's License and Recent Experience. The competence of parachutists is extremely important when evaluating the suitability of a landing site. The parachutist must sign a statement that he or she has met the recency-of-experience requirements in this section prior to conducting the demonstration. A parachuting license or rating issued by the USPA (or equivalent), a sanctioned DOD/DND military team, or an LOA issued by the General Aviation and Commercial Division is acceptable to the FAA when conducting a parachute demonstration under a CoA.

1) Open field and Level I landing areas require a current USPA class C or D license (or equivalent), a minimum of 200 jumps, of which 50 jumps were within the last 12 months to include 5 jumps within the previous 60 days on the same make and model canopy to be used for the demonstration.

2) Level II and stadium landing areas require a current USPA class D license with a Professional Exhibition (PRO) rating (or equivalent), and 50 jumps within the last 12 months to include 5 jumps in the previous 60 days on the same make and model canopy.

3) USPA issues the PRO rating with an expiration date that coincides with the expiration date of the holder's USPA membership. USPA members are renewed on the basis of continued demonstration of the original certification requirements. USPA original certification requirements are memberships in USPA, a USPA class D license, and the accomplishment of 10 successive jumps into a 10-meter (33-foot) diameter target area in accordance with the following:

- Accomplish all required jumps with a stand-up landing;
- The size of the canopy used during the PRO rating qualification determines the smallest canopy allowed in demonstration jumps; and
- Either a safety and training advisor or an instructor/examiner witness the qualification jumps.

4) Refer to the FAA website at https://www.faa.gov/about/initiatives/airshow/ for special qualifications required for the following types of parachute demonstrations:

- Wingsuit,
- Night,
- Overwater, and
- Pyrotechnics.

H. Landing Areas. All FAA-authorized demonstration jumps are classified as open field, Level I, Level II, or stadium. A sterile landing area (to include alternate landing areas) is required for a demonstration jump requiring a CoA under part 105 (§ 105.21).

1) Open Field.

a) A minimum-sized area that will accommodate a landing area no less than 500,000 square feet (e.g., approximately 710 feet by 710 feet, or a dimension with the sum total that equals or exceeds 500,000 square feet);

b) Allows a jumper to drift over the spectators with sufficient altitude (250 feet) so as to not create a hazard to persons or property on the ground; and

c) Will accommodate landing no closer than 100 feet from spectators.

2) Level I Landing Area.

a) An open area that will accommodate a landing area no smaller than 250,000 square feet (e.g., approximately 500 feet by 500 feet, or a dimension with the sum total that equals or exceeds 250,000 square feet).

b) Permits jumpers to land no closer than 50 feet from the spectators and to pass over the spectators no lower than 250 feet, including the canopy and all external paraphernalia.

c) Many open field athletic areas and airport operational areas constitute Level I landing areas.

3) Level II Landing Area.

a) An open area that will accommodate a rectangular, square, oval, or round-shaped landing area of approximately 5,000 square feet for no more than four jumpers, with at least 50 feet in width. An additional 800 square feet minimum for each additional jumper over four for any jumper landing within 30 seconds of the last of any four jumpers.

b) Permits jumpers to land no closer than 15 feet from the spectators and to pass over the spectators no lower than 50 feet including the canopy and all external paraphernalia.

c) Athletic fields 150 yards in length by 80 yards in width, or larger with bleachers, walls, or buildings less than 50 feet in height on two or more sides above the landing surface, are defined Level II landing areas.

4) Stadium. A stadium landing area is smaller than 150 yards in length by 80 yards in width and bounded on two or more sides by bleachers, walls, or buildings in excess of 50 feet high.

a) Permits jumpers to land no closer than 15 feet from the spectators; and

b) Pass over the spectators no lower than 50 feet including the canopy and all external paraphernalia.

5) Other Landing Area Considerations.

a) A landing area that exceeds the maximum dimensions of a Level I landing area, permits a parachutist to drift over a congested area or open-air assembly with a fully deployed and properly functioning parachute (if the parachutist is at sufficient altitude to avoid creating a hazard to persons and property on the ground), and that has no other safety concerns would likely not require a CoA as required by § 105.21.

b) For demonstration jumps that require a CoA (§ 105.21), landowner permission must be obtained for an off-airport location. For jumps onto or over an airport, prior approval must be obtained from the airport management. This is submitted in the form of a letter of permission.

c) Any parachute jumping demonstration planned in conjunction with a public aviation event will require a CoA with appropriate special provisions as required by § 105.21, even if the landing area exceeds the maximum dimensions for a Level I area. A parachute jumping demonstration planned in conjunction with a public aviation event is one that takes place any time after the first spectator arrives for the event that day.

6) Tandem Jump Demonstrations.

a) Only tandem instructors approved by the USPA may conduct tandem jumps.

b) Tandem jumps may be authorized as follows:

1. Tandem jumps into open field and Level I landing areas do not require any previous jump experience for the passenger.

2. Tandem jumps into Level II areas require the passenger to have a USPA D license with a PRO rating.

3. Tandem jumps into a stadium landing area are prohibited.

7) Alternate Landings Areas. Regardless of the parachutists' experience, alternate landing areas (e.g., runoffs or escape areas) must be identified and considered when evaluating a demonstration jump requiring a CoA under part 105 (§ 105.21).

8) Intentional Cutaways. Cutaways may not be performed if the cutaway equipment will drift into the spectator area.

3-151 AIR RACES.

A. Cross-Country Air Races. Cross-country air races are normally proficiency type races and only require a CoW for altitude and airspeed at checkpoints along the route.

1) Section 91.119(b) and/or (c) (Minimum Safe Altitudes) and § 91.117 for airspeed may be waived in accordance with this chapter.

2) The FSDO where the air race is started will be designated as the lead FSDO. The IIC from the lead FSDO will coordinate with each responsible FSDO along the route that has a checkpoint. The lead FSDO/IIC will coordinate with the event organizer and ensure the responsible FSDO issues a CoW for each checkpoint when required. If the lead FSDO and one of the designated responsible FSDOs recommend a change in the designated lead FSDO, coordinate with the AES for concurrence.

3) Each CoW issued at each checkpoint will require some coordination with the ATC facility that services that airspace. An electronic copy of the CoW will be provided to each jurisdictional facility.

4) It is the event organizer's responsibility to design the cross-country course and subsequent stops at checkpoints, so that hazards to spectators and other persons on the surface are prevented.

B. Closed-Course Air Races. Due to the complexity of the two types of closed-course pylon air racing courses (i.e., Reno type and Red Bull type), an air race organization and associated air race classes (except UAS operated under part 101 or part 107) require FAA accreditation from the General Aviation and Commercial Division. All air racing courses must be submitted to the General Aviation and Commercial Division NAES for approval before a CoW can be issued by the responsible FSDO. UAS operated under part 101 or part 107 do not require a CoW for an aviation event when not conducted in conjunction with an aviation event with manned aircraft. See subparagraph 3-151D below for accreditation requirements.

1) Demonstration, training, and competitive events are normally conducted over a fixed, short-distance racecourse, usually located on or adjacent to an airport.

NOTE: Demonstration races are done to promote an upcoming air race, training races are done to fulfill the pilot qualification requirements, and competitive event are the actual air race.

2) It is the event organizer's responsibility to design the course so that hazards to spectators and other persons on the surface are prevented.

C. CoW for Pilot Qualification Closed-Course Racing School. Handle non-competitive demonstration races and training events like a competitive event, including a determination of pilot competency. Event organizer should choreograph demonstration races from takeoff to landing.

D. Air Race Accreditation. An air race organization and associated air race classes require FAA accreditation and must be issued an LOA from the General Aviation and Commercial Division. This LOA grants the air race organization the authority to apply for the issuance of a CoW for an air race (closed course) and grants the authority to the air race class to issue air race pilot certificates (see Volume 3, Chapter 6, Section 2).

E. Air Racing Organizations. Air race organizations and associated air race classes that have been accredited for closed-course air races, issued an LOA from the General Aviation and Commercial Division, and designated as RIOs can be found on the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/.

F. Participants. A fundamental principle of closed-course air race safety, including non-competitive demonstration events, is that all of the participants need to be associated with an organization dedicated to the sport.

G. Race Class Organization. An organization or person meeting the accreditation requirements and issued an LOA by the FAA must issue the race pilot authorization. The structure and existence of a credible air racing organization provides an internal level of safety that would not otherwise exist.

H. Race Pilots. Race pilots must possess a current race pilot authorization in the air race class in which that pilot is racing (issued within the previous 12 months).

I. Required Crewmembers. The special provisions of a CoW provide that only required crewmembers by aircraft type design be carried on any civil aircraft engaged in an aviation event. For additional persons necessary for safety to be on board a civil aircraft, the situation must meet the following conditions and be approved by the IIC:

1) A qualified pilot flying cover for closed-course air racing;

2) Air race pilots during qualification training; and

3) Media personnel during non-race operations while the CoW is in effect.

J. Essential Personnel. Only persons and vehicles authorized by the participating race organization and defined as essential personnel will be permitted beyond the crowd line during racing operations.

1) Essential personnel must clear the runway and move back to at least the runway hold short line 1 minute before the launch for standing starts. No one will be permitted in front of the first row of aircraft after this time except the starter flag team.

2) Essential personnel except the home pylon flag crews, will remain inside the pylon course during races in designated areas. Race timing teams are permitted in the area between the crowd line and the show line during racing.

K. Race Aircraft Demonstration, Major Changes/Alterations, and Maintenance. Prior to being approved to race by the air race organization(s), in accordance with the procedures established in the FAA accredited or recognized air race operations manual/rules of competition, the race pilot must establish with the air race organization(s) the race aircraft will be operated in compliance with any operating limitations. All race aircraft must be designed to acceptable structural design criteria to meet the limiting load factors as specified by the appropriate race class.

NOTE: The PIC of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft (§ 91.3).

1) As required by the air race organization rules of competition or operations manual, a flight flutter analysis, test plan, and test results will be submitted to verify that the aircraft will safely operate within the structural limits and not be in the flutter region at anticipated race speeds and load factors within the anticipated race flight envelope. When required, the responsible FSDO(s) will ensure the proposed engineering evaluation, including flight demonstrations and analysis within the anticipated flight envelope for the aircraft, will meet the eligibility requirements for the air race.

2) All primary race pilots must submit a written certification to the air race organization(s) stating that, at the anticipated DA of the race, the intended race aircraft has demonstrated a true airspeed (TAS) of 105 percent of its projected qualifying speed while demonstrating a turn capability of 150 percent of the approved racecourse maximum designed G load of his or her race class prior to being eligible to race. During qualification, any aircraft that that exceeds the demonstrated speed will be required to establish, at the anticipated DA of the race, a new demonstrated TAS of 105 percent of the new qualifying speed while demonstrating a turn capability of 150 percent of the approved racecourse maximum designed G load. The primary race pilot must submit a new written certification prior to being permitted on the racecourse.

NOTE: Alternate race pilots must certify they accept the primary race pilot's flight demonstration certification, or submit a new certification, prior to being permitted on the racecourse.

3) The air racing flight demonstration specified in written certification may be based on historic flight data (e.g., previous air race) for the same aircraft/primary pilot combination and

the aircraft has received no major changes or alterations after the flight demonstration date. A statement will be provided to the air race organization and retained by the air race pilot and the air race organization as a record of accomplishment prior to being permitted on the racecourse (see Figure 3-205, Sample Air Race Flight Demonstration Statement).

L. Typical Racecourses. A diagram of a typical air race site is shown in Figure 3-55, Typical Air Race Site. A diagram of a typical sport class racecourse is shown in Figure 3-56, Typical Racecourse Site. See Volume 3, Chapter 6, Section 2 for detailed criteria and formulas used to design a racecourse.

1) Racecourse Design. A satisfactory pylon air racecourse design involves the shape of the course and its relationship to the area around the course, especially the spectator areas. These factors depend upon the maximum speed of the racing aircraft, the maximum altitude of the racing aircraft, and the maximum G loading (acceleration forces) that the aircraft are expected to encounter when flying the racecourse in a normal manner.

a) The General Aviation and Commercial Division approves each racecourse during the accreditation process and any subsequent requested changes or additional courses.

b) The IIC is responsible for ensuring that event organizer has placed the pylons as depicted on each approved racecourse for the aviation event.

NOTE: The Theodolite application is a multifunctional tool for the iPhone or iPad to validate Global Positioning System (GPS) points and the elevation of pylons.

2) Maximum G Loading. The maximum G loading for a race aircraft flying the course in a normal manner must be set for each racecourse design. The maximum G loading must be clearly documented on each racecourse submitted for FAA approval. In actual racing, where maneuvering and turbulence is encountered, momentary G loadings in excess of this figure are acceptable.

3) Minimum Turn Radius. The maximum speed and G loadings permit the calculation of the minimum radius turn that should be permitted in the design of the approved racecourse. The IIC is responsible for monitoring the responsible person who must ensure these parameters are not exceeded.

4) Racecourse Width. The raceway width may vary in the various racing classes so that the aircraft may pass one another. Criteria for passing aircraft during a sanctioned race or pylon racing school are established in accordance with the FAA-accredited or recognized air race operations manual/rules of competition. One critical requirement is that no racing aircraft is permitted to cross over the show line during the race.

5) Racecourse Show Line. During the race, aircraft occupy a raceway around the racecourse. The edge of this raceway closest to the spectator area is the show line, over which no aircraft is permitted to cross while racing.

a) The minimum turn radius, the maximum turn angle, and the raceway width define the limits of a satisfactory racecourse. The racecourse relationship to the spectator areas or other populated area(s), occupied buildings, and accessible roadways must also be defined. All racing classes require a minimum distance of 500 feet between the primary spectator area and the show line, and may require a greater distance between the primary spectator area and the show line.

b) An additional safety area is required to ensure that spectators are protected in the event that debris leaves a race aircraft. Should this occur while the aircraft is in a turn, the debris will follow a path tangential to the turn from the moment it departs the aircraft. This minimum safety distance is established on the General Aviation and Commercial Division-approved racecourse.

6) Scatter Distance and Maximum Racecourse Altitude(s). The maximum racecourse altitude will be based on course design as it relates to scatter distance with a 50 percent safety factor. Any altitude flown below the computed maximum altitude should be acceptable. The scatter distance is the theoretical straight-line distance to a point on the ground that the debris will follow (ignoring air resistance) depends upon aircraft speed and altitude. The scatter distance establishes where the show line is located. The critical requirement is that no racing aircraft is permitted to cross over the show line during the race. A maximum racing altitude(s) is required to be established for each racecourse design. This is established on the General Aviation and Commercial Division-approved racecourse. The IIC is responsible for monitoring the responsible person who must ensure these parameters for show line and maximum altitude are not exceeded.

M. Issuance of a CoW (FAA Form 7711-1). In addition to meeting the standard requirements for issuance of a CoW for an aviation event it is required that the IIC determine the following before issuing a CoW for closed-course air races:

1) The air race organization has been issued an LOA from the General Aviation and Commercial Division.

2) Each air race class has been issued an LOA from the General Aviation and Commercial Division.

3) The air racecourse(s) has General Aviation and Commercial Division approval.

4) Determine if the participants have the proper qualifications by holding an air race pilot credential for the class in which they are participating and certification of flight testing, if required.

5) Obtain statements from the organization regarding the air racing currency of each airman. This must capture qualification for the formation start and any special races (e.g., match race).

6) Obtain the accepted air race organizations manuals submitted for issuance of the LOA from the General Aviation and Commercial Division.

7) Inform the AES and NAES upon notification or receipt of an air race application for a CoW.

N. Special Provisions. The CoW (FAA Form 7711-1) issued for the air race (closed course) must include additional special provision(s) requiring compliance with the FAA-accredited or recognized air race operations manual/rules of competition. The list of all special provisions for an air race are found on the FAA website at https://www.faa.gov/about/initiatives/airshow/.

3-152 BALLOON EVENTS AND COMPETITIONS.

A. Balloon Events. Routine balloon ascensions can usually be conducted in accordance with the provisions of part 91, and no CoW is required. These other operations may include tethered balloon rides, balloon glows, and dawn patrol. These operations do not require a CoW and may be conducted outside the hours between sunrise and sunset. If they are conducted outside of daylight, the balloons must be lighted, per § 91.209, except for ground-based static displays (e.g., balloon glows) where the basket is not intended to leave the ground. For night tether operation, a light system meeting the requirements of § 91.209 must be on board the aircraft and must be deployed once the basket reaches an altitude of 30 feet AGL; the balloons must be lighted, per § 91.209. (This 30-foot distance (measured from the bottom of the basket) is determined by 14 CFR part 31, § 31.65(c), which describes airworthiness standards for position lights for manned free balloons.) However, balloon competitions will likely require a CoW with appropriate special provisions to maintain the safety of the nonparticipating public.

B. Balloon Operations. Flight competitions by balloons often involve operations at horizontal and vertical distances less than those required by § 91.119(b) and (c). Operations at these altitudes are necessary to take advantage of varying wind conditions at different altitudes that are the balloonist's only means of directional control. These operations are acceptable when appropriate limitations are developed to ensure public safety and the safety of the participants.

C. Public Safety. Ballooning has grown significantly in recent years, and competitive tasks have been refined and standardized. The FAA's concern is that every effort is made to ensure public safety. The intent of § 91.119 should never be compromised when issuing CoWs and developing special provisions.

1) Target areas may be a designated area on the main launch field for fly-in tasks or may be in remote areas for other tasks. In any case, the target area must be under the control of event officials. The use of portable bullhorns or public address systems provides an adequate means for crowd management, or for directing balloonists away from the target area in an emergency. Balloon landings are not normally permitted closer than 600 feet (200 meters) from the target or goal, although event officials may allow a reduction of this distance as deemed necessary for safety considerations.

a) Pilots are to be briefed at the Participants Safety Briefing on all safety aspects relating to landing closer than 650 feet to any target, including landowner permission procedures, IIC communication and coordination, and target/landing area control by event officials.

b) If the potential for short landings is anticipated, the balloonmeister and safety officials will review safety procedures as part of the preflight safety briefing.

c) The dimension of a target is typically 10x10x1 meters.

d) Only balloon recovery ground support crewmembers and authorized event officials can be present at the landing site.

2) The relatively slow speed of balloons allows spectators to move from harm more easily than at an air show where fast moving aircraft are performing. Accordingly, the designated spectator area can be minimized to a 200 foot radius away from the designated balloon goal/target. IICs should ensure that the responsible person ensures spectators remain clear of the goal/target area during balloon meets or competitions.

D. Balloon Competition Event CoW. To be found eligible for a CoW of § 91.119(b) and (c), the event organizer must prepare and maintain an organized balloon competition manual that has been found acceptable by the responsible FSDO. The contents of the manual are the basis for issuance of the CoW. The event organizer and the participants must comply with the balloon manual contents and requirements. No operations can be conducted under a waiver except while in VFR conditions during the period from sunrise to sunset, as specified in § 91.155.

1) Event organizers should be asked to submit a set of competition rules when applying for a CoW. Although this is not a regulatory requirement, it should be encouraged for the sake of conformity and safety. These competition rules should generally conform to a recognized industry standard, such as those developed by the BFA for events sanctioned by the BFA Competition Division.

2) A waiver of § 91.119(b) and (c) for organized balloon competitions can be issued based on submission of an application containing the proposed operations and contents of the organized balloon competition manual (see subparagraph 3-152E below).

3) Section 91.119(b) and (c) should be waived only to the extent necessary to accommodate the event while allowing an acceptable level of safety. Evaluation of the site by the IIC determines the actual separation distances for a specific event; however, the following minimum distances and special provisions must be observed.

a) Section 91.119(b) may be waived to allow flight over a congested area at an altitude of no less than 500 feet above the highest obstacle within a 500 foot horizontal radius of the balloon. This section of the regulation may only be waived within a specified maximum distance from designated launch sites and/or target areas. This designated area will be determined by the event organizer and the FAA; this area must also be clearly delineated in the event organizer’s manual before the event (a scaled map, drawing, and/or aerial photographs should be in the event organizer’s manual before the event). The designated area should be the

minimum area necessary to accommodate the event, and the area should be consistent with the event organizer's ability to control operations. A waiver of § 91.119(b) should not be issued if the target area is so small that a normal descent (200 to 300 feet per minute) cannot be made.

b) Section 91.119(b) may be waived to allow flight above, but not less than 75 feet from, any open-air assembly of persons (designated spectator area) under the direct control of the event organizer.

c) Section 91.119(c) may be waived to allow flight over open water or sparsely populated areas, no closer than 200 feet horizontally to any person, vessel, vehicle, or structure.

E. Organized Balloon Competition Manual. The following is a list of the minimum required topics that must be addressed in the competition manual for a balloon event. Other information may also be included (refer to the FAA National Aviation Events Program website for an example of a Balloon Competition Manual).

1) Responsibilities and Procedures:

- Duties of personnel;
- Registration and airworthiness determinations;
- Pilot qualifications;
- Pilot/crewmember briefing responsibilities;
- Copy of letter(s) of agreement; and
- Event flightcrew member qualifications, experience, and maximum numbers on board each balloon for each type of event.

2) Ground Operations:

- Clear areas;
- Spectator areas (designated primary and potential secondary areas);
- Diagram or description of crowd/spectator restraints if the public will not have access to the launch field during launch activities;
- If spectators/media have access to the launch field during balloon launch activities, a description of the method for the protection of the public (e.g., launch directors);
- Crowd management requirements; and
- Landowner relations/notification.

3) Flight Operations:

- Areas of operations;
- Diagram of launch field for mass ascensions with obstructions, if any;
- Diagram of target zones designated for public viewing, if any;
- Types of operations;
- Altitudes;
- Weather requirements;

- Communications requirements; and
- Air traffic coordination.

4) Section 91.119 Limitations. The organized balloon competition manual must incorporate § 91.119(b) and (c) limitations as appropriate to the event in a form and manner acceptable to the FAA and the event organizer. The event organizer should describe in the manual as clearly as possible the manner of operations that are needed to comply with the event CoW.

5) List and Description of Events, Tasks, and Races. The organized balloon competition manual must include a list and description of all events, tasks, and races to be included in the CoW.

6) Personnel. The organized balloon competition manual must contain the names of the following personnel who are responsible for the event:

- Balloonmeister,
- Person responsible for establishing and maintaining crowd management,
- Event organizer's FAA liaison, and
- Persons responsible for obtaining weather data and conducting the pre-event pilot and event flightcrew member required Participants Safety Briefing.

F. Letters of Agreement. In addition to the organized balloon competition manual, a letter of agreement clearly detailing all responsibilities may provide an excellent means of control. In the manual, the event organizer outlines the responsibilities assumed, such as crowd management, notification, communication, and briefing of participating pilots and event flightcrew members. ATC identifies the services they provide, such as up-to-date weather, a portable tower, or direct communication line with the tower. The FSDO identifies the necessary aircraft and airman certification qualifications and site inspection requirements through the CoW process.

G. Balloon Event Flightcrew Members. Only pilot and event flightcrew members, as described in the organized balloon competition manual, may be carried on board any balloon operating under the waiver issued to the event organizer.

1) Event flightcrew members will be restricted to the minimum number required for the type of event as specified in the organized balloon competition manual. Event flightcrew members should be kept to a minimum for competitive events.

2) All event flightcrew members must have received appropriate training concerning their duties relative to the event. These crewmembers must sign a statement that they have been briefed and that they are designated event flightcrew members for the purpose of the specific event for which the waiver was granted.

3) The PIC of each balloon is responsible for obtaining the signed statements on a form furnished by the event organizer. The PIC will maintain this form during the event and return it to the event organizer and make it available to the FAA upon request.

4) Balloon event flightcrew members are differentiated from ground support launch and recovery crewmembers.

H. Weather.

1) Maximum Wind Speed. The maximum wind speed for launch and at the target zones is mutually determined by the event organizer/balloonmeister and the FAA. Place these limitations in the operations manual. Determine the maximum wind speed limitations after considering the local terrain conditions and the competency of the participating airmen and the limitations of the aircraft. If a balloon does not have an FAA-approved flight manual, operating limitations can be found on the Type Certificate Data Sheet (TCDS). The actual means of determining the wind speed must be mutually agreeable to the FAA and the event organizer.

2) VFR. No balloon flight should be conducted below the VFR weather minimums of § 91.155.

3) IIC Authority. Flight demonstrations will not be conducted unless the ceiling is at least 1,500 feet, and the visibility is at least 3 sm at the time of the demonstration.

I. Types of Competitive Tasks. Competitive tasks are exercises in navigation using changes in wind direction. The winner of a task is the balloonist who can best take advantage of changes in wind direction by ascending and descending. Event organizers generally engage launch directors to control staggered launch times and ensure safety for multiple launches. The following are some typical balloon competitive tasks, based on information provided by the BFA (refer to the FAA National Aviation Events Program website for detailed descriptions of the tasks):

- Pilot-declared goal,
- Judge-declared goal,
- Multiple judge-declared goal,
- Elbow,
- Hare and hound,
- Calculated Rate of Approach Task (CRT),
- Fly-on task,
- Fly-in task,
- Gordon Bennett memorial,
- Watership down, and
- Key grab.

J. Sponsored Balloons. A balloon event could be funded in part by soliciting paid sponsorships. Generally, the sponsor pays a fee for which, in return, the sponsor's business is promoted by various means, including printed programs, media coverage, on-field announcements, and VIP hospitality. Balloon basket banners, primarily used for numerical identification of the pilot, are occasionally sponsored. Pilots are not paid compensation for displaying these basket banners and their use is not dependent on flying. They are not considered compensation for hire. Balloon envelope banners are large, sponsor-paid promotions and generally involve a fee paid to the pilot. Thus, a balloon flight displaying such a banner is

considered a commercial operation in much the same manner as banner towing airplanes. Balloons displaying a promotional envelope banner must be flown by a commercial pilot with a Lighter than Air (LTA) rating. However, there is no prohibition for displaying a basket banner used for identification purposes flown by a private pilot with an LTA rating.

K. Compensation. If an airman receives any type of compensation (e.g., lodging or rental cars) for flight activities at a balloon event, that airman must hold at least a Commercial Pilot Certificate. Second-class medical certificates may be required if medical certification is required for the aircraft being operated. The aircraft must be certificated for operations that allow compensation or hire. Additionally, if passengers or property are carried for compensation or hire, the aircraft must be certificated to allow for those types of operations.

1) Propane supplied to all participants at a balloon event for a small fee (e.g., event entry fee) is not considered to be receiving compensation under 14 CFR part 61, § 61.113.

2) Other items (e.g., meals and lodging) that are provided and are not conditioned on the pilot flying at the event are not considered compensation under § 61.113.

3) The pilot may be required to give a ride to a member of the press, organizer's committee, or one of the sponsors for the event. If none of these people have paid for a ride, except the sponsor, who may have donated resources in order for the event to take place, and the pilot does not receive any additional compensation for taking the passenger above and beyond what is given to all other participants, then the pilot is not operating an aircraft that is carrying passengers for compensation or hire.

4) Prize money awarded on the basis of competition is not considered compensation.

3-153 CIVILIAN FLYOVER. A civilian flyover over an open-air assembly of persons temporarily gathered at an event (e.g., stadiums, civic events, and funerals) is not authorized below 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft. Waiving of § 91.119(b) is not authorized. The FAA considers a stadium, racetrack, and sporting event to be an open-air assembly of people, subject to regulation under § 91.119(b). (See subparagraph 3-143BB for the definition of flyover.)

NOTE: See Volume 3, Chapter 12, Section 5 for guidance for civilian flyovers.

3-154 EVENT MANAGEMENT.

A. Management Organization.

1) The event organizer of an aviation event may be an individual, a group of individuals, or an organization that will designate a responsible person to act on all matters pertaining to an FAA-issued CoW/A.

2) The event organizer has the overall responsibility for the conduct of the aviation event in a safe manner and in accordance with the conditions contained in the CoW/A, FAA Form 7711-1. In order to accomplish this, the event organizer may delegate to other persons the authority to organize and control particular aspects of the event. At a small event, one person

may be able to coordinate more than one activity, while at a large event, an activity may be controlled by a committee of persons delegated the appropriate authority. The IIC should work closely with the responsible person to develop normal and emergency plans, briefings, and checklists.

3) The management structure (position titles) outlined in the following sections is not mandatory, however the responsibilities are mandatory. The duties and responsibilities of persons delegated the responsibility for safety related activities for an aviation event is as follows. The event organizer is responsible for:

a) Providing a sufficient number of capable and informed persons to handle the operation of the event with efficiency and safety, and for their identification as officials. This includes persons responsible for flight and ground operations and event safety.

b) Appointing a person selected for his or her broad background in aviation operations and ability to coordinate the various air, ground, safety and administrative activities at an event.

c) Establishing liaison with airport management, ATC, and concerned local agencies.

d) Studying airport facilities and accommodation and preparing a draft plan for the safe handling of spectators, aircraft parking and movement, automobiles, etc., on a comprehensive, overall basis.

e) Making application to the responsible FSDO with sufficient advance notice to complete the administrative and coordination duties required to prepare the CoW/A for the aviation event.

4) The event organizer is responsible for the overall coordination of activities at the aviation event including:

a) Ensuring all staff members are properly informed of their duties and responsibilities in detail, well in advance of the aviation event date.

b) Consultation with the person in charge of the flight operations at the aviation event (air boss), cancelling or postponing the flight program in the event of an accident, bad weather, or any other circumstances relating to the safety of the spectators or participants.

c) Ensuring that if rehearsals are required, these activities are included in the CoW and that the requirements of the ERP are in place and available.

d) Establishing liaison with resident aircraft operators and scheduled air carriers to coordinate the flight program to avoid disruption to commercial service.

e) Ensuring all civilian military personnel participating in the aviation event hold appropriate licenses, certificates and/or authorizations and are competent to conduct their performances in accordance with the CoW/A issued for the event.

f) Ensuring all civilian aircraft participating in the aviation event hold appropriate airworthiness certificates and are in an airworthy condition for flight in accordance with the CoW/A issued for the event.

g) Making prior arrangements with participating pilots and crew arriving by air concerning arrival dates, accommodation, customs, program performance, flight authority, etc.

h) Providing the required Participants Safety Briefing and specialty/remote briefings, providing the schedule (date/time/location) of briefings to all participants/performers and the FAA, and ensuring the meeting space is of adequate size to accommodate the persons being briefed in accordance with the CoW/A.

5) The air boss is responsible for the conduct of the flight operations at the aviation event including:

a) Finalizing the flight program in accordance with the conditions of the CoW/A.

b) Obtaining and reviewing maneuver profiles from all North American military jet teams and military single-ship demo teams and the profiles meet these safety standards and that they are suitable for the event site.

c) Obtaining and reviewing profiles from all flyby demonstrations with multiple solo and formation aircraft and reenactments, and determining that the profiles meet the safety standards and that they are suitable for the event site.

d) Coordinating with air traffic with regard to the publication of a NOTAM TFR or Class D NOTAM concerning the aviation event. The NOTAM will cover at least the horizontal and vertical limits of airspace and the duration of the event.

e) Establishing procedures with ATC for the coordination of participating and nonparticipating aircraft operations in the aviation event demonstration area and TFR.

f) Establishing procedures for emergency response.

g) Conducting the required Participants Safety Briefing and specialty/remote briefings, and ensuring that performers who do not attend these briefings do not participate in the aviation event on that day.

h) During the aviation event, the air boss shall:

1. Station himself or herself so as to have an unrestricted view of the flying display area/aerobatic box.

2. Terminate any performance or demonstration being conducted in an unsafe manner.

3. Have ready communication (to include backup radios) and additional radios for the IIC and as needed for other aviation event officials to monitor communications. Ensure there is adequate space for the IIC and required personnel. Consideration for adequate protection from elements has been discussed with all required personnel.

4. Be readily accessible to all pilots taking part in the flying program and other aviation event officials.

5. Follow procedures established with ATC for the control of transient aircraft vs. participating aircraft.

6) The event organizer, or representative (ground operations officer), is primarily responsible for crowd management, automobile and aircraft parking and movement, and liaison with his or her airport or local governing counterparts. His or her duties include:

a) Ensuring that sufficient personnel are available to effectively control the anticipated crowd and providing these persons with complete instructions as to their duties.

b) Arranging for communications facilities including air/ground, ground control and those required by personnel controlling the aviation event or the spectators. This includes arranging for the use of special radio frequencies if required.

c) Arranging for the availability and use of support vehicles. This may include ARFF first response vehicles for responding to emergencies, aircraft “follow me” vehicles, shuttle buses to move spectators from parking to viewing areas, etc.

d) Establishing an operations center, in conjunction with other key event officials to coordinate and control the activities he or she is responsible for.

e) Other duties that may be assigned to this person are:

1. Establishing effective liaisons with the airport operator and local police to ensure that adequate facilities can be provided for spectators, and to provide for offsite traffic control;

2. Arranging for refueling of aircraft, both participating and visiting; and

3. Establishing a liaison with military participants.

7) The event organizer or representative (event safety officer) cooperates closely with the ground operations officer as many of their responsibilities overlap. The scope of the responsibilities concerning event safety will vary in accordance with the size of the show and its location. The event safety officer’s duties include ensuring:

- The emergency procedures take into consideration public safety/emergency response officials in the development and execution of the required ERP; and
- The ERP establishes operational protocols and procedures for response to any emergency incident or accident, as required in subparagraph 3-154B below.

B. Emergency Response Plan (ERP). Public aviation events have the potential to be affected by aircraft-related accidents or incidents. When such an accident or incident occurs, an effective and well-executed ERP improves outcomes, potentially leading to significantly reduced losses even in high-visibility catastrophic scenarios. Conversely, the outcomes resulting from a poorly developed and implemented ERP can lead to a strong negative public reaction, threatening the future of the event and diminishing the public perception of the aviation event industry in general.

1) Requirement Summary. Every aviation event issued a CoW/A must have an ERP that meets the criteria established in this subparagraph. The ERP is a written document that describes how the organizations presenting and supporting an aviation event issued a CoW/A will respond to protect people and property in any emergency that affects performers, essential personnel, or spectators. It must be risk-based and appropriate to the size, scope, and complexity of the event, and it must incorporate one or more tactical IAPs. The ERP must be found acceptable by the IIC prior to FAA Form 7711-1 being issued.

2) Adherence to the National Incident Management System (NIMS). NIMS is a comprehensive, exercised onsite emergency response system that ensures the highest state of operational readiness and is capable of effectively responding to any emergency situation. It is a required component of every aviation event. The ERP and accompanying IAP for each aviation event issued a CoW/A must reflect adherence to the guiding principles and functional components of NIMS.

3) ERP Development.

a) Planning Process. For an ERP and IAP to be most effective, they must be developed in a deliberate and collaborative manner. This order does not require the use of a specific planning approach or method, but event organizers are strongly encouraged to implement, as appropriate to the size, scope, and complexity of the event, the planning process described in the Federal Emergency Management Agency's (FEMA) Comprehensive Preparedness Guide (CPG) 101, Developing and Maintaining Emergency Operations Plans. In addition, certain key planning actions must be conducted and documented in the ERP for a CoW/A to be approved:

1. Use of a Team Approach to Planning.

a. The ERP must be developed by the event organizer or his or her designee (e.g., the event safety officer) in coordination with all relevant stakeholders, such as key event staff (e.g., air boss, announcer) and all of the public safety and emergency services organizations supporting the event (e.g., fire/rescue, emergency medical, and law enforcement). The ERP should be signed by the event organizer or an authorized representative of the event organizer.

b. Similarly, the IAP must be developed jointly by the event organizer or his or her designee and the same key stakeholders. Prior to the commencement of the event, the IAP must be approved by all of the affected entities, including the event safety officer.

c. All scheduled performers should have an opportunity to review and comment on the ERP and IAP.

2. Studying the Risk. Consistent with the processes and methods described in FAA Order 8040.4, Safety Risk Management Policy, the ERP planning team must identify and evaluate the risks to people and property from potential (common and predictable) emergencies affecting performers, essential personnel, or spectators. The AvERT can be used to identify common and predictable emergencies and evaluate risk.

3. Implementing and Maintaining the Plan. Event personnel must be trained on the ERP, exercises must be used to validate and improve the plan, and if the plan is to be reused in the future, it must be revised based on lessons learned and after-action findings.

b) Plan Integration. The ERP must be integrated with other emergency and related plans with which it has interdependencies. This includes vertical integration (i.e., the meshing of plans up and down the levels of community and government, which helps ensure that all response levels have a common operational focus) and horizontal integration (i.e., coordinating operations between and among the organizations partnering in support of the event, allowing each entity to execute its own mission while supporting the event's common objectives).

1. The event organizer must work with all appropriate stakeholders to coordinate and synchronize emergency response actions, reconcile and de-conflict resource requirements and assignments, and identify and address potential response capability shortfalls. This information must be documented in the ERP. For example, the airport manager or authority, in coordination with the local government jurisdiction having authority, must determine the requirements for onsite Crash, Fire and Rescue and emergency medical facilities and personnel for the aviation event; this information must be coordinated with local public safety authorities and reflected in the ERP.

2. The event organizer must ensure that the ERP conforms to all applicable local, state, and Federal rules and regulations regarding aircraft accidents, including National Transportation Safety Board (NTSB) authority specified in Title 49 of the Code of Federal Regulations (49 CFR) part 830.

3. Events at part 139 airports: Participating aircraft at aviation events (e.g., aviation events, air races, aerobatic competitions, or balloon events) and facilities are fundamentally different than the facilities and types of aircraft operating at part 139 airports, and normal emergency response protocols for a part 139 airport may not be applicable for an aviation event (see subparagraph 3-145E5)). The event organizer must coordinate with the airport manager or authority to develop an addendum to the existing ERPs and procedures for the airport that aligns those plans and procedures with the aviation event's ERP.

4. Events with an ATC facility: The event organizer must coordinate with the ATC manager to develop an addendum to the existing ERPs and procedures for the airport that aligns those plans and procedures with the aviation event's ERP.

5. Events with military performers: The ERP must incorporate all performing military teams' accident/incident procedures.

c) Plan Format and Style. The FAA does not require the use of any particular template, style, or format for aviation event ERPs. However, adherence to the functional plan format is encouraged for most aviation events. The use of standard ICS forms or appropriate variants thereof is recommended for IAPs.

d) Supplemental Guidance. While local public safety and emergency management partner organizations are generally very familiar with the emergencies that can happen in their communities, aviation events can pose unique risks that may require different resources and methods, incident management and operations training, and tactical considerations. Guidelines for developing aviation event ERPs and associated IAPs and AvERTs are available on the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ in a section identified as "FAA Guidelines for ERP and IAP." Additionally, most public airports have an Airport Emergency Plan that can be used as a model for the ERP, and extensive planning process and format guidance applicable to ERP and IAP development is available in AC 150/5200-31, Airport Emergency Plan. These guidelines are intended to provide planning considerations only, and are not prescriptive in nature.

e) Additional Content Requirements. The following 12 areas and an appendix must be addressed in the ERP accepted for each aviation event issued a CoW/A.

1. Event Description/Venue Risk Factors. The purpose of this section is to identify the important details and the attributes of the aviation event that are critical factors in developing a risk assessment profile. Many of the details can be found on FAA Form 7711-2, which must be submitted at least 90 days prior to an aviation event requiring a CoW.

2. Pre-Incident Planning and Familiarization. This section describes the participating organizations and agencies that would be involved in the development of the ERP. It is also intended to identify the technical information and activities that need to be considered with regard to the emergency responder's operational readiness.

3. Emergency Response Capability to Downed Aircraft. This section provides guidance regarding identification of available fire suppression and victim extrication resources for aircraft incidents and what additional resources should be considered.

4. Resource Requirements, Positioning and Deployment. This section describes the emergency response resources that should be considered and utilized for response to a downed aircraft as well as the positioning and deployment procedures.

5. Operational Personnel and Command Staffing Requirements. This section describes the staffing considerations for the incident management team as well as the operational/tactical units that will be subject to response.

6. Mutual Aid Resources. This section describes the consideration of other response resources that may be available from other agencies, jurisdictions, or organizations for initial or secondary response.

7. Communications Protocols and Procedures. This section addresses the emergency response communications procedures, protocols, and equipment/facility resource considerations to support the emergency response operations.

8. Training and Certification Recommendations/Requirements for Operational and Incident Management Personnel. This section describes the desired level of training and certification requirements for emergency operations and incident management personnel.

9. EMS and Mass Casualty Response. This section describes the considerations for emergency medical care, transportation, and mass casualty response.

10. Special Hazards and Hazardous Materials (Hazmat). This section describes risk considerations associated with any special hazards/hazmat that may be present at the venue or as part of the event.

11. Incident Management/Command Operations. This section describes the concept of operations for the management of an emergency incident, and command and control procedures and protocols. This includes event-specific response.

12. Post-Event Review and After-Action Report. This section must describe how the event organizer will conduct post-incident reviews and develop an after-action report that details lessons learned and prescribes actions to be incorporated into future events (if applicable).

13. Appendix. Lists references and resources.

f) Policies and Procedures. In addition to the content requirements prescribed in the previous subparagraphs, the following policies and procedures must be articulated in the ERP and/or IAP as appropriate.

1. Emergency Response to a Downed Aircraft: Training and Exercises.

a. ARFF/Crash, Fire and Rescue and EMS personnel must be provided with aircraft-specific familiarization training and detailed rescue instructions (e.g., pilot/crewmember extrication information) for all participating aircraft in advance of the event. The ERP must specify when and how this will occur, and it may also include this information as an attachment or incorporate it by reference.

b. The event organizer, air boss, and emergency response personnel must conduct an emergency response exercise (drill or full-scale) on the event's practice/rehearsal day. This exercise should identify any weaknesses or deficiencies in plans and capabilities and give personnel the opportunity to clarify responsibilities, assignments, and procedures. If an operations-based exercise cannot be completed, a tabletop exercise may be substituted.

c. At the beginning of each day of the event, the event organizer must conduct an operations and safety briefing with ARFF/Crash, Fire and Rescue and EMS command staff, FAA/ATC, and security personnel on the IAP and associated procedures. This briefing must include procedures and methods by which ARFF/Crash, Fire and Rescue and EMS responders will reduce the radio communications and runway/taxiway clearances required to respond to an incident/accident during the event. The event organizer may delegate conduct of the briefing to the air boss or Incident Commander (IC).

2. Emergency Response to a Downed Aircraft: Resource Posture.

a. The IC or a member of the Unified Command (UC) must be positioned with the air boss while the CoW/A is in effect.

b. During the period of time when the CoW/A is in effect and participating aircraft are flying ("announced" scenario), dedicated ARFF/Crash, Fire and Rescue and EMS resources (e.g., apparatus, personnel, and materials) must be positioned and postured to be capable of arriving at any incident/accident location within the aerobatic box/flying display area within 1 minute of deployment/dispatch, regardless of whether the aerobatic box/flying display area is located above the ground, over water, or both.

i. ARFF/Crash, Fire and Rescue and EMS resources must be dedicated specifically to respond to aviation incidents/accidents. These resources must not be subject to any other non-aviation-related incidents/accidents during this period. If these resources must be called away from their ready positions, flying activities must be terminated until coverage is restored.

ii. The dedicated ARFF/Crash, Fire and Rescue and EMS resources must be in full working order. Personnel must remain with their assigned apparatus and must be ready to respond immediately to any incident or accident.

iii. The dedicated ARFF/Crash, Fire and Rescue and EMS resources must be positioned to provide the shortest and most direct routes to the show center and to provide their personnel with an unobstructed line of sight over the entire airfield, including the aerobatic box/flying display area in which the majority of the aviation event's flight operations are conducted.

iv. The dedicated ARFF/Crash, Fire and Rescue and EMS apparatus must not be positioned behind the crowd line or other obstruction, or staged in quarters (unless the location of quarters satisfies all posture requirements above). Barricades, folding chairs, or any other obstructions must not be positioned such that they obstruct the movement of dedicated ARFF/Crash, Fire and Rescue or EMS apparatus. Similarly, non-emergency response personnel, including friends and family members, must not be located in the immediate area of dedicated ARFF/Crash, Fire and Rescue or EMS apparatus, or otherwise impede or delay response.

c. During the period of time beginning with the arrival of the first public spectator, before the CoW/A is in effect until after the last public spectator has departed the venue and the CoW/A in no longer in effect or participating aircraft are not flying ("unannounced" scenario), ARFF/Crash, Fire and Rescue and EMS resources must be positioned

and postured to be capable of arriving at any incident/accident location within the aerobatic box/flying display area within 3 minutes of deployment/dispatch.

d. The IC or UC must designate a single individual to serve as Public Information Officer (PIO) and provide information to the media if an accident/incident occurs during the event.

C. Security Plan. The event organizer must ensure that aviation events are conducted without compromising or diminishing safety or creating an additional hazard to any nonparticipants or spectators.

1) All areas adjacent to the event site containing residential structures, public assembly areas, commercial facilities, transportation infrastructure (e.g., roads/highways, rail, and pipelines), or any occupied vessel, vehicle, or structure, must be carefully evaluated before making a final determination for site selection and for military participation (DD Form 2535). These areas must remain sterile and clear of any hazards during demonstrations if they are located under the aerobatic box/flying display area. It is not the FAA's responsibility to ensure that evacuation of each building within the sterile area is accomplished; the FAA will monitor compliance with the established plan.

2) The event organizer shall ensure that crowd management personnel are:

a) In sufficient numbers and available at the site during the event.

b) Properly trained and briefed on the security plan and procedures, ERP and procedures, essential personnel and access to secure areas, event credentials, crowd management strategies and tactics, and any plans developed for road closures and evacuation of buildings in sterile areas. There is no specific requirement for the use of uniformed police or security guards at an aviation event.

c) Properly credentialed and clearly visually distinguishable from other officials, essential personnel, and spectators. It is highly recommended that uniform clothing be worn (e.g., high-visibility T-shirts and hats) by individuals performing crowd management or other official duties.

D. Participants Safety Briefing (see Figure 3-57). The importance of the required Participants Safety Briefing and specialty/remote briefings to the safe and successful conduct of a special aviation event cannot be overemphasized. During the required Participants Safety Briefing, review all aspects of the flying, ground, and emergency procedures and event schedule of the proposed aviation event. Conduct the briefing in such a way that each of the performers and aviation event personnel in charge of the air, ground, and emergency operations leaves the briefing with a clear understanding of their responsibilities and procedures to be followed in normal or emergency situations that may occur during the course of the aviation event. Allow adequate time for the briefing, and convey information in a manner that is not rushed.

NOTE: The briefing requirements in this section are primarily focused on an aviation event briefing for an air show. Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for

examples of minimum requirements for each type of aviation event briefing and specialty/remote briefing.

1) The requirements for a Participants Safety Briefing held at an aviation event are as follows:

a) Conduct a briefing before the beginning of an aviation event on each day of the event. A night show briefing can be incorporated into this briefing if all parties are present.

b) Carry out a briefing in a secure room or area free of noise, unauthorized personnel, and other distractions. Attendance should be limited to flightcrews, appropriate flightcrew support staff, parachutists, ground performers such as pyrotechnic teams, public announcers, public safety/security command staff, and other key event personnel as determined by the air boss and/or IIC.

c) Ensure a formal check-in system is used for each participant's attendance at a briefing using a sign-in or other form that will be provided to the IIC. The Sample Participants Safety Briefing Signature Page for Aviation Events (Figure 3-204) provides, at a minimum, the information that should be recorded.

d) Performers who are not briefed are not permitted to participate in the aviation event covered in the briefing.

NOTE: Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for guidelines on performers not briefed due to circumstances beyond their control and performers whose attendance was not confirmed by the event organizer/responsible person (e.g., air boss).

e) For team performances (multiple aircraft), only the team leader is required; however, a delegate may represent the team leader, provided the person is a pilot/rated aviator member of the team.

NOTE: A USN Winged Naval Aviator or Naval Flight Officer listed as a team member meets the requirement for an authorized team representative.

f) For an aircraft that is to be launched from a remote airfield, the briefing may be given to the aircraft's pilot by conference call or telephone.

g) The briefing is conducted at a time as close to the performance time as practicable.

2) The briefing must cover the following points, at a minimum:

a) Key aviation event personnel (to include essential and event organizer personnel) are introduced and the means of communication with them is described.

b) Weather: The briefing should be given by a meteorologist if one is available, but may be given by a flight specialist or experienced pilot. The briefing need only cover aspects of the weather that are significant to the conduct of the aviation event such as the altimeter setting, cloud cover or ceiling, visibility, winds and temperature, DA, and other weather data forecast for the period of the event. If a low ceiling program (marginal weather) has been approved, the weather minima and a "low show" program must be briefed. If § 91.155 (cloud clearance) is waived, this must be briefed.

c) The airport airspace details, such as position, dimensions, height above MSL, the airspace in accordance with the NOTAM and/or any TFRs issued for the aviation event, local obstructions, warnings, and other pertinent information.

d) The method of coordinating participating and nonparticipating air traffic, including type of coordination, such as positive control by ATO and the air boss, advisory by Flight Service Station (FSS), or other. This aspect of the briefing must include aviation event frequencies and assigned radio call signs, if necessary. The method(s) of suspending the performance or recalling a performer by both radio and visual signals must be described. The air boss is only authorized to control participating aircraft.

e) The aviation event site, including the location of the primary spectator areas, secondary spectator areas, show lines, show center, aviation event demonstration area, hazmat or other special hazards, flying display area, direction of ingress and egress routes, holding areas, helicopter or other aircraft routes (rides), EMS-defined routes, and alternate airports using aerial photographs, maps, scale diagrams, or other means of depiction.

f) The performance schedule will include a performer's onstage time and routine duration time. Additional timing information (e.g., startup, taxi, takeoff, show and landing timings) may be included at the discretion of the briefer. Participants, if required, are to note their onstage and offstage timings if required. Performers should be aware of the position of the act they follow and location for the start of their performance. During this portion of the briefing, other programmed flying events before, during, or after the aviation event portion itself, such as balloons, parachutists, air races, flyovers, and similar aerial displays, must be covered.

g) Specialty briefings/remote briefings must be scheduled, and all attendees (including the FAA) must have the date/time/location of the briefing. This should be reviewed each day.

h) Flyovers and reenactments with multiple solo aircraft and formations flown in-trail have a required briefing before each demonstration.

i) Wake turbulence can be a factor at any aviation event where there is a mix of participants and should be addressed in preparing the flight program and mentioned at the briefing as a precaution to participants.

j) The designated Crash, Fire and Rescue IC must review firefighting and EMS equipment on site as defined in the ERP, including their required response time, location, and the access routes to be kept clear. He or she must discuss responsibilities for the notification of

incident/accident communication and roles and responsibilities for control after an incident/accident.

k) The responsible person must thoroughly review the use of ground-based and airborne-based pyrotechnics in the Participants Safety Briefing. The PSIC must complete the Ground-Based Pyrotechnic Briefing in accordance with subparagraph 3-148O, and the pyrotechnic briefing card must be used. Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for an example.

l) Identification and location of all participating aircraft equipped with operable ejection seats, jettisoned fuel tanks, ballistic seatbelts, or ballistic parachute systems.

m) Time synchronization: To ensure all participants are using the same time for aviation event coordination.

n) The flight operations director or other person responsible for flight operations ensures that each performer understands the applicable special provisions with respect to individual low-level authorizations contained in the CoW issued for the aviation event.

o) Circle the jumpers: All key personnel involved with circling the jumpers must complete the Circle the Jumpers Briefing. Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for an example.

p) Other specialty briefings: All key personnel involved. Refer to the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/ for examples.

q) Medical factors affecting pilot performance (e.g., G-induced loss of consciousness (G-LOC) risk, over-the-counter medication, pilot fatigue, heat stress, effects of G forces) and factors affecting orientation of flight (e.g., over water, DA, or unusual terrain).

r) A departure briefing to advise participants of ATC procedures to be followed on leaving the aviation event site. Remind pilots that their departures are to be normal and that no ad hoc demonstrations are to take place during their departures.

s) Review of all waived or authorized regulations, applicable exemptions, and applicable special provisions covering risk mitigation.

t) Any other subjects as necessary.

E. Aircraft and Vehicle Parking. In many cases, static display areas are positioned before the general public arrives (on Thursday or Friday) and are not moved at all until the spectators leave the event. Event organizers may also arrange for participating aviation event aircraft to be on static display to the public prior to the event. In this case, the static display area is considered a maneuvering area, and during the flight program of the event, all nonparticipants must be kept out of this area in accordance with the security plan.

1) In accordance with the security plan, visiting aircraft or vehicle parking areas that cannot be kept clear of persons during the flight program of an aviation event are deemed to be spectator areas and the safety distances and overflight provisions of these standards apply to these parking areas.

2) Engine run areas must meet safety distances for guarded and unguarded aircraft established in subparagraph 3-148G5).

3) In accordance with the ERP, aircraft equipped with operable ejection seats, jettisoned tanks, ballistic parachute systems, and ballistic seatbelts must be identified to the event organizer and emergency response officials. These aircraft should have seats, jettisoned fuel tanks, ballistic parachutes, ballistic seatbelts, and systems de-energized and secured when parked.

4) Aircraft crewmembers supporting a static display should consider the following safety and risk mitigation strategies in addition to subparagraph 3) above:

a) Conduct a risk assessment to identify potential problems or issues associated with static display location and crowd management.

b) Disconnect the aircraft battery; or, if unable, consider disabling the aircraft by pulling the appropriate start and ignition circuit breakers.

c) Keep unattended aircraft doors closed/locked. At least one crewmember should guard open doors.

d) If spectator access is granted to an aircraft on display, two crewmembers should be present.

e) Spectators should not be allowed to touch cockpit switches and flight controls.

F. Crowd Management Barriers. The event organizer shall ensure the emergency response and security plan addresses the separation between spectators and flight lines, aircraft movement areas, and access routes for emergency vehicles can be maintained.

1) There are no specific requirements regarding the type of barrier used and how it is guarded/monitored. If a nonphysical rope or line barrier on the ground is used, sufficient crowd management personnel are in place to ensure that the spectators remain behind it. The specific type of crowd management barriers used is dependent on the type of event and size of crowd present.

2) Barriers protected or guarded by wing walkers, marshallers, and crowd management monitors that prevent entry by unauthorized personnel into areas where engines are running and/or propellers are turning, must be 50 feet from the spectator area.

G. Emergency Entrances, Access Lanes, and Exits. The event organizer shall ensure that the emergency response and security plan address the following:

1) Emergency entrances, access lanes and exits are available to and from the event site;

2) Procedures are in place to keep them clear in an emergency situation; and

3) Procedures are in place to ensure additional helicopter air ambulances (HAA) and emergency response vehicles have a location to stage in a mass casualty event.

H. Public Address System. The event organizer is responsible for ensuring that the emergency response and security plan address the following:

1) A public address system (to include a backup system) or other means of communicating instructions to spectators shall be in place for normal circumstances and used in the event of an emergency; and

2) The public address announcer shall be thoroughly briefed and familiar with emergency procedures and be prepared to assist in crowd management when required in the event of an emergency.

I. Weather Conditions.

1) Day.

a) Flight demonstrations will not be conducted unless the ceiling is at least 1,500 feet, and the visibility is at least 3 sm at the time of the demonstration.

b) Except for North American military performers, aerobatic maneuvers conducted by Category III aircraft during flight demonstrations will not be conducted unless the ceiling is at least 1,500 feet, and the visibility is at least 3 sm at the time of the demonstration.

c) The FAA IIC may adjust the minimum ceiling and visibility requirements at his or her discretion, but no less than 1,000 feet and 3 sm if:

- Except for North American military performers, aerobatic maneuvers are conducted by Category III aircraft only within an operations area having a diameter of no more than 2 sm; and
- To the surface as a result of the reduced weather conditions.

d) Originally scheduled aerobatic maneuvers are not modified or conducted in close proximity to the surface as a result of the reduced weather conditions.

e) The FAA IIC may specify a higher ceiling minimum and a higher visibility minimum where justified by the presence of surrounding terrain or other local condition.

f) Flight demonstrations may be conducted "clear of cloud" when the requirements have been met to waive § 91.155, cloud clearance requirements.

2) Air Race Weather. Racing flight operations are not authorized when the reported (or observed) flight visibility is less than 6 sm. Race maneuvers shall be conducted at least 2,500 feet below the ceiling. FAA IIC may authorize deviations, but never less than 3 sm for a race 300 knots (345 mph) or less and never less than 1,000 feet below the ceiling. A maximum crosswind component is established for each class of aircraft.

3) Night. The minimum weather conditions at night require a cloud base no lower than 2,500 feet and 3 sm visibility.

4) Military. Military participants must comply with minimum weather requirements established in the command-approved maneuvers package, except when the minimum weather requirements are less restrictive than the policy established in this order.

3-155 SPECIAL PROVISIONS. Special provisions are conditions, requirements, or limitations necessary to protect nonparticipating persons, property on the surface, and other users of the national airspace system. Each CoW/A must include special provisions as determined by the issuing FSDO.

A. Applicability. Many safety provisions are general in nature and are applicable to most aviation events. Other provisions may apply only to certain types of events. Provisions that appear on the CoW/A should be restricted to protective measures, controls, or requirements that are not otherwise specified by the regulations. Special provisions never supersede aircraft airworthiness operating limitations.

B. Ensuring Safety. The special provisions ensure that the event can be conducted without an adverse effect on safety. Every CoW/A must contain special provisions to ensure an equivalent level of safety with the rules that are waived for the nonparticipating public and nonparticipating air traffic.

C. Regulatory Basis. Failure to comply with any special provision is a violation of the terms of a CoW/A and is justification for cancellation of the CoW/A. This constitutes a violation of Title 49 of the United States Code (49 U.S.C.) § 44711(a)(2)(B) and/or 44711(a)(5). The FAA has the authority to cancel or delay any or all acts or events if the safety of persons or property on the ground or in the air are in jeopardy or there is a violation of the terms of the CoW or CoA.

D. Use of Special Provisions. Some events require extensive and highly detailed special provisions, whereas the special provisions for other events can have less detail. In addition to variation among events, local conditions may have a significant impact on the necessary special provisions.

1) Special provisions may pertain to associated protective measures and control requirements that may not be specifically covered by the regulations. In addition, it may be necessary to increase one regulatory minimum in order to authorize safe deviation from another. For example, in order to permit aerobatic flight in Class D airspace, it might be necessary to increase the minimum visibility requirement to 5 miles or some other appropriate value.

2) When applicable, IICs should insert the name of the responsible person, found in Item 2 of the application, into the text of the special provisions to indicate the holder of the CoW/A and the air boss, race director, or balloonmeister, as required.

3) Any special provisions added, deleted, or modified that are not listed on the National Aviation Events Program website (see subparagraph E below) must have AES or NAES approval before inclusion. This should be documented in the FSDO file in the form of electronic media or written documentation.

4) Type the provisions with as little editorial change as possible onto the CoW/A form or on attached pages. Only include applicable special provisions (common special provisions are always included; add the applicable aviation event special provisions). Numbers and language can be inserted or changed to suit each event only when necessary, appropriate, and in accordance with the guidance in this order. Editorial comments enclosed in square brackets, [ ], should not be included on the certificate.

E. Examples of Common Special Provisions. The list of special provisions is found on the FAA website at https://www.faa.gov/about/initiatives/airshow/.

3-156 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of regulatory requirements in parts 91, 101, 103, 105, and 107, and FAA policies and qualification as an ASI (Operations).

1) It is preferred that the inspector assigned this task is also responsible for the surveillance of the aviation event (see Volume 6, Chapter 11, Section 10).

2) The inspector assigned this task and the subsequent surveillance must have completed OJT and participated in issuing a CoW and the surveillance of three aviation events with an inspector qualified in this task.

3) For an aviation event at which a military jet demonstration team performs, the inspector must have satisfactorily completed OJT including participation in the feasibility study, the preseason evaluation meeting, waiver preparation, and surveillance at two air shows that include a military jet demonstration aerobatic team.

B. Coordination. This task requires prior coordination with the jurisdictional ATC facility and service area, the ARP Division, and the airworthiness unit. For rocket launches, coordination with AST and ATO is required. For UAS demonstrations coordination with AUS is required.

3-157 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 1, 61, 91, 101, 103, 105, 107, 133, and 139.
- AC 91-45, Certificates of Waiver or Authorization: Aviation Events and Aerobatic Practice Areas.
- AC 103-7, The Ultralight Vehicle.
- AC 105-2, Sport Parachuting.
- AC 107-2, Small Unmanned Aircraft Systems (sUAS).

B. Forms:

- FAA Form 7711-1, Certificate of Waiver or Authorization (Figure 3-51); or CoA J501 or CoW J502.
- FAA Form 7711-2, Application for Certificate of Waiver or Authorization (Figures 3-49 and 3-50).
- FAA Form 8710-7, Statement of Aerobatic Competency (SAC) (Figure 3-52).
- Transport Canada Form 26-0307, Statement of Aerobatic Competency (SAC) (Figure 3-53).

C. Job Aids:

- Sample letters and figures.
- JTAs: 2.5.14 and 4.7.2.
- Aviation Event Aircraft Documents Checklist.
- Aircraft Status Sheet Form.
- Aviation Event Performer Documents Checklist.
- Aviation Events Performer and Aircraft Inspection Job Aid.
- Aviation Event FSDO Checklist.
- B4UFLY instructions at https://www.faa.gov/uas/recreational_fliers/where_can_i_fly/b4ufly/.

3-158 GENERAL PROCEDURES.

A. CoW/A. The assigned Operations ASI/IIC must determine if a CoW/A is required. Aviation safety technicians may support the assigned Operations ASI/IIC. If the event cannot take place in compliance with the regulations, a CoW/A is required.

1) If a CoW/A is not required, no further action is required with this task.

a) Consideration should be given to fly-ins, flyovers, and special events (e.g., candy drops, helicopters, military demos (recruiting), civilian flyovers, UAS delivering a game ball or flowers to a football stadium, or to fly Santa Claus or a celebrity into a shopping center property).

b) These events may not always require a CoW/A. In those cases, the IIC should recommend following guidelines (e.g., safety distances, emergency response, and security) in this policy and ACs as a best practice to ensure the safety of spectators at the event.

2) DD Form 2535, section IV, should be completed and signed by the assigned Operations ASI/IIC, if requested by an event organizer. These forms are required for military vehicle and static displays, as well as for military flight demonstrations and flyovers. DD Form 2535 can be found by going to https://www.faa.gov/about/initiatives/airshow/ and selecting one of the DOD teams. The team names are hyperlinked to the team websites from which you can view, print, or download this form. The USAF requires the event organizer to apply on their website for any type of support, flying or static displays.

3) If a CoW is required, brief the event organizer on preparing FAA Form 7711-2.

4) If conducting an air race (closed course), brief the event organizer on requirements for accreditation in Volume 3, Chapter 6, Section 2.

5) If conducting an aerobatic competition or processing a request for an APA, brief the event organizer on the requirements located in Volume 3, Chapter 5, Section 1 for the issuance of a CoW for an APA or an ACB. If conducting an ACE/P operation in conjunction with the aviation event, see the requirements located in Volume 3, Chapter 9, Section 1.

B. PTRS. Open the PTRS file and provide the event organizer with FAA Form 7711-2 (see Figures 3-49 and 3-50).

C. Determine if Application is Complete.

1) Application Incomplete or Inaccurate. If the application is incomplete or inaccurate, the assigned Operations ASI/IIC must complete the “FAA Action” block on FAA Form 7711-2 by marking “Disapproved.” Write the reason for disapproval in the “Remarks” section. Return the application to the event organizer.

2) Application Complete. If all pertinent information and supporting documents have been submitted with the application and the application is complete and correct, evaluate the proposed operation.

D. Evaluate Proposed Operation. The assigned Operations ASI/IIC must use the application information and the items listed below to determine if the proposed operation can be accomplished without an adverse effect on safety:

1) Review, if applicable, previous CoW or CoA issued for aviation events at the same location.

2) Coordinate the use of controlled airspace with the jurisdictional ATC facility as soon as possible. Include any ATO LOAs or special conditions considered necessary by ATC as part of the CoW/A.

3) Using the list of participating aircraft, UAS, and rockets, verify that the airworthiness unit completed a review of the required documents.

4) Using the list of participating aircraft, UAS, and rockets; and Table 3-1A, Example of Airplane (Including UAS Airplane) Show Line Category, determine the required show line distance.

5) Accompanied by the event organizer, conduct an onsite visit to sites used for the first time and to sites unfamiliar to the inspector.

a) Clarify or confirm information submitted with the application.

b) Verify the distances and the location of the crowd lines, show lines, racecourses, etc. Use of laser measuring devices is recommended.

6) Verify that a NOTAM has been issued and is appropriate.

a) A copy of the published NOTAM (Class D or TFR) should be attached to the CoW.

b) Brief on the NOTAM (Class D or TFR) at each Participants Safety Briefing for all participants.

7) Verify that the security plan and ERP are satisfactory and any items identified during practice drills have been resolved.

E. Approve or Disapprove CoW/A.

1) CoW/A Disapproval. If the entire operation cannot be approved, the assigned Operations ASI/IIC must complete the "FAA Action" block on FAA Form 7711-2 by marking "Disapproved." Write the reasons for disapproval in the "Remarks" section. Return the application to the event organizer.

2) CoW/A Approval. If the entire operation can be approved, the assigned Operations ASI/IIC must complete the "FAA Action" block on FAA Form 7711-2 and develop FAA Form 7711-1 and the special provisions.

F. Develop Special Provisions List. Develop the list of special provisions appropriate to the aviation event using the information submitted with the application and the suggested special provisions on the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/.

G. Issue CoW/A (FAA Form 7711-1 or CoA J501/CoW J502).

1) Complete FAA Form 7711-1 (Figure 3-51), as follows:

a) Enter the event organizer's name and address as they appear in Items 1 and 2 on the application.

b) Include a brief summary of the aviation event in the "Operations Authorized" block. For aviation events involving aerobatic flight, a rocket launch, or a UAS demonstration clearly define the dimensions of the affected airspace. A CoW/A for an air race should specify whether it is closed-course or cross-country.

c) All rocket launches are required to have the approved AST safety analysis attached.

d) All UAS demonstrations (civil and public) are required to have the approved safety analysis in accordance with the procedures established on the FAA website at https://www.faa.gov/about/initiatives/airshow/ for the steps that should be followed to make the necessary changes to authorize the UAS operation at an aviation event.

e) Except for parachute demonstrations, include in the "List of Waived Regulations" and "Title" blocks each specific regulation (section and/or subsection) waived by the FAA and include a description of the regulation waived. Ensure that the listed regulations correspond to those on FAA Form 7711-2 and conform to §§ 91.905 and 107.205. When many regulations are involved, list the specific rules on a separate sheet of paper and attach it to the certificate. Use the following statement: "A list of waived regulations is attached." In the case of parachute demonstration jumps, use the following statement, "Parachute demonstrations are authorized in accordance with § 105.21."

f) Place the total number of special provisions in the appropriate spaces in the "Special Provisions" block.

g) Type and sequentially number the special provisions on separate pages and check the box, "see attached."

h) Use only the special provisions, which apply to the operations in the CoW or CoA application.

i) Group the provisions by type of event, such as common provisions and air show provisions or air race provisions. Parachute demonstration provisions are inclusive.

j) Attach any additional attachments to the CoW/A.

k) When an aviation event is scheduled for multiple days, uses a separate sheet to list the dates and times the certificate is in effect, if needed. Use the following statement: "See attached page [insert appropriate page number] for dates and times."

l) Have the responsible FSDO manager or their designated representative, which may be either the assistant manager or another supervisor from within that FSDO, sign FAA Form 7711-1.

1. Attach to FAA Form 7711-1 a copy of FAA Form 7711-2 and its supporting documents.

a. Place a copy of both forms in the FSDO file.

b. Return the original of both forms to the event organizer. Send electronically, when possible, and retain the original in the FSDO file. Also include the DD Form 2535, Aircraft Status and Inspection Form (Figure 3-54), the Event Organizer Checklist for performers and for aircraft (Figures 3-200 and 3-201), and the Participants Safety Briefing Signature Page for Aviation Events (Figure 3-204).

2. Send a copy of FAA Forms 7711-1 and 7711-2 to the responsible ATO Service Center's Operational Support Group. (A current listing of the ATO Service Area email addresses can be found at https://www.faa.gov/about/initiatives/airshow/.)

3. Send the following documents to the assigned AES via the designated General Aviation and Commercial Division correspondence mailbox. Specify the name/location/date of the event, the assigned AES, and the responsible FSDO. Include a copy (electronic format is required) of a:

a. Signed FAA Form 7711-1 and all attachments for a CoW for a "complex" air show, when signed by the FSDO manager and issued to the event organizer.

b. Completed DD Form 2535 for a military jet demonstration team or a military single-ship demonstration team request.

c. Signed FAA Form 7711-1 and all attachments for a CoW for an air race or balloon event, or a CoA for a parachute demonstration when requested by the NAES on an ad hoc basis.

2) Complete CoA J501 for a parachute jump and/or complete CoW J502 for an aviation event in lieu of FAA Form 7711-1 within WebOPSS.

a) Within WebOPSS, issue or reissue the CoW/A as a part 91 operator/organization with a designator code of "J" and the office code.

b) Use the WebOPSS "Guidance" document associated with the paragraph for further instructions.

c) Have the responsible FSDO manager or their designated representative, which may be either the assistant manager or another supervisor from within that FSDO, sign CoA J501/CoW J502. An inspector may sign on behalf of the manager or supervisor so long as the manager or supervisor has final review.

1. The responsible person's signature is on FAA Form 7711-2.

2. Special provisions are included in CoA J501/CoW J502.

d) Attach to WebOPSS paragraphs A001, A004, and CoA J501/CoW J502 a copy of FAA Form 7711-2 and its supporting documents.

1. Place copy of both in the FSDO file; and

2. Return the original of both forms to the event organizer. Also include the Event Organizer Checklist for performers and for aircraft (see Figures 3-200 and 3-201).

e) Send a copy of CoA J501/CoW J502 and FAA Form 7711-2 to the responsible ATO Service Center's Operational Support Group. (A current listing of the ATO Service Area Contacts can be found at https://www.faa.gov/about/initiatives/airshow/.)

H. PTRS. Make the appropriate PTRS entry.

I. FSDO Aviation Event Checklist. Complete checklist and place a copy in FSDO file.

3-159 TASK COMPLETION. Completion of this task results in one of the following:

- Issuance of a CoW,
- Issuance of a CoA,
- Disapproval of an application for a CoW/A, or
- Completion of DD Form 2535.

3-160 FUTURE ACTIVITIES.

- Surveillance of an aviation event.
- Possible cancellation of the CoW or CoA as a result of noncompliance with its provisions.
- Consideration of a future application for a CoW or CoA from the same or other event organizers.

Figure 3-26. Timelines and Coordination for an Application for Certificate of Waiver or Authorization

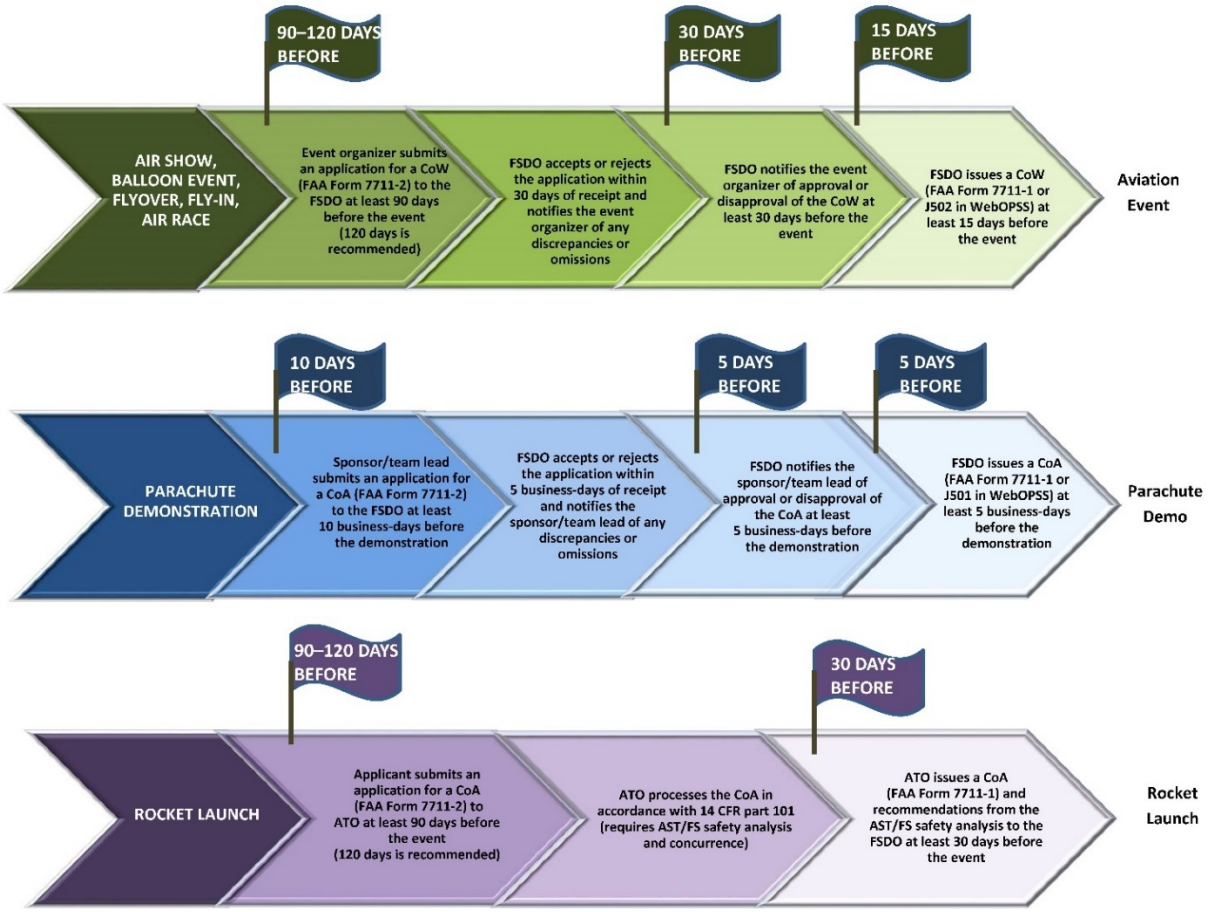


Figure 3-26. Timelines and Coordination for an Application for Certificate of Waiver or Authorization (Continued)

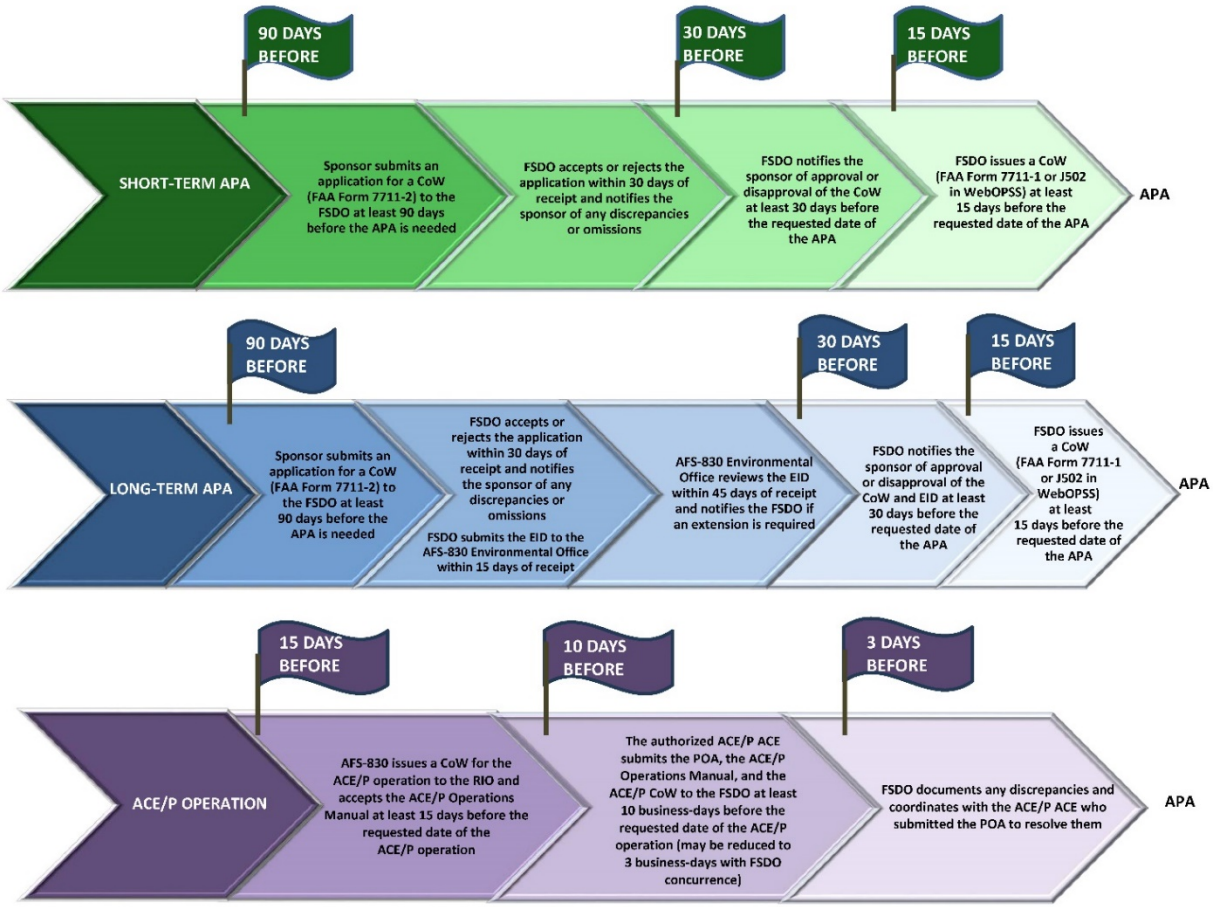


Figure 3-27. Air Show Fly Zones Relative to Airspace

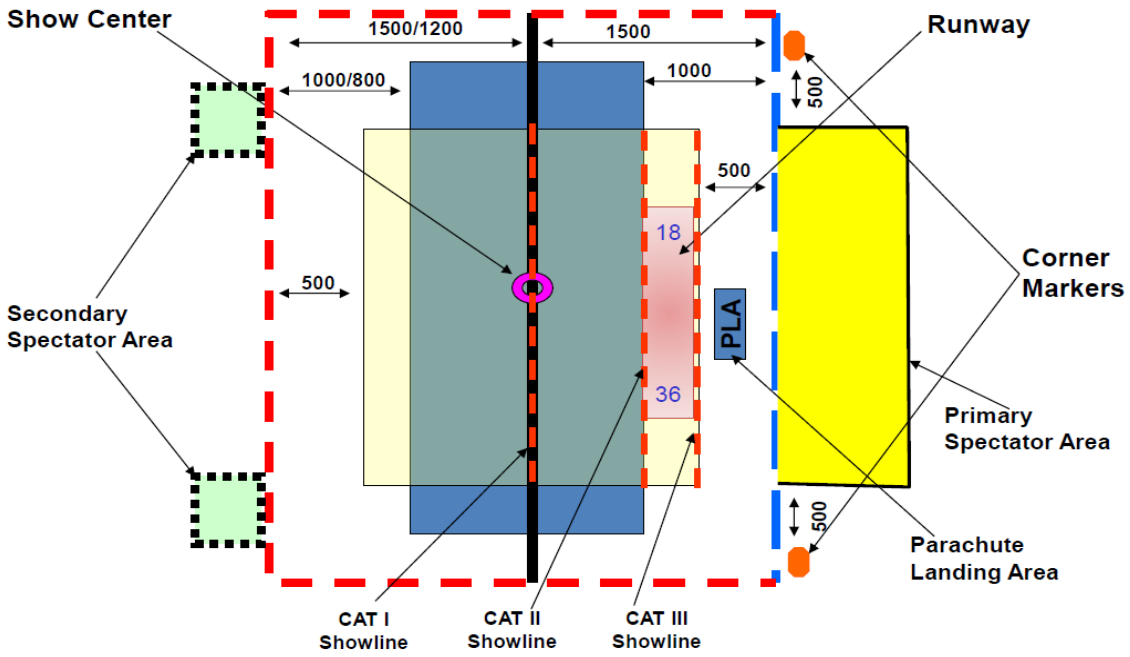


Figure 3-28. Example of an Air Show Demonstration Area

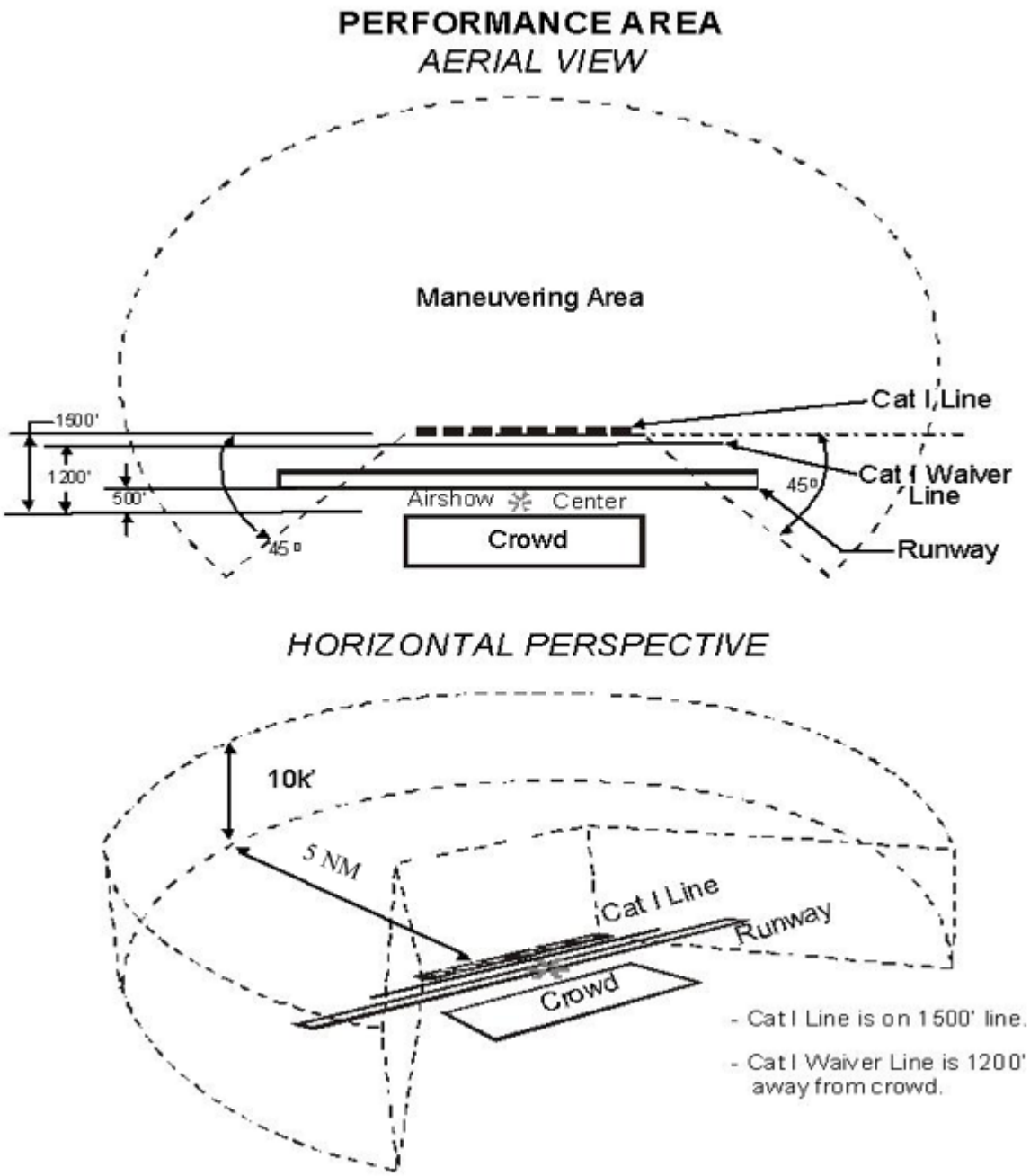


Figure 3-29. Example of an Air Show Layout (ARFF/Crash, Fire and Rescue)

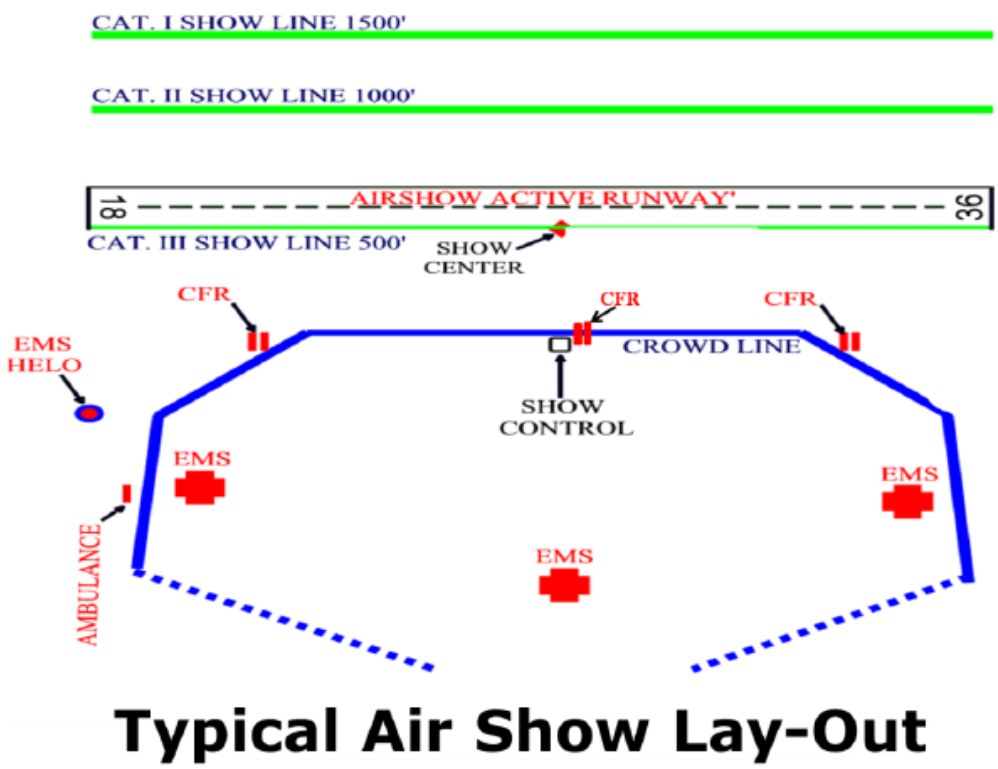


Figure 3-30. Minimum Separation Distance (200 Feet) Between Runway or Takeoff Area and the Primary Spectator Area

Minimum Separation Distance Between Runway or Takeoff Area and the Primary Spectator Area for airplanes, gyroplanes, and weight-shift control aircraft with a V_{REF} of 60 kts or less and a certificated gross weight of 2,500 lbs or less, ultralights (airplanes, gyroplanes, and weight-shift control), gliders, powered and unpowered paragliders and hang gliders

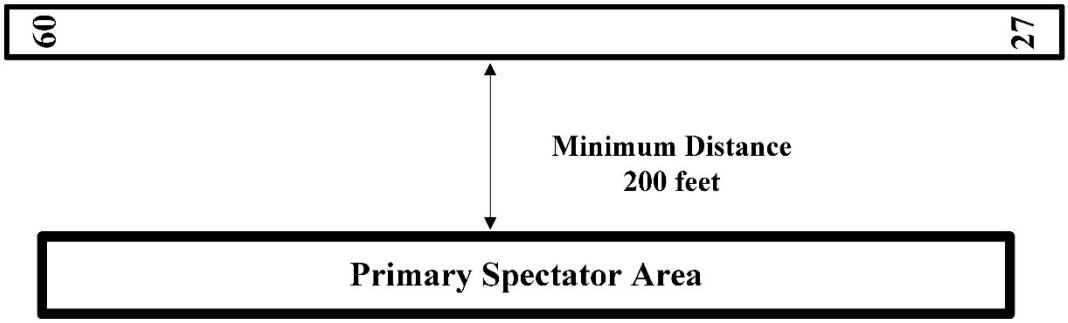


Figure 3-31. Minimum Separation Distance (300 Feet) Between Runway or Takeoff Area and the Primary Spectator Area

Minimum Separation Distance Between Runway or Takeoff Area and the Primary Spectator Area for airplanes and gyroplanes with a V_{REF} of more than 60 kts but less than 100 kts or less and certificated gross weight of 50,000 lbs or less

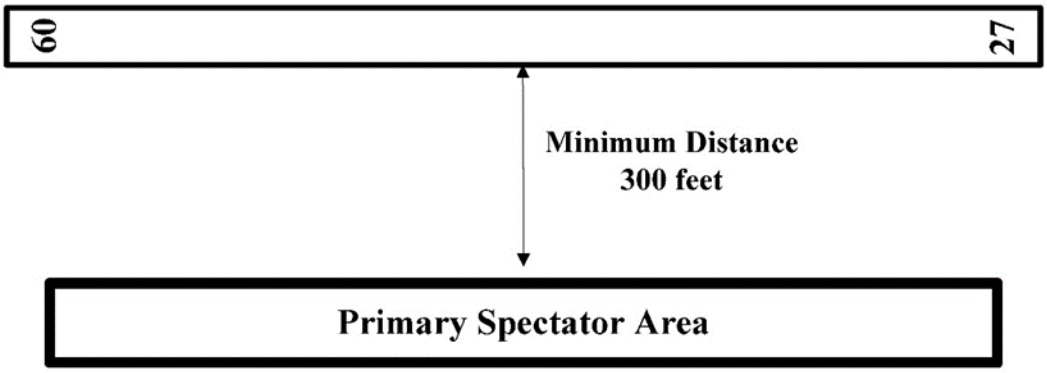
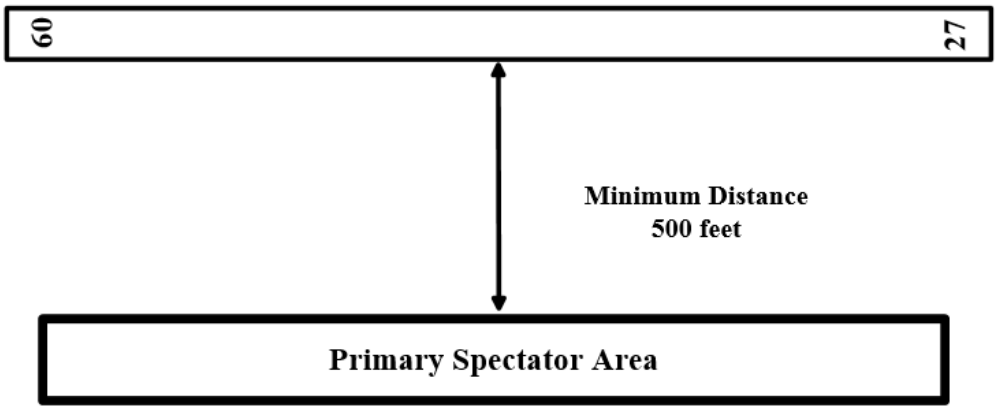


Figure 3-32. Minimum Separation Distance (500 Feet) Between Runway or Takeoff Area and the Primary Spectator Area

Minimum Separation Distance Between Runway or Takeoff Area and the Primary Spectator Area for airplanes with V_{REF} in excess of 100 kts, airplanes and gyroplanes with a certificated gross weight in excess of 50,000 lbs, and airplanes and helicopters conducting excessive, nonaerobatic maneuvering on takeoff or landing (comedy acts)



As per subparagraph 3-148H1), the minimum distances illustrated in this diagram for:
a) single aircraft operations conducted on the center line are to be measured to the runway center line; and
b) formation takeoff/landing operations are to be measured to the runway edge.

Figure 3-33. Minimum Distance from Spectators, Congested Area(s), Occupied Buildings, and Secondary Spectator Areas for Category I

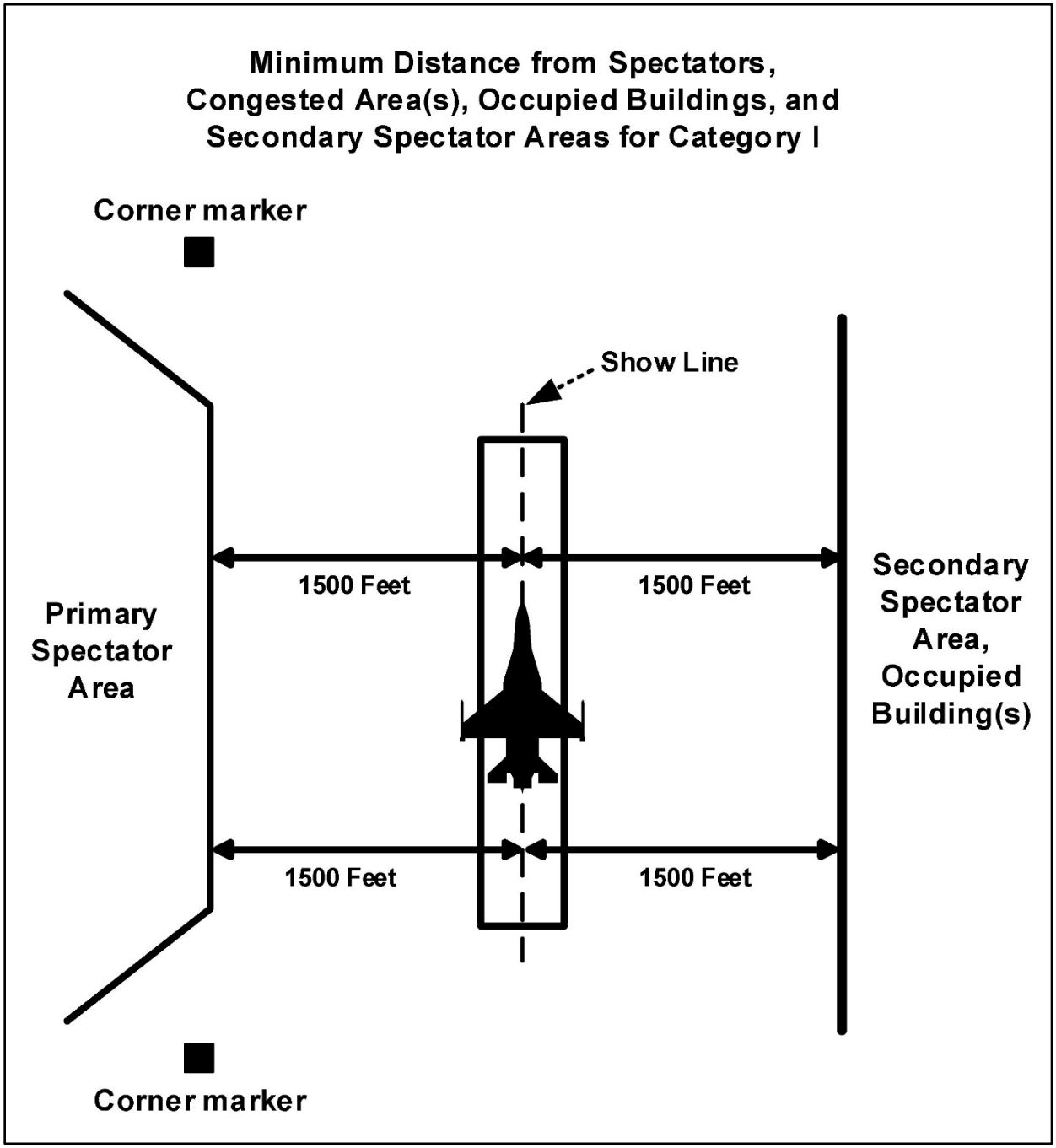
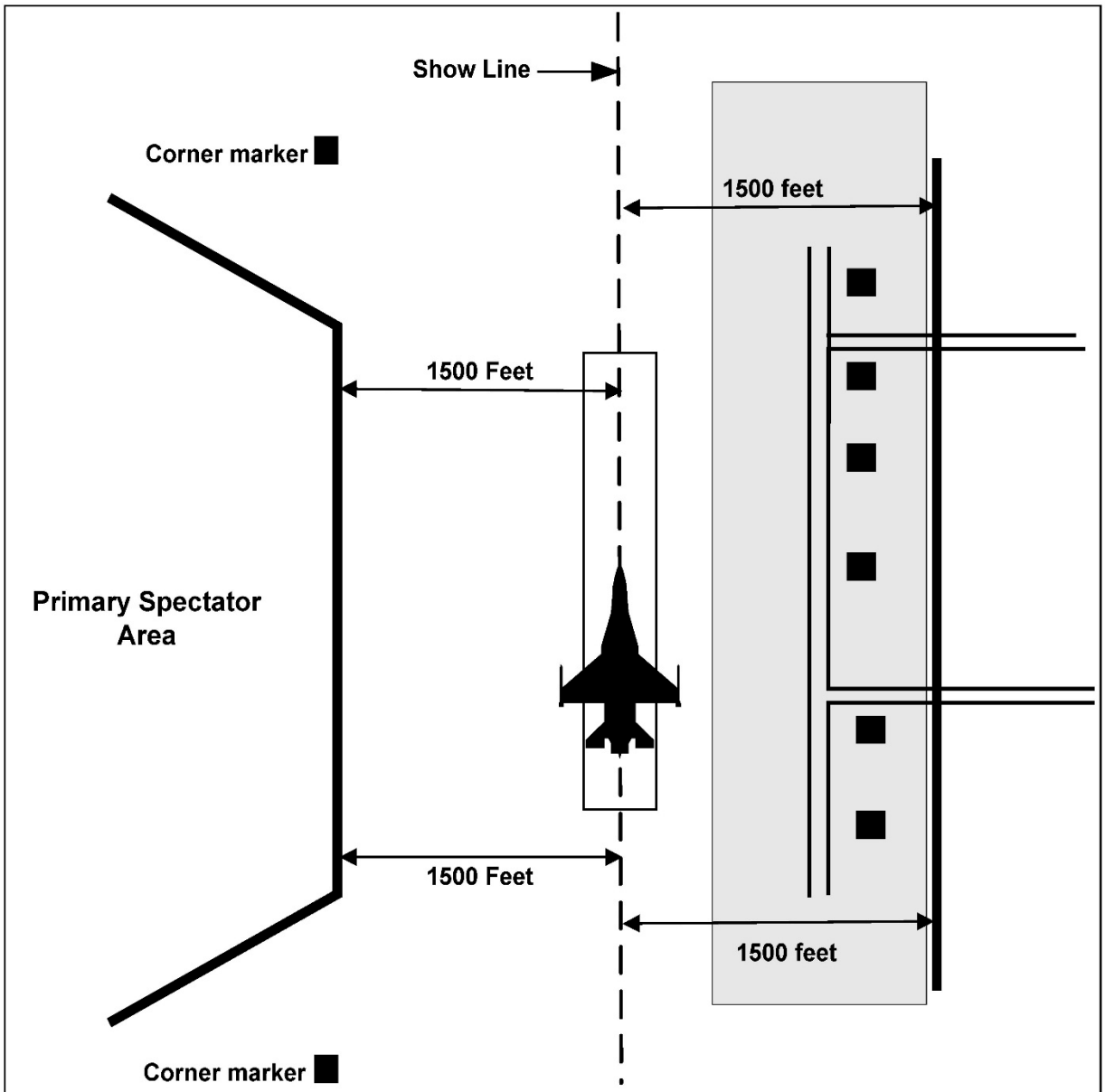
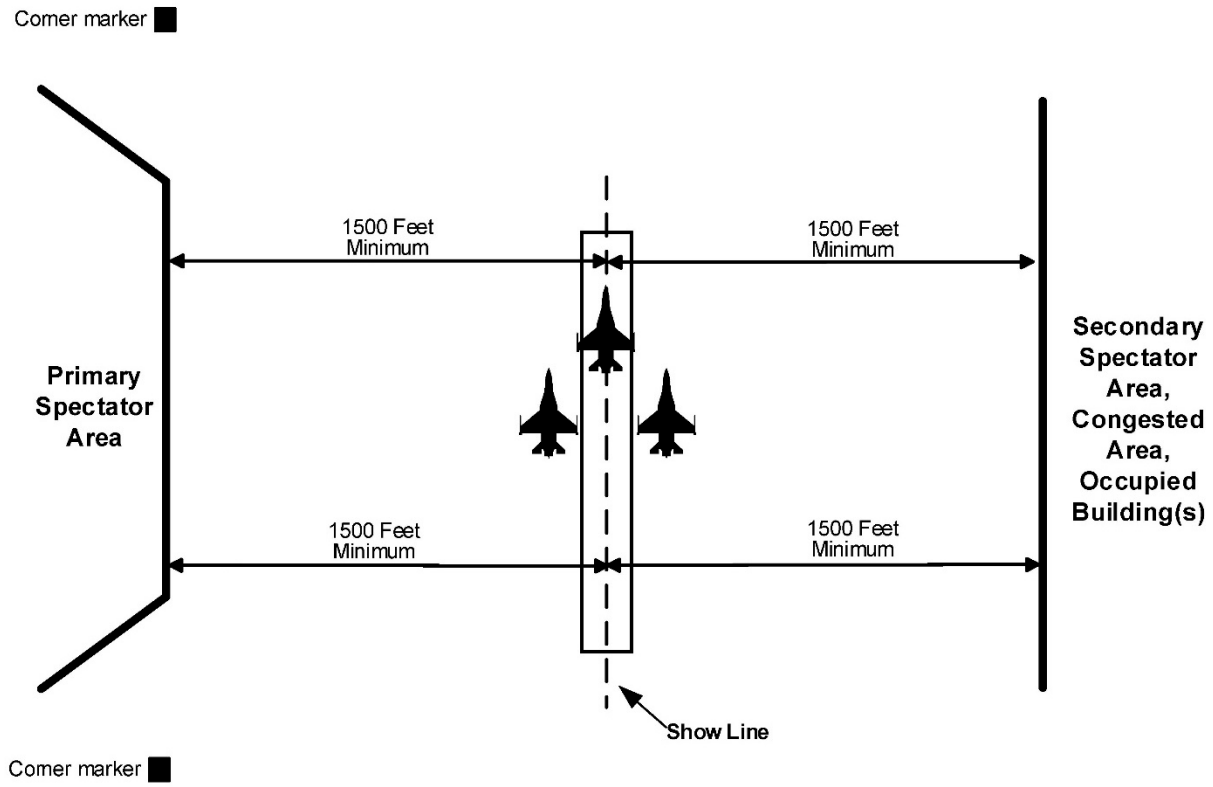


Figure 3-34. Site Layout with Flying Display Area Less Than 1,500 Feet from Show Line



Note: In the example depicted above, the buildings and the roads lie within the flying display area less than 1500 feet from the show line. For this site layout to be approved, all buildings must be vacated and road access denied to highlighted area.

Figure 3-35. Example of Category I Aircraft Formation on Show Line



In the example above the formation lead may be centered on the show line and the critical aircraft must be within one wingspan of the formation lead

Figure 3-36. Minimum Distance from Spectators for Category II Aircraft

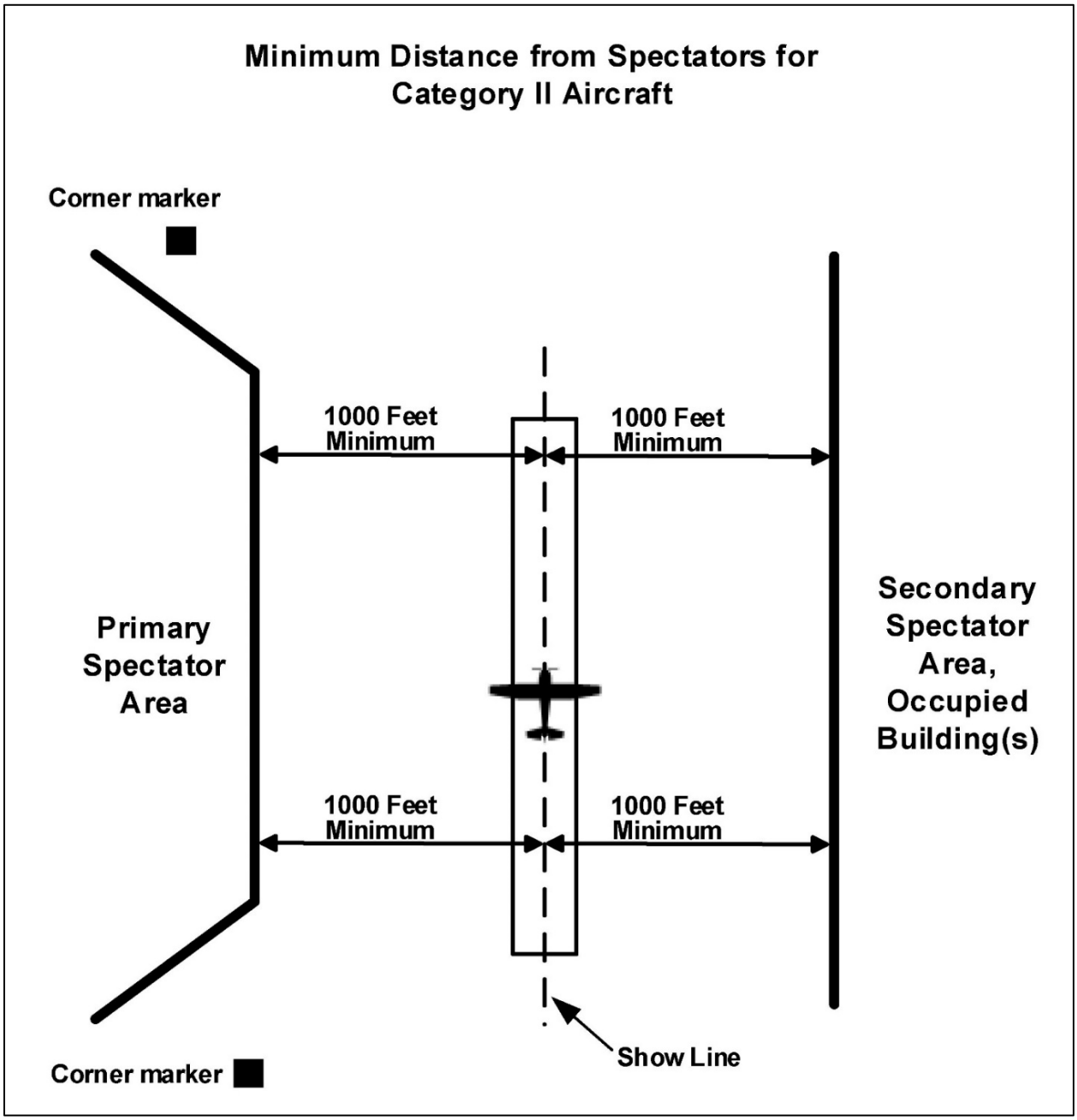
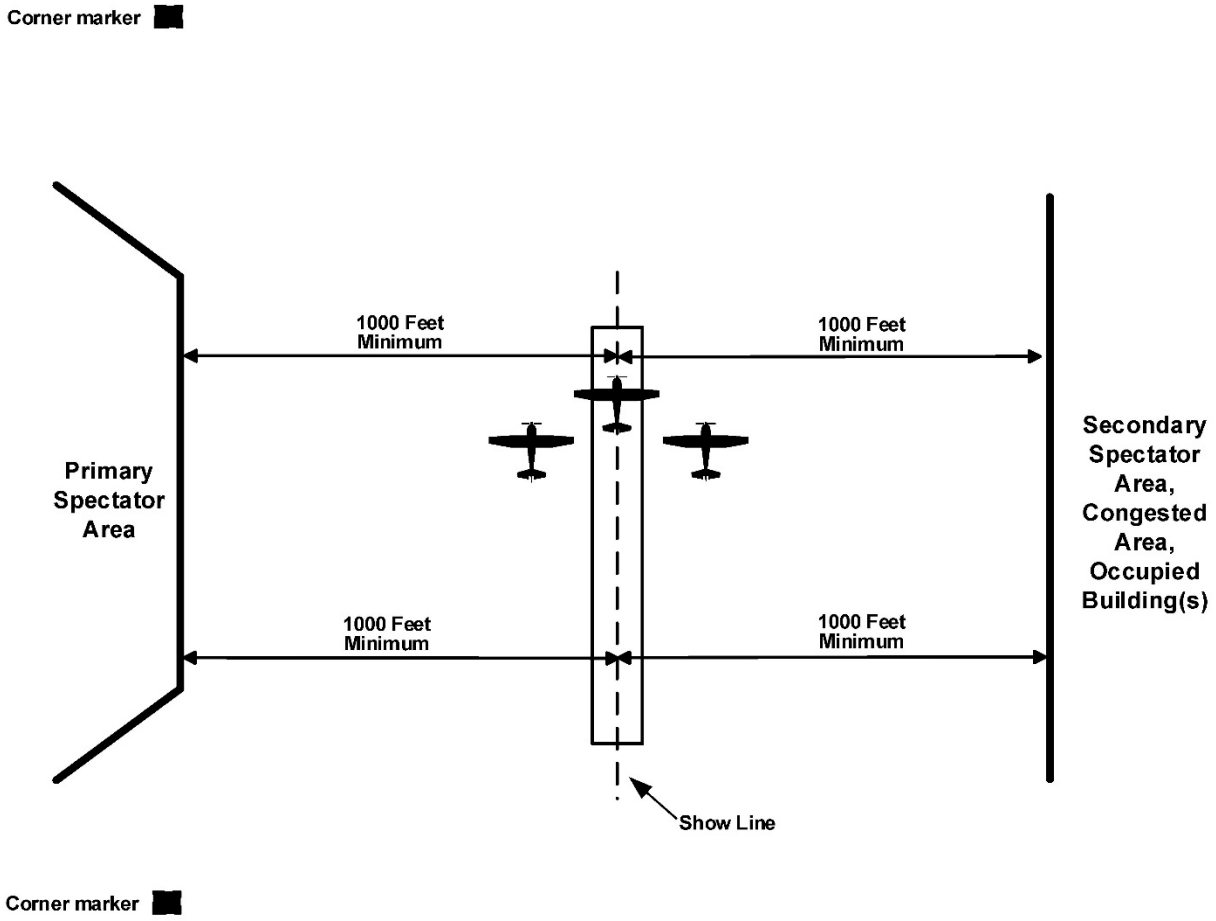


Figure 3-37. Example of Category II Aircraft Formation on Show Line



In the example above the formation lead may be centered on the show line and the critical aircraft must be within one wingspan of the formation lead

Figure 3-38. Single Category III Aircraft in Minimum Width Flying Display Area

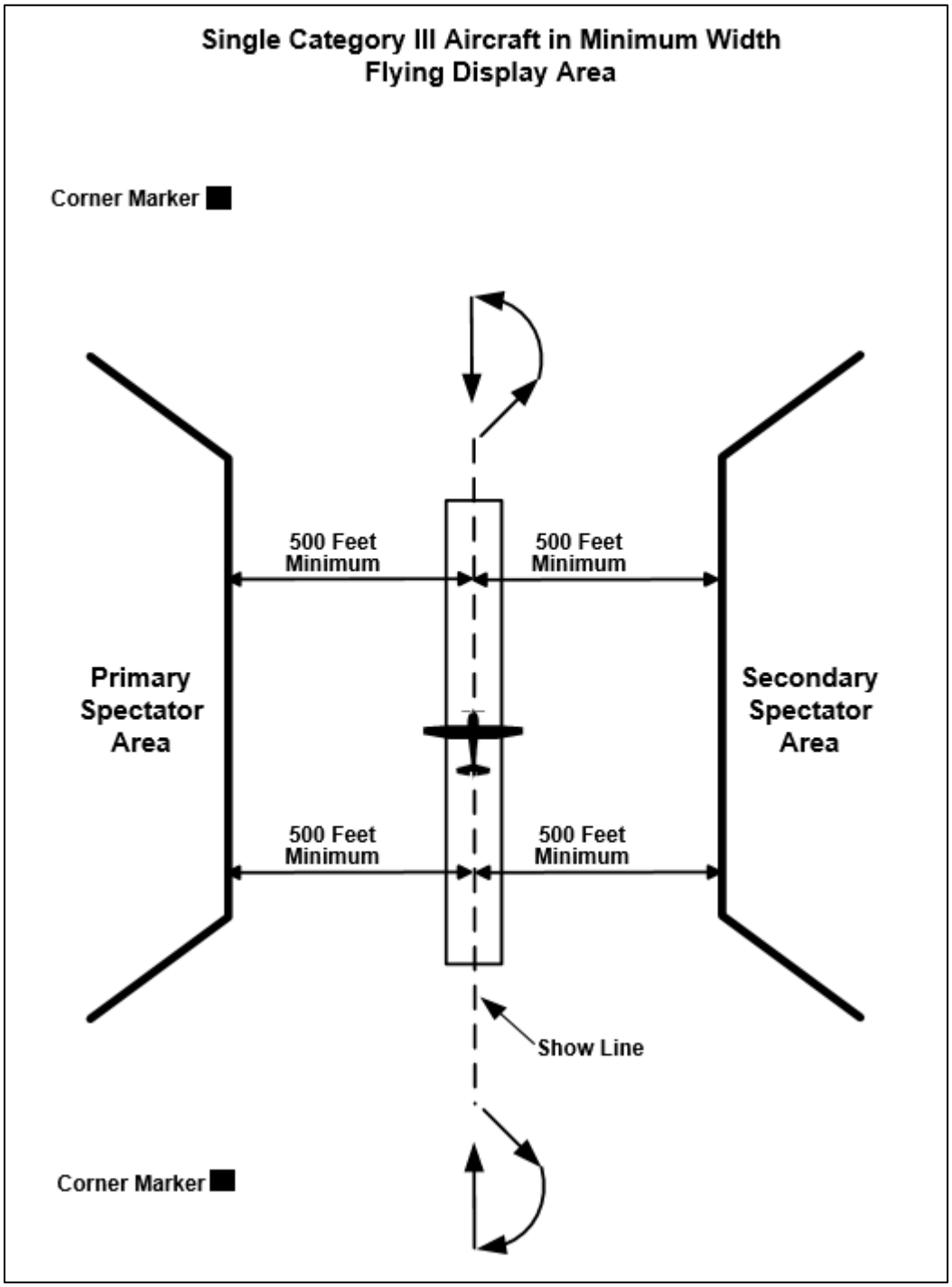


Figure 3-39. Minimum Width of a Flying Display Area for Category III Aircraft Performing Lateral and/or Turning Maneuvers

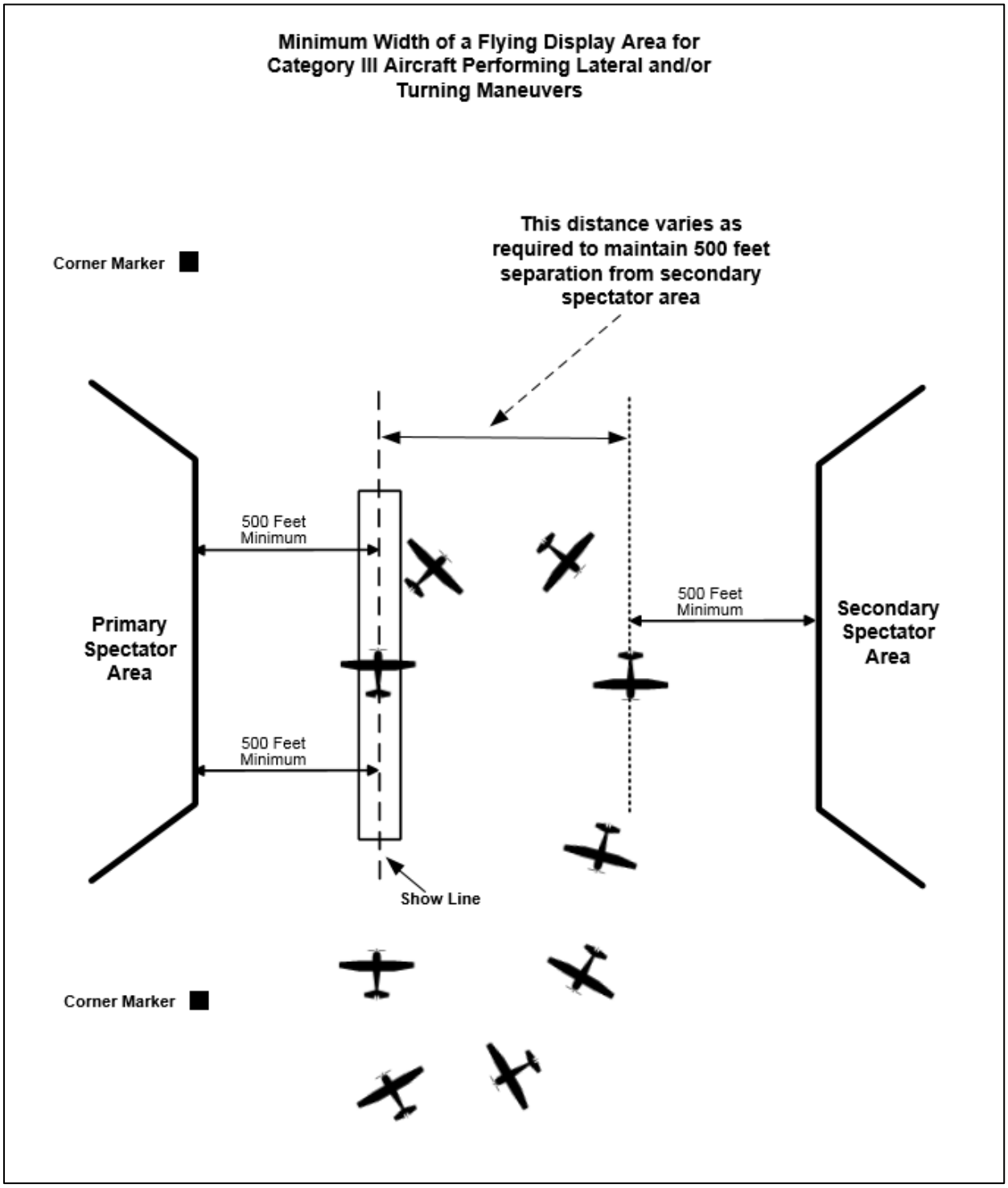
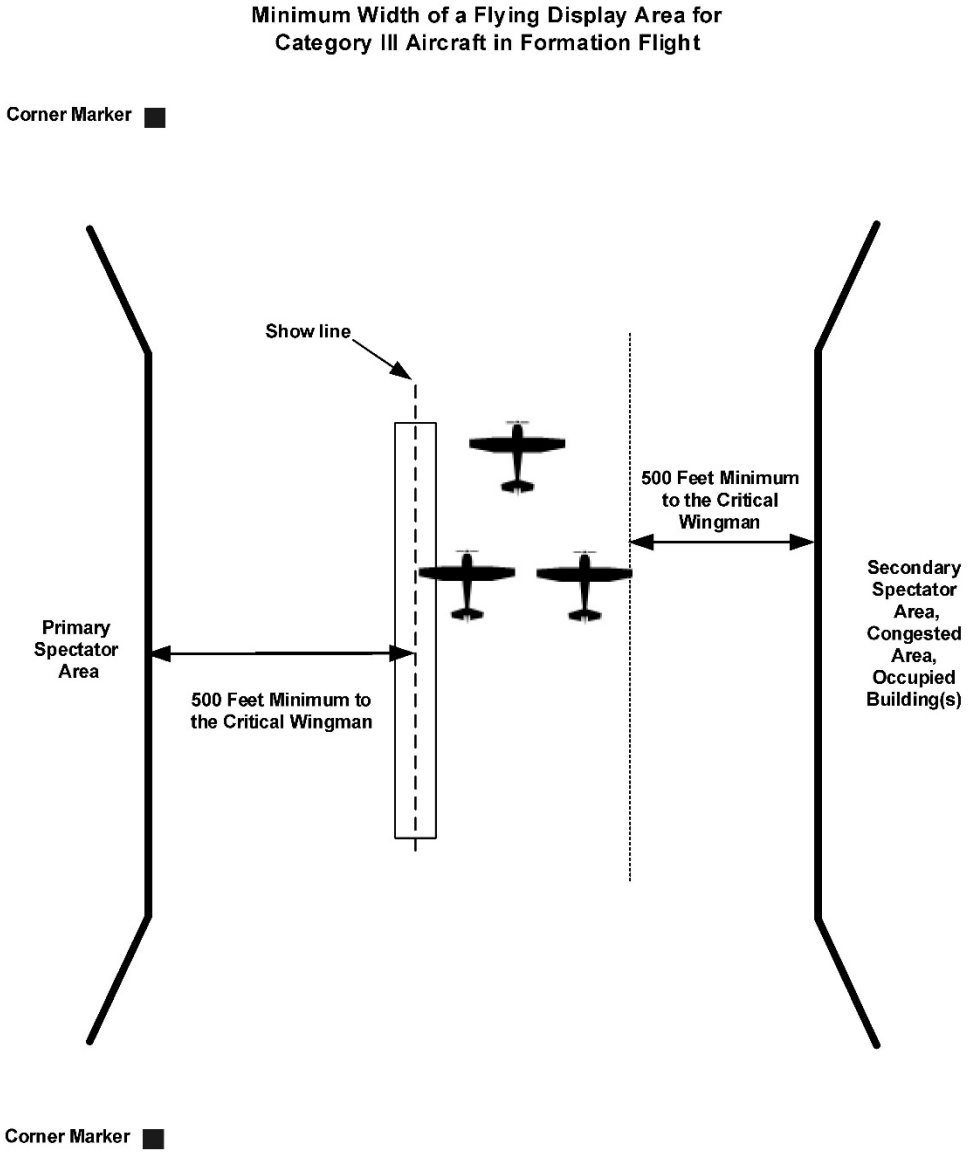


Figure 3-40. Minimum Width of a Flying Display Area for Category III Aircraft in Formation Flight



Note: The diagram above depicts a situation where minimal distance between the Primary Spectator Area and Secondary Spectator Area is available. In this situation, the formation lead must adjust his/her track to ensure that the wingtip of the critical aircraft closest to the primary spectator is no closer than the 500 foot show line. In this situation, minimum distance required between the primary spectator area and the secondary spectator is greater than 1000 feet to ensure the wingtip of the critical aircraft closest to the secondary spectator area is no closer than 500 feet to the secondary spectator area. At air show sites that have Cat II and I aircraft performing aerobatic maneuvers, there is normally ample space available.

Figure 3-41. Example of the Minimum Width of a Flying Display Area for Multiple Category III Aircraft Performing Lateral and/or Turning Maneuvers

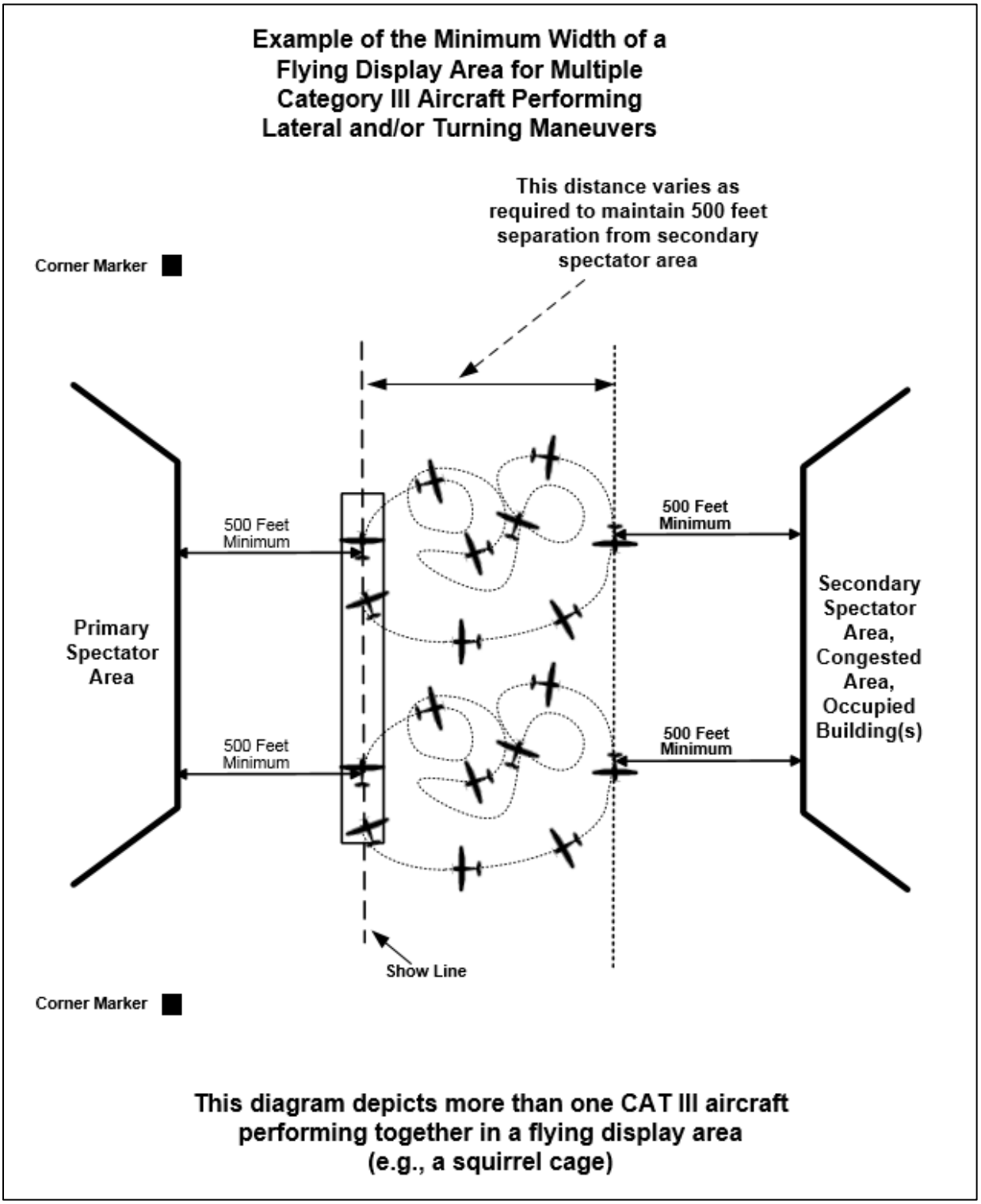
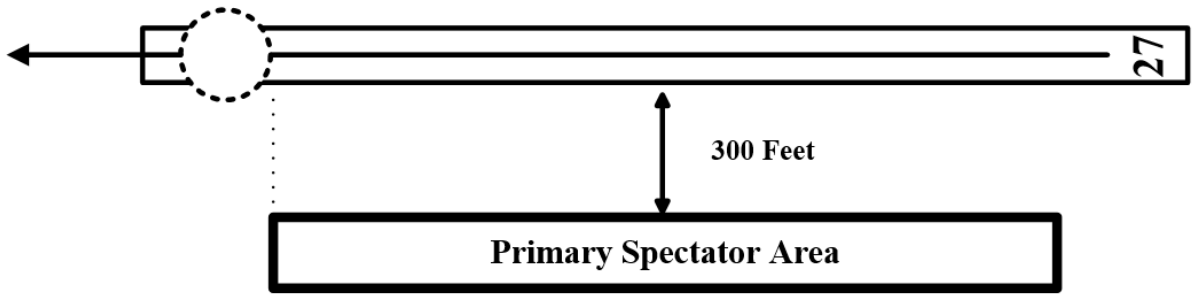
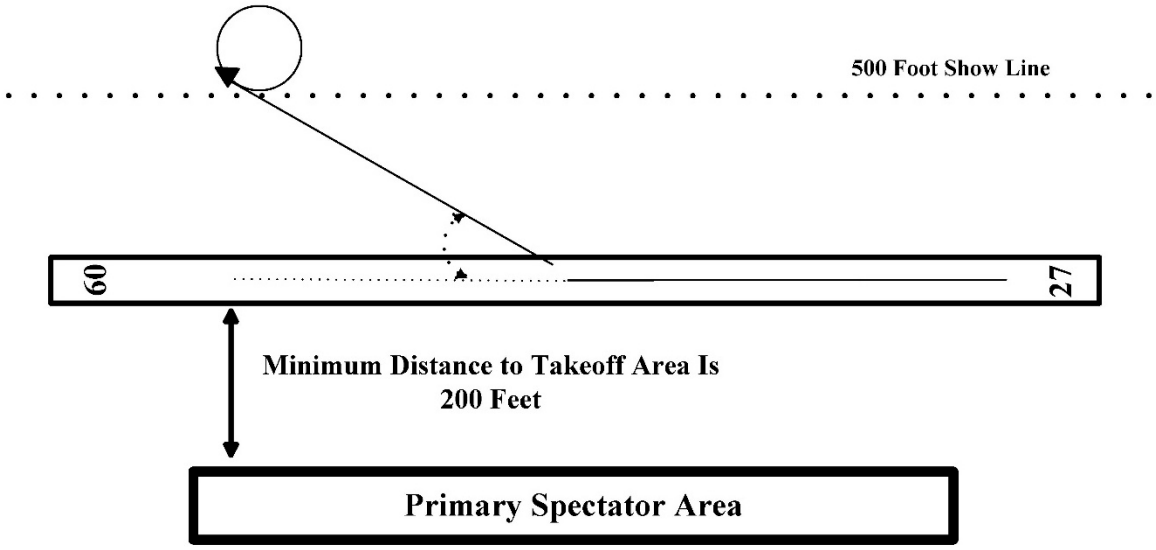


Figure 3-42. Aerobatic Maneuvers Performed after Aircraft Beyond Spectator Area



In the example depicted in the above diagram, the runway or takeoff area for the CAT III aircraft is less than 500 feet from the primary spectator area, thus aerobatic maneuvers may not be performed after takeoff until the aircraft is beyond the end of the spectator area.

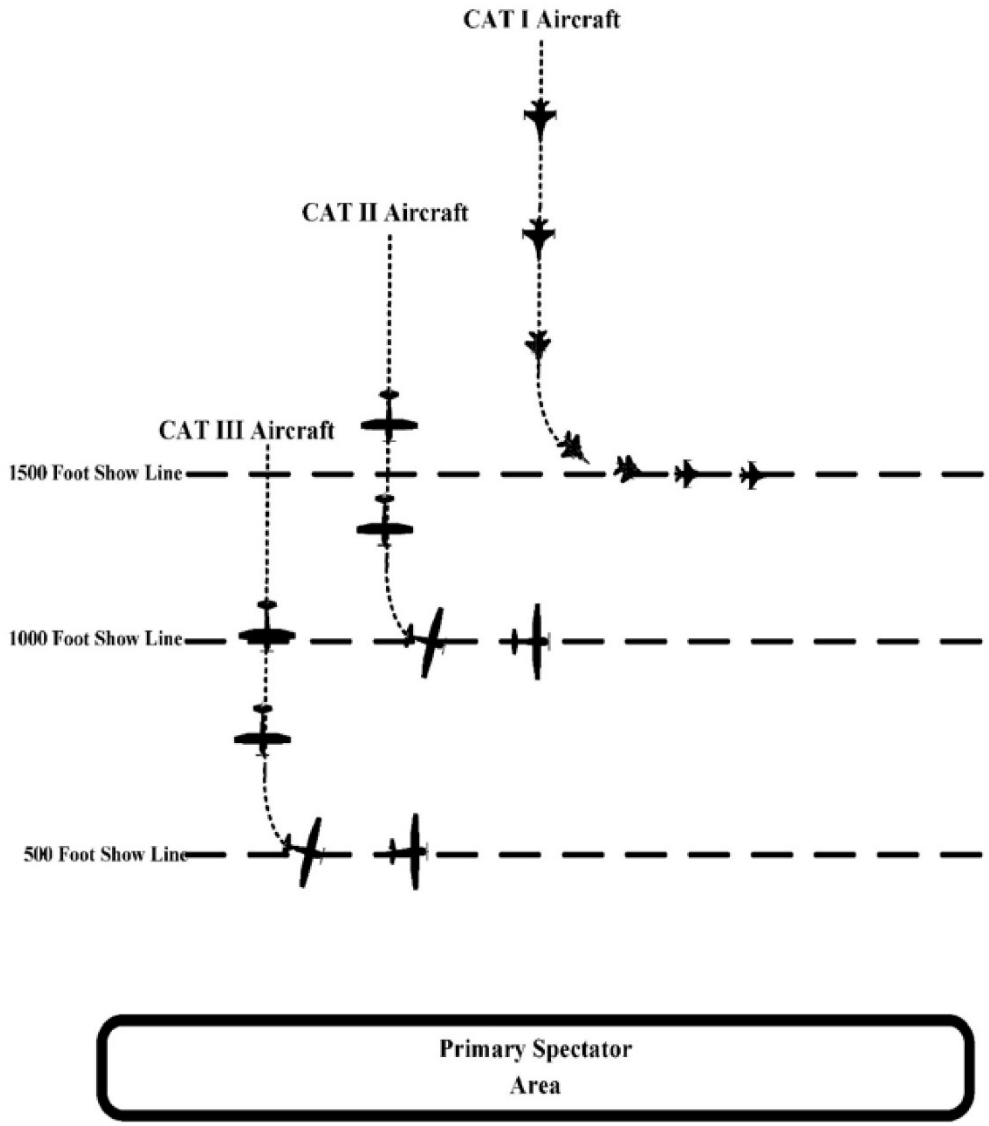
Figure 3-43. Aerobatic Maneuvers Performed after Turn Away Performed



In the example depicted in the above diagram, the runway/takeoff area for the CAT III aircraft is less than 500 feet from the primary spectator area; thus, aerobatic maneuvers may be performed after takeoff when a "turn away" is carried out as shown above and once the aircraft has reached the 500-foot show line.

Figure 3-44. Nonaerobatic Maneuvers by a Single Aircraft with an Energy Vector Directed Toward the Primary Spectator Area

Nonaerobatic maneuvers by a single aircraft with an energy vector directed towards the primary spectator area



In the above diagram, as an example, in order to have all energy directed away from the primary spectator area, a CAT I aircraft flying at 350 kts. and using a 75 degree bank would have to initiate the turn a minimum of 2915 feet prior to the 1500 foot show line.

Figure 3-45. Typical Arc-In Review or Banana Pass

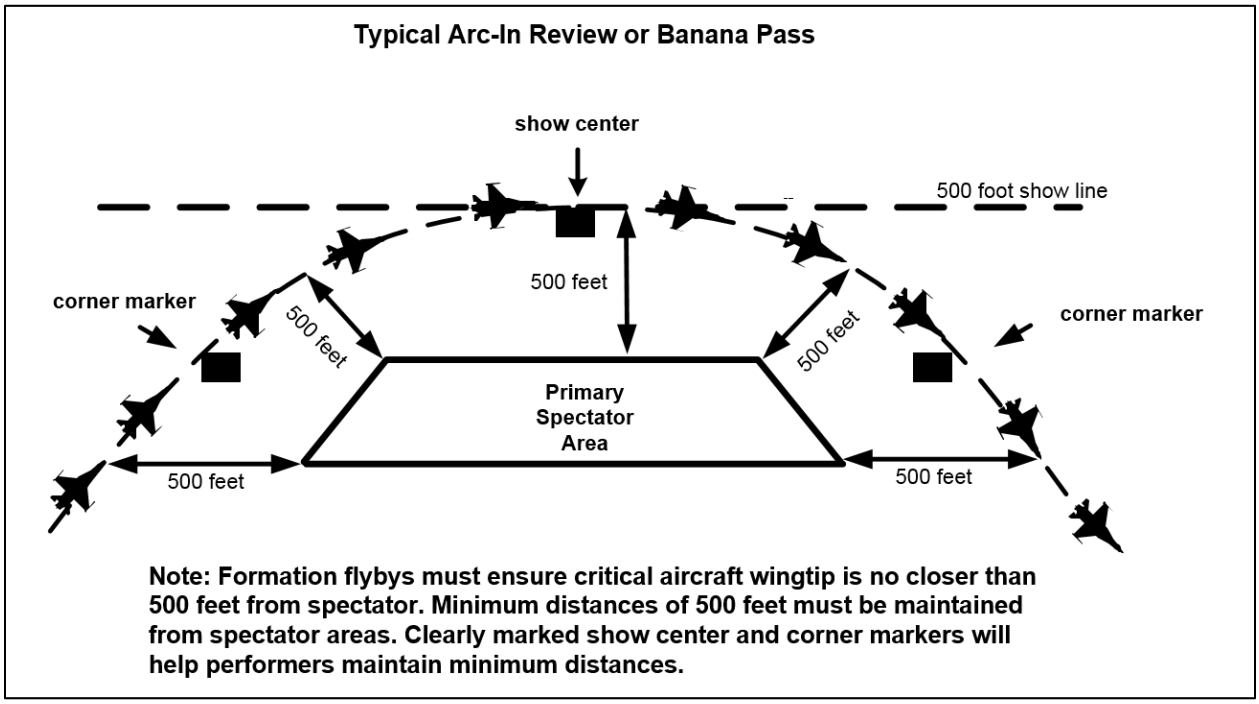
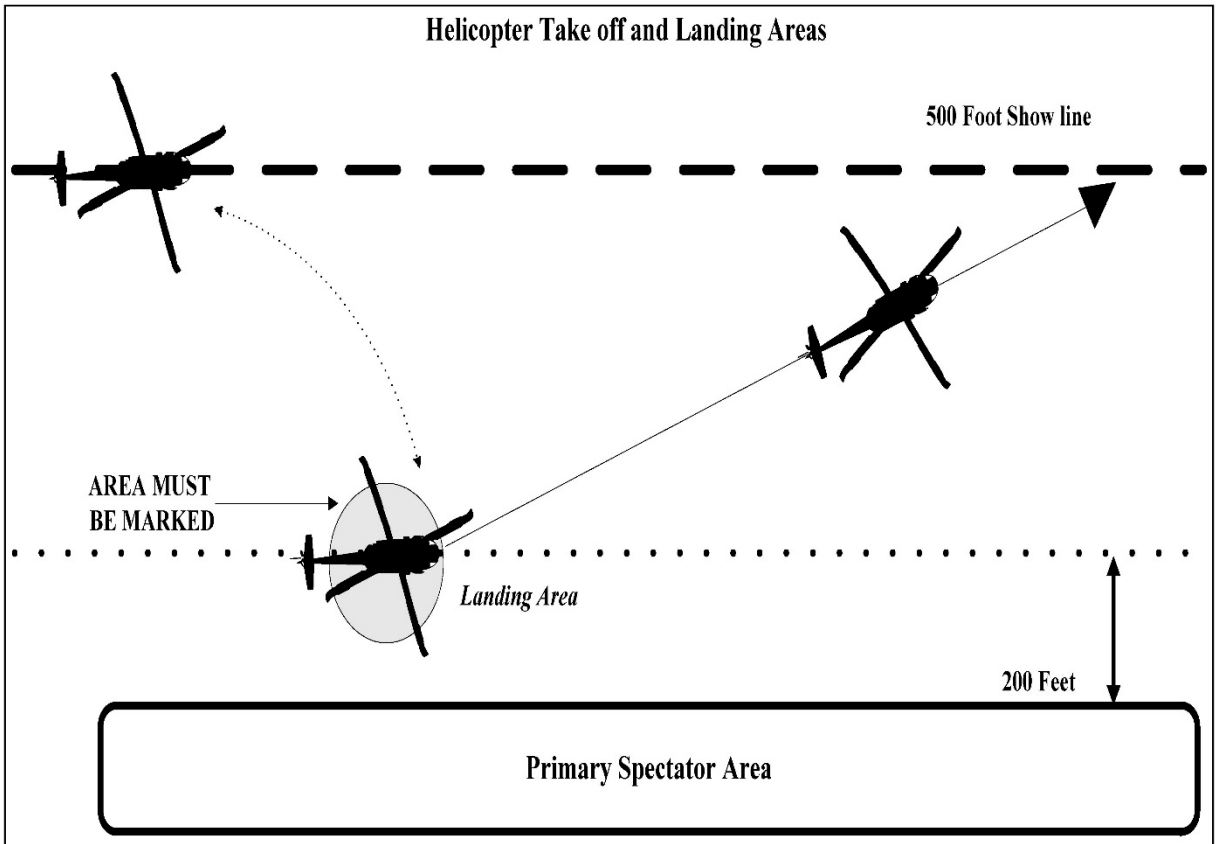


Figure 3-46. Helicopter Takeoff and Landing Areas



(a) Helicopters may, following the completion of a landing or coming to a stable hover, no closer than 500 feet from spectators, hover taxi to a clearly marked landing area, no closer than 200 feet from a spectator enclosure.

(b) Hover Taxi means helicopter movement conducted above the surface and in ground effect at airspeeds less than 20 knots.

Figure 3-47. Maneuvers Toward the Primary Spectator Area – 360 Degree Turns Using Bank Angles of Less Than 90 Degrees

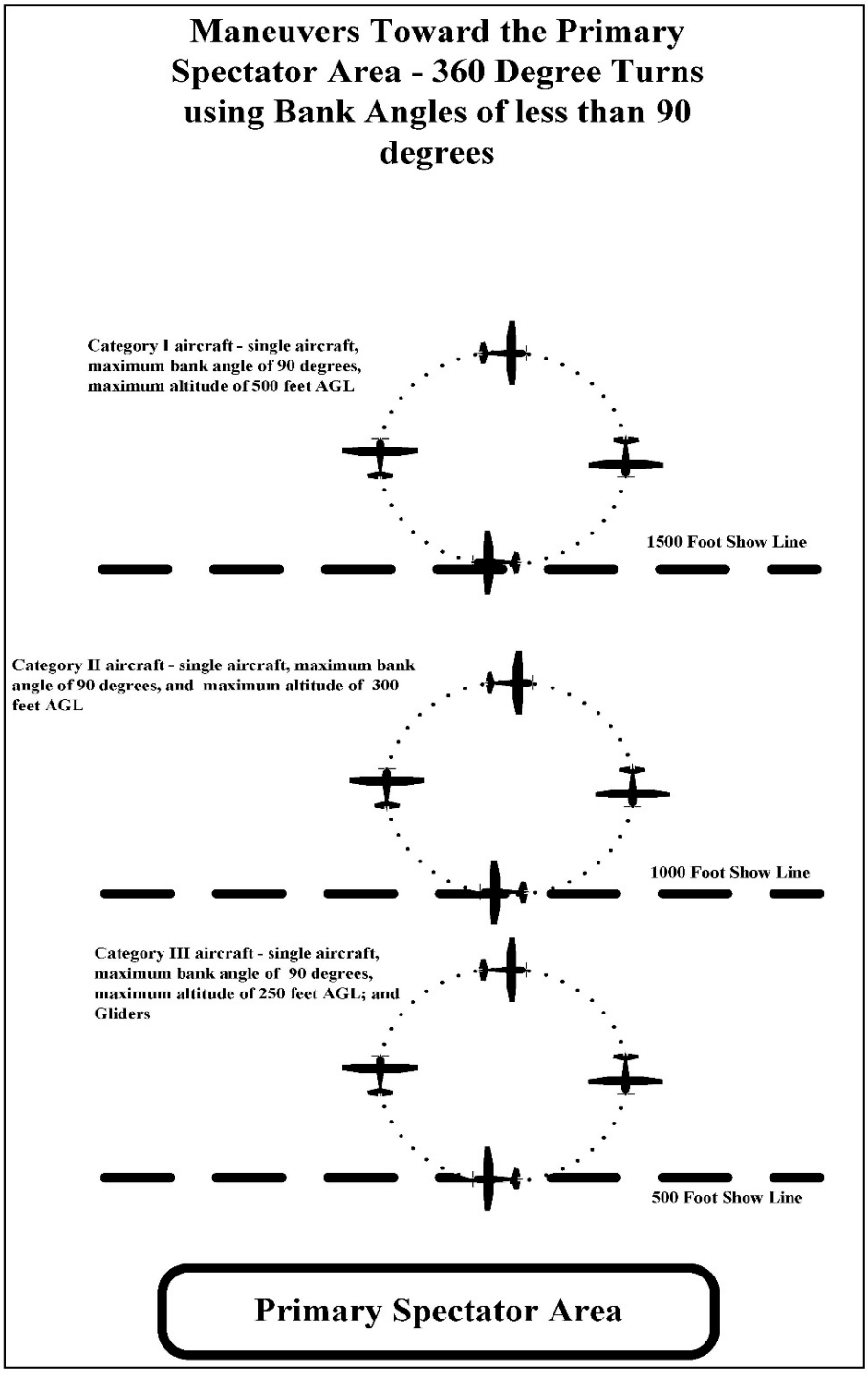


Figure 3-48. Aircraft Approach and Exit to and from a Flying Display Area Bordered by Congested Areas

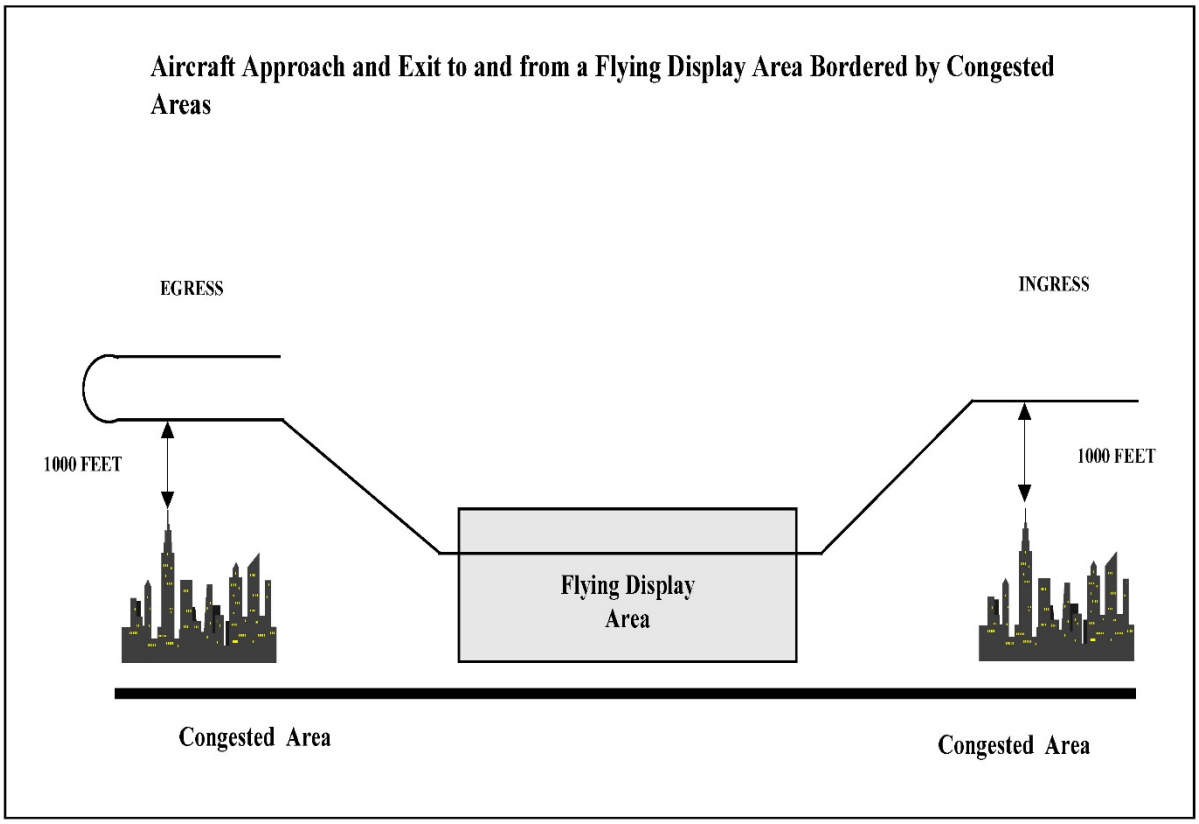


Figure 3-49. Sample FAA Form 7711-2, Certificate of Waiver Application

No certificate may be issued unless a completed application form has been received (14 C.F.R. 91. 101. and 105).

US Department of Transportation
Federal Aviation Administration

APPLICATION FOR CERTIFICATE OF WAIVER OR AUTHORIZATION

From Approved: O.M.B. No.2120-0027 08/31/2019

APPLICANTS - DO NOT USE THESE SPACES

Region	Date
GL03	08/01/20xx

Action
☒ Approved ☐ Disapproved – *"Explain under "Remarks"*

Signature of authorized FAA representative
Chris T Eagle

INSTRUCTIONS

Submit this application in triplicate (3) to any FAA Flight Standards district office.

Applicants requesting a Certificate of Waiver or Authorization for an aviation event must complete all the applicable items on this form and attach a properly marked 7.5 series Topographic Quadrangle Map(s), published by the U.S. Geological Survey (scale 1:24,000), of the proposed operating area. The map(s) must include scale depictions of the flightlines, showlines, race courses, and the location of the air event control point, Police dispatch, ambulance, and fire fighting equipment. The applicant may also wish to submit photographs and scale diagrams as supplemental material to assist in the FAA's evaluation of a particular site. Application for a Certificate of Waiver or Authorization must be submitted 45 days prior to the requested date of the event.

Applicants requesting a Certificate of Waiver or Authorization for activities other than an aviation event will complete items 1 through 10 only and the certification, item 17, on the reverse.

1. Name of organization	2. Name of responsible person
City of Chicago - Mayor's Office of Special Events	RMaxwell-Midwestern Airshow Inc./Air Boss MHoudini

3. Permanent mailing address	House number and street or route number	City	State and ZIP code	Telephone No.
	1 East Maxwell Street, Suite 123	Chicago	IL 60603	312-222-3333

4. State whether the applicant or any of its principal officers/owners has an application for waiver pending at any other office of the FAA.
N/A

5. State whether the applicant or any of its principal officers owners has ever had its application for waiver denied, or whether the FAA has ever withdrawn a waiver from the applicant or any of its principal officers/owners.
N/A

6. FAR section and number to be waived
See Attachment A

7. Detailed description of proposed operation *(Attach supplement if needed)*
Air Show - Civil and military aerobatic and parachute demonstrations (See attached FAA Form 7711-2 CoA)

8. Area of operation *(Location, altitudes, etc.)*
Air show with civilian aerobatic demonstrations within a five (5) NM radius of North Avenue Beach, Chicago, Illinois (N41°54'56"/W087°37'01") from the surface up to and including 16,000 feet MSL. Show center - North Avenue Beach show center is located on the ORD 106 degree radial, 13.6 NM fix. See Attachment B.

9a. Beginning *(Date and hour)*		b. Ending *(Date and hour)*	
08/17/20xx	0900 CDT UTC-6	08/20/20xx	1600 CDT UTC-6

10. Aircraft make and model (a)	Pilot's Name (b)	Certificate number and rating (c)	Home address (Street, City, State) (d)
See Attachment C			

FAA Form 7711 -2 (8/08) Supersedes Previous Edition Page 1

Figure 3-49. Sample FAA Form 7711-2, Certificate of Waiver Application (Continued)

▶ ***ITEMS 11 THROUGH 16 TO BE FILLED OUT FOR AIR SHOW/AIR RACE WAIVER REQUESTS ONLY.***

11. The air event will be sponsored by:

The City of Chicago - Mayor's Office of Special Events - Mr. Rudy Maxwell

12. Permanent mailing address	House number and street or route number	City	State and ZIP code	Telephone No.
	1 East Maxwell Street, Suite 123	Chicago	IL 60603	312-222-3333

13. Policing *(Describe provisions to be made for policing the event.)*

See Attachment D for security plan

14. Emergency facilities *(Mark all that will be available at time and place of air event.)*

☐ Physician ☐ Fire truck ☒ Other - Specify See Attachment E for Emergency Response Plan

☐ Ambulance ☐ Crash wagon

15. Air Traffic control *(Describe method of controlling traffic, including provision for arrival and departure of scheduled aircraft.)*

See Attachment F for ATC LOAs, TFR, and frequency application. TFR and frequencies will be requested by 06-01-20xx by Wyatt Earp.

16. Schedule of Events *(include arrival and departure of scheduled aircraft and other periods the airport maybe open.)*

Hour (a)	Date (b)	Event (c)
0900-1600	08/17/20xx	USN Blue Angels circle and arrival maneuvers
0900-1600	08/18/20xx	Rehearsal - USN Blue Angels; high performance aerobatic civilian and military demonstrations
		Parachute demos by US Army Golden Knights and USN Leap Frogs (see attached COA)
0900-1600	08/19/20xx & 08/20/20xx	Air show - USN Blue Angels; high performance aerobatic civilian and military demonstrations
		Parachute demos by US Army Golden Knights and USN Leap Frogs (see attached COA)
		Detailed SOE will be provided by 07/17/20xx

If sufficient space is not available, the entire schedule of events may be submitted on separate sheets, in the order and manner indicated above.

Please Read > The undersigned applicant accepts full responsibility for the strict observance of the terms of the Certificate of Waiver or Authorization, and understands that the authorization contained in such certificate will be strictly limited to the above described operation.

17. Certification - I CERTIFY that the foregoing statements are true.

Date	Signature of Applicant
7/01/20xx	Rudy Maxwell

Remarks

DD Form 2535 is attached.

FAA Form 7711-2 (8/08) Supersedes Previous Edition

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Figure 3-50. Sample FAA Form 7711-2, Application for Parachuting Authorization

No certificate may be issued unless a completed application form has been received (14 C.F.R. 91. 101. and 105).

US Department of Transportation
Federal Aviation Administration

APPLICATION FOR CERTIFICATE OF WAIVER OR AUTHORIZATION

From Approved: O.M.B. No.2120-0027 08/31/2019

APPLICANTS - DO NOT USE THESE SPACES

Region	Date
GL00	05/01/20xx

Action
☒ Approved ☐ Disapproved – *"Explain under "Remarks"*

Signature of authorized FAA representative
Charles Lindbergh

INSTRUCTIONS

Submit this application in triplicate (3) to any FAA Flight Standards district office.

Applicants requesting a Certificate of Waiver or Authorization for an aviation event must complete all the applicable items on this form and attach a properly marked 7.5 series Topographic Quadrangle Map(s), published by the U.S. Geological Survey (scale 1:24,000), of the proposed operating area. The map(s) must include scale depictions of the flightlines, showlines, race courses, and the location of the air event control point, Police dispatch, ambulance, and fire fighting equipment. The applicant may also wish to submit photographs and scale diagrams as supplemental material to assist in the FAA's evaluation of a particular site. Application for a Certificate of Waiver or Authorization must be submitted 45 days prior to the requested date of the event.

Applicants requesting a Certificate of Waiver or Authorization for activities other than an aviation event will complete items 1 through 10 only and the certification, item 17, on the reverse.

1. Name of organization	2. Name of responsible person
Painted Skies Skydiving	Tom Sawyer

3. Permanent mailing address	House number and street or route number	City	State and ZIP code	Telephone No.
	1234 Otter Lane	Lebanon	OH 45036	513-305-3456

4. State whether the applicant or any of its principal officers/owners has an application for waiver pending at any other office of the FAA.
N/A

5. State whether the applicant or any of its principal officers owners has ever had its application for waiver denied, or whether the FAA has ever withdrawn a waiver from the applicant or any of its principal officers/owners.
N/A

6. FAR section and number to be waived
Parachute demonstrations are authorized in accordance with section 105.21.

7. Detailed description of proposed operation *(Attach supplement if needed)*
Demonstration jump at the Great American Ball Park, 100 Joe Nuxhall Way, Cincinnati, OH 45202

3 jumpers, 1 pass, at 6500 feet MSL.

8. Area of operation *(Location, altitudes, etc.)*
066 Radial 10.4 nautical miles from Cincinnati (CVG) VOR. One (1) nautical mile radius. 6500 feet MSL. See Attachment A.

9a. Beginning *(Date and hour)*		b. Ending *(Date and hour)*	
05/25/20xx	18:30 CDT UTC-4	05/25/20xx	20:00 CDT UTC-4

10. Aircraft make and model (a)	Pilot's Name (b)	Certificate number and rating (c)	Home address (Street, City, State) (d)
DHC-6 (N12345)	John Raven	3072839 / Commercial	458 Country Road, Lebanon, OH 45036
Tom Tucker	USPA D5698 PRO		
Levi Staton	USPA D21678 PRO		
Nancy Jones	USPA D2748 PRO	(Dressed as Rosie Red)	

FAA Form 7711 -2 (8/08) Supersedes Previous Edition Page 1

Figure 3-50. Sample FAA Form 7711-2, Application for Parachuting Authorization (Continued)

▶ ***ITEMS 11 THROUGH 16 TO BE FILLED OUT FOR AIR SHOW/AIR RACE WAIVER REQUESTS ONLY.***

11. The air event will be sponsored by:

12. Permanent mailing address	House number and street or route number	City	State and ZIP code	Telephone No.

13. Policing *(Describe provisions to be made for policing the event.)*

14. Emergency facilities *(Mark all that will be available at time and place of air event.)*

☐ Physician ☐ Fire truck ☐ Other - Specify _____

☐ Ambulance ☐ Crash wagon _____

15. Air Traffic control *(Describe method of controlling traffic, including provision for arrival and departure of scheduled aircraft.)*

16. Schedule of Events *(include arrival and departure of scheduled aircraft and other periods the airport maybe open.)*

Hour (a)	Date (b)	Event (c)

If sufficient space is not available, the entire schedule of events may be submitted on separate sheets, in the order and manner indicated above.

Please Read > The undersigned applicant accepts full responsibility for the strict observance of the terms of the Certificate of Waiver or Authorization, and understands that the authorization contained in such certificate will be strictly limited to the above described operation.

17. Certification - I CERTIFY that the foregoing statements are true.

Date	Signature of Applicant
04/29/20xx	Tom Sawyer

Remarks

See Attachment B for aerial photo of the parachute landing area.
See Attachment C for sporting event TFR waiver.
See Attachment D for information regarding security, ERP, SOE, and ATO coordination.
See Attachment E for the Parachute Demonstration 7711-2 Attachment Form.
See Attachment F for the letter of permission form the property owner.

FAA Form 7711-2 (8/08) Supersedes Previous Edition

Page 2

Figure 3-51. Sample FAA Form 7711-1, Certificate of Waiver or Authorization

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

CERTIFICATE OF WAIVER OR AUTHORIZATION

ISSUED TO
THE CITY OF CHICAGO-MAYOR'S OFFICE OF SPECIAL EVENTS
Rudy Maxwell

ADDRESS
1 East Maxwell Street, Suite 123
Chicago, Illinois 60603

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED
Air show with civilian aerobatic demonstrations within a five (5) NM radius of North Avenue Beach, Chicago, Illinois (N41°54'56"/W087°37'01") from the surface up to and including 16,000 feet MSL excluding airspace above spectators and congested areas as depicted on Attachment B.

Show center - North Avenue Beach show center is located on the ORD 106 degree radial, 13.6 NM fix. A TFR has been requested during the times the performances are in effect.

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE
See Attachment A

STANDARD PROVISIONS

1. A copy of the application made for this certificate shall be attached to and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any authorized representative of the Administrator of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.
4. This certificate is nontransferable.

NOTE.---This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.

SPECIAL PROVISIONS

Special Provisions Nos. 1 to 42 inclusive, are set forth on the reverse side hereof. "See Attached" ☒

This certificate is effective from 08/17/20xx 1400 - 2000 UTC to 08/20/20xx 1400 - 2000 UTC, inclusive, and is subject to cancellation at any time upon notice by the Administrator or his authorized representative.

BY DIRECTION OF THE ADMINISTRATOR

GL03	Luanne Merris
(Region)	(Signature)
08/01/20xx	Manager Dupage FSDO
(Date)	(Title)

FAA Form 7711-1 (7-74) Electronic Forms (PDF)

Figure 3-52. Sample FAA Form 8710-7, Statement of Aerobatic Competency (SAC)

STATEMENT OF AEROBATIC COMPETENCY (SAC)
FAA FORM 8710-7

Date: 02/24/2016

US Department of Transportation

Federal Aviation Administration

Pilot:	Dan Pilot	FAA ASI: Inspector Gardner	ICAS Recommendation
Certificate Type/No:	ATP 321654978	FSDO: DuPage	Waiver ID 654789
Phone:	317-555-0668	Signature:	
Email:	dan@pilot.com		
SAC Issuance:	02/24/2016	Phone: 812-555-1234	
SAC Proficiency Expiration:	12/31/2017	Email: inspector@faa.gov	

AUTHORIZED AIRCRAFT	AUTHORIZED AIRCRAFT CATEGORY	ALTITUDE LEVEL	SH OW LINE CATEGORY	ENDORSEMENTS: ALL AIRCRAFT CATEGORIES	EXPIRATION DATE- AIRCRAFT CATEGORY/LEVEL/ENDORSEMENT
North American P-51 Mustang	Category C: Piston Warbird Aerobatics	Level 1: Unrestricted	CAT II	☐ Rolls Only ☑ Aerobatics: ☑ Solo ☑ Formation	01/31/2015
Aero Vodochody L-39 Albatros	Category B: Jet Warbird Aerobatics	Level 1: Unrestricted	CAT I	☐ Dynamic Maneuvering: ☐ Solo ☐ Formation	02/28/2019
				☐ Night Shows ☐ Pyro ☐ Wing Walking ☐ Inverted Ribbon Cut ☐ Dog Fight ☐ Comedy ☐ Car-to-Plane Transfer ☐ Aerial Transfer ☐ Car-Top Landing ☑ Circle the Jumpers ☐ Other:	

I understand that this statement of competency does not authorize deviation from 14 CFR Part 91 except as defined in a waiver and the terms of a Special Provision contained in a Certificate of Waiver (FAA Form 7711-1) for an Airshow.

PILOT SIGNATURE

DATE

SAMPLE

Figure 3-53. Sample Transport Canada Form 26-0307, Statement of Aerobatic Competency (SAC)

RDIMS/SGDDI #********

Statement of Aerobatic Competency (SAC) / Attestation de Compétence en Voltige Aérienne (ACA)

Pilot/Pilote :
Licence Number/Numéro de licence :
Issue Date/Date de délivrance :
Proficiency Expiration/ Date d'expiration :

Authorized Aircraft/Aéronefs autorisés	Aircraft Category/Catégories d'aéronefs	Minimum Altitude/ Altitude minimum	Min. Lateral Distance/ Distance latérale min.	Activity/ Activités autorisés (limite des manoeuvres)	Category Expiration/ Expiration de catégorie
Boeing Stearman - All variants	Sport Aerobatic/ Acrobaties sportives	Level 4	Category 3	· Rolls/Tonneaux · Aerobatics/Acrobaties - Solo - Formation · Night/Nuit · Pyro · Wing Walking · Inverted Ribbon Cut/ Coupure de ruban inversé · Dog fight/Combat aérien · Comedy/Comédie · Circle the jumpers/ Spirale autour des parachutistes · Car to Plane Transfer/ Transfert auto-avion/ Aerial Transfer/Transfert avion-avion · Car-top Landing/ Atterrissage sur véhicule · Other/Autres	2020-12-31
	Jet Warbird Aerobatic/ Acrobaties – Warbird à réaction				
	Piston Warbird Aerobatic/ Acrobaties – Warbird à hélice				

SAMPLE

Note: This document provides no privileges and is meant for information purposes. The holder is only authorized to perform if specifically identified on a Special Flight Operations Certificate (SFOC) or a Certificate of Waiver, FAA Form 7711-1 (CoW) for an Air show for an event and to the altitude and manoeuvers specified in that SFOC or CoW.

Note: Ce document ne procure aucuns privilèges et n'est valable que pour fins d'informations. Le détenteur n'est autorisé à participer à des démonstrations que s'il est spécifiquement nommé sur un (COAS) ou un Certificat de renonciation de la FAA (Certificate of Waiver, FAA Form 7711-1 (CoW)) et ce,pour un spectacle ou un évènement aérien spécialisé qu'à l'altitude minimum et pour les manœuvres spécifiées dans le COAS ou le CoW.

Issuing inspector's name and signature/Nom et signature de l'inspecteur de la délivrance de l'attestation :	Pilot's signature/Signature du pilote :
PIERRE RUEL Chief, Flight Standards / Chef, Normes de vol Transport Canada / Transports Canada	

Form 26-0307(2018)
ATS

Figure 3-54. Sample Aircraft Status and Inspection Form

Aircraft Status and Inspection Form (ver 02-2020)

N-_____ S/N: _____ Make: _____ Model: _____

Inspection (Check the Inspection that Applies)	**Compliance Date & Hours**	**Next Due**
☐ Annual		
☐ Condition		
☐ 100 Hour (If Required)		
☐ Progressive		
☐ 91.411 (Altimeter/Static)		
☐ 91.413 (Transponder)		
☐ 91.207 (ELT Inspection)		

Recurring ADs	**Description**	**Compliance Date & Hours**	**Next Due**

Note: Foreign Aircraft - Provide in accordance with SFA and CAA requirements.

I certify this information accurately represents the applicable information documented in the aircraft maintenance records and the records were reviewed on this day to verify the inspection and airworthiness directive status of this aircraft. This form is valid until the next inspection or airworthiness directive is due.

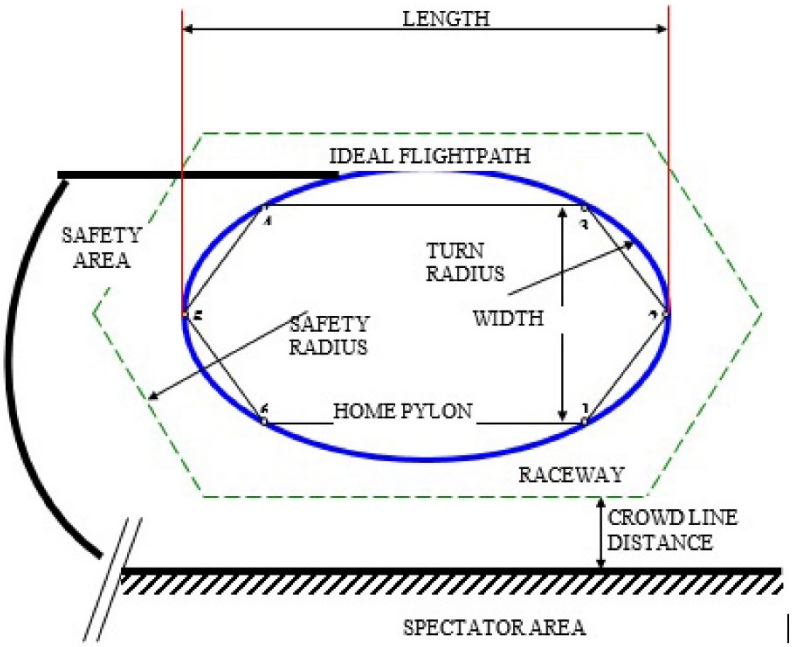
Owner/Operator (Print Name): _____

Signature: _____

Date: _____

Reference Information:
FAA Order 8900.1 Volume 3, Chapter 6, Section 1.
FAA Order 8900.1 Volume 6, Chapter 11, Section 10.
14 CFR part 91, § 91.715; and FAA Order 8130.2, Chapter 22.

Figure 3-55. Typical Air Race Site



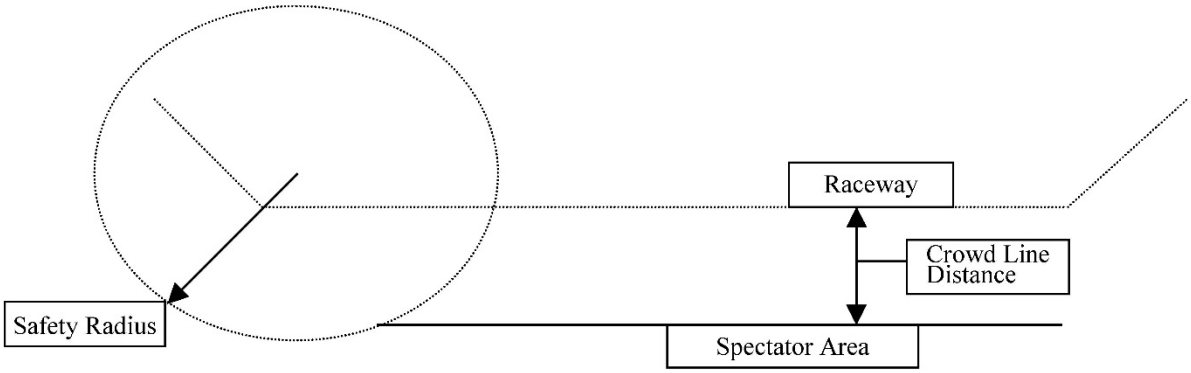


Figure 3-56. Typical Racecourse Site

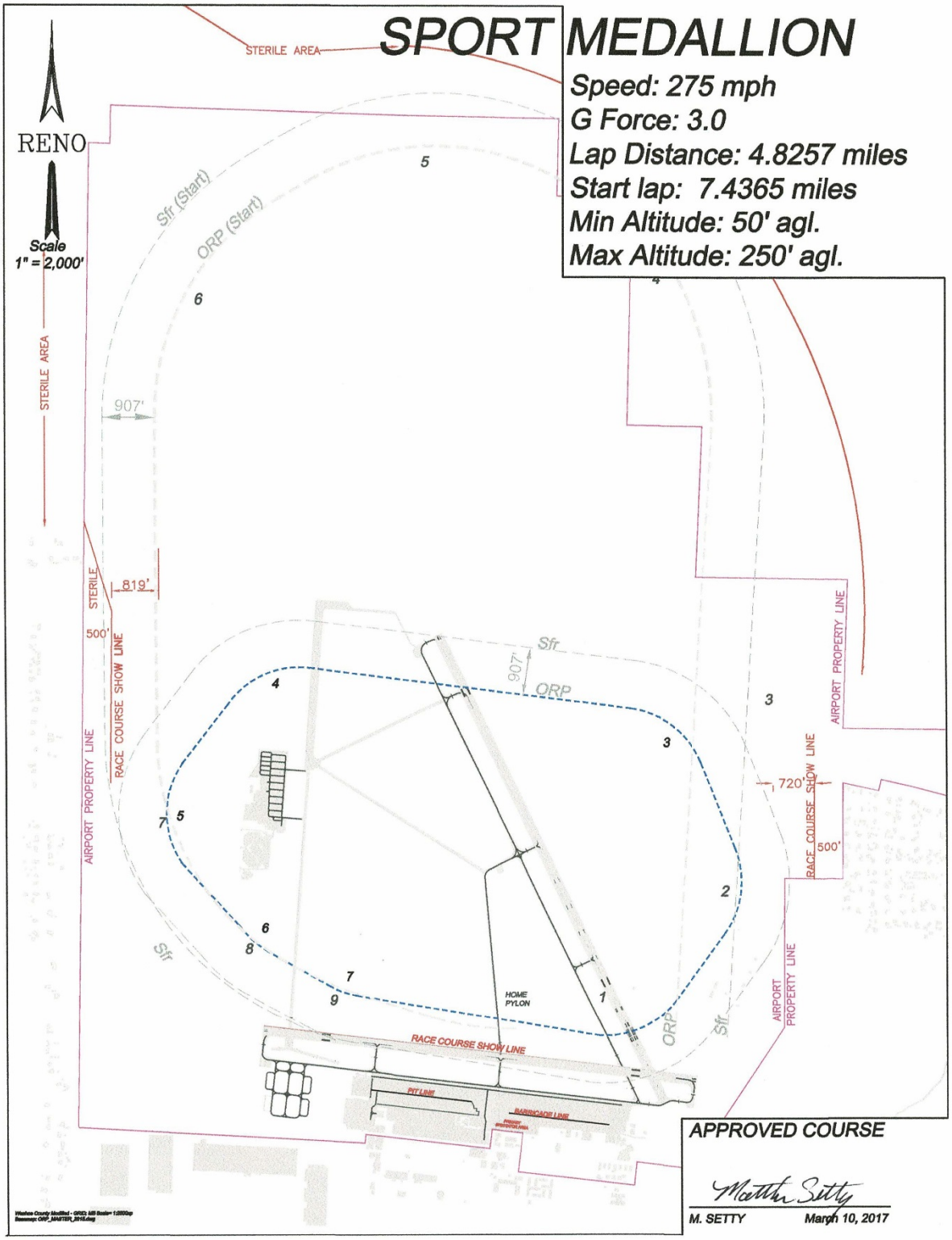


Figure 3-57. Sample Aviation Event Participant Briefing Guide

AVIATION EVENT PARTICIPANT BRIEFING GUIDE

VER 10042018

WHO SHOULD ATTEND:

ALL PERFORMERS (Listed on 7711-2)

- Civilian/Military Pilot(s)
  - Demo/Flyby/Flyover
  - Remotely Deployed Pilot(s) (via telcon)
  - At least one (1) pilot rep for each military/civilian team
- Tow/Jump Aircraft Pilots
- Parachutist and Team leader
- Balloonist(s)
- Air & Ground Pyrotechnic Technician(s)
- Jet Vehicle Driver
- Narrator(s)/Announcer(s)
- Rocket/UAS operator
- AMA Contest Director
- Other performer(s)

KEY SUPPORT PERSONNEL

- Air Boss and Assistant(s)
- Public Safety / Emergency Response
  - Incident Commander and Operations Staff
- Security/Crowd Management POC
- Pilot(s) - Passenger Rides
- Pilot(s) - EMS
- Smoke Oil / Refueling POC
- Aircraft Marshaller POC
- Maintenance Chief
- Air & Ground Pyrotechnic Technicians
  - Pyro/Shooter-In-Charge
- Pole Holders
- Other Essential Personnel Rep(s)

EVENT ORGANIZER

- Responsible Person named on CoW/A
  - Responsible to ensure safety of the aviation event

FAA

- IIC/FAA Team member(s)
- Air Traffic Control Rep(s)
- Airports Rep(s)

WHO SHOULD NOT ATTEND:

- Pets
- Individual Sponsors
- Media Representatives
- Spouses / Children
- Relatives / Friends
- Anyone not directly associated with the aviation event

BRIEFING:

ROLL CALL/SIGN-IN SHEET

- Daily/Remote/Specialty Briefings (e.g. Flybys/Flyover/Pyro/etc.)
  - Time/Location
  - Who is required to attend
- Sign-In Sheet
- Roll Call
- Those not attending the required briefing(s) MAY NOT participate in the aviation event
- Introduce Key Officials

TIME HACK

CURRENT WEATHER AND FORECAST

- Weather Minimums – Day/Night
  - Visibility/Ceiling Minimums
  - Low Show - Civilian/Military
    - (IIC approval)
  - 14 CFR 91.155 – Waived
- Density Altitude/Temperature/Alt Setting
- Last Day - Include regional and national weather by quadrants for departing aircraft

NOTAM(S) - TFR(S) or CLASS D

- Display Published NOTAM(S)
- Review

COW/A AND SPECIAL PROVISIONS

- Review
- Mandatory Compliance/Safety Impact

AIRPORT STATUS

- Airspace
- Traffic Patterns
- Runways in Use
- Facilities
- Arresting Cables
- Transient Traffic – Airlines/Flight Schools/Military Ops/etc.

REVIEW AREA MAP

- Hold Points / Turn Directions Altitudes
- Passenger Rides – Ingress / Egress Routes
- Noise Abatement Procedures
- Sensitive Areas
- Special Use Airspace
- Remote Recovery Airports
- Controlled/emergency bail out/ditching procedures
- Safety Areas
- Hazards – Water/Obstructions/Terrain

Figure 3-57. Sample Aviation Event Participant Briefing Guide (Continued)

AIR SHOW LAYOUT

- Show Line(s)/Corner Markers
- Spectator Areas/Crowd Line(s)
  - Primary/Secondary
- Sterile Areas/Road Closures
- Ground-Based Pyro/Fireworks
- UAS/Rocket/Parachute
- Hazards – Water/Obstructions
- Taxi Routes/Aircraft Parking
  - Performer/Transient/Static Display
- Static Display
  - Safety, Security, and Communications
  - Adequate personnel assigned to aircraft accessible to spectators
- Unique Local Items and Conditions

SPECIALTY BRIEFINGS

- Emergency Response
  - Performer Extraction
- Flybys/Flyovers/In-Trail
  - Civilian Formation (FAST/FFI)
  - Military Formation
  - Standard Maneuvering
- Pyro (Ground / Airborne)
- Circle the Jumpers
- Race Aircraft / Surface Vehicle
- UAS / Rocket
- Narrator / Announcer(s)
- Fuel / Smoke Oil
- Marshallers
- Maintenance
- Pole Holders
- Media
- Other

EMERGENCY PROCEDURES

- Comm. Failure (Aircraft / Ground)
- Stuck Mike Procedures
- NORDO Procedures
- Ground / Inflight Emergencies
- CFR/AARF Equipment
  - Rapid Response (1 min)
  - Land/Water/Terrain
  - Ingress/Egress Routes/Mass Casualty/Mutual Aid
  - EMS Helicopter Routes
- Runway Closures
- Hold / Divert Locations
- Recall / Stop Show / Divert Procedures
- Aircraft in Pyro Area
- Deteriorating Weather Procedures

COMMUNICATIONS

- Primary / Backup / Discrete
- ATCT/CTO Air Boss/UNICOM
- Aircraft W/O Radios
- Procedures/LOAs
- Transponders/ADS-B
- Nonparticipating Aircraft/Static Display

PERFORMANCE SAFETY

- Stall Speeds vs. "G" Load vs. Density Altitude
- Personal Physical Condition
  - Rest, Mental State, Dehydration, etc.
  - G-LOC/G-Tolerance
  - Medication/Alcohol
- Minimum Altitude(s)
- Show Line - Do Not Cross
- Energy Toward the Crowd
- Essential Personnel
- Additional Crewmembers

LAST DAY

- Review Departure Procedures

DISTRIBUTE / REVIEW AVIATION EVENT SCHEDULE (7711-2)

- Act-by-Act

ADMINISTRATIVE NOTICES

QUESTIONS? - COMMENTS?

RESOLVE ALL CONFLICT

Figure 3-58. Sample Aviation Event Aircraft Inspection Job Aid

(ver 2-2020)

1) Date: _____
2) N-Number: _____
3) Make: _____
4) Model: _____
5) S/N: _____
6) Current Annual/Progressive/100 HR/Condition Inspection: Yes: ☐ No: ☐
7) Section 91.411 (Altimeter/Static): Yes: ☐ No: ☐ N/A: ☐
8) Section 91.413 (Transponder): Yes: ☐ No: ☐ N/A: ☐
9) Section 91.207 (ELT Inspection): Yes: ☐ No: ☐ N/A: ☐
10) Section 91.417 (Recurring Airworthiness Directive Status): Yes: ☐ No: ☐ N/A: ☐
11) General condition inspection of the aircraft: ☐
12) Airworthiness certificate: ☐
13) Registration (check expiration date): ☐
14) Operating limitations (review (pilot), verify signed, & date matches A/W Cert): Yes: ☐ No: ☐ N/A: ☐
15) Program letter (event listed): Yes: ☐ No: ☐ N/A: ☐
16) Special Flight Authorization for foreign-registered aircraft (performer authorized): Yes: ☐ No: ☐ N/A: ☐
17) Authority to carry passengers for hire: Exemption § 91.317/§ 91.319 or comply with § 91.146/§ 91.147: Yes: ☐ No: ☐ N/A: ☐
18) Maneuvers to be performed are documented in the logbook (per operating limitations for Special A/W Certificate aircraft): Yes: ☐ No: ☐ N/A: ☐
19) Parachutist aircraft modification paperwork (337s & W&B): Yes: ☐ No: ☐ N/A:☐
20) General inspection of parachutist aircraft modifications: Yes: ☐ No: ☐ N/A: ☐
21) Operating certificate or letter of deviation authority for large aircraft used in sport parachuting (part 125 aircraft): Yes: ☐ No: ☐ N/A: ☐
22) Air Racing Flight Demonstration form is signed and dated after any major modification: Yes: ☐ No: ☐ N/A: ☐
23) UAS Demo-UAS qualified IAW UAS special provisions: Yes: ☐ No: ☐ N/A: ☐ Part 101/Public/Civilian/Part 107_____
24) Ejection seat installed – training program: Yes: ☐ No: ☐ N/A: ☐

Figure 3-58. Sample Aviation Event Aircraft Inspection Job Aid (Continued)

Aircraft Inspection Requirements References

1–5: Self-explanatory.

6: Order 8900.1 Volume 3, Chapter 6, Section 1.
Order 8900.1 Volume 6, Chapter 11, Section 10.

7: 14 CFR part 91, § 91.411; and 8900.1 Volume 3, Chapter 6, Section 1.
Order 8900.1 Volume 6, Chapter 11, Section 10.

8: 14 CFR part 91, § 91.413; and 8900.1 Volume 3, Chapter 6, Section 1.
Order 8900.1 Volume 6, Chapter 11, Section 10.

9: 14 CFR part 91, § 91.207; and 8900.1 Volume 3, Chapter 6, Section 1.
Order 8900.1 Volume 6, Chapter 11, Section 10.

10: 14 CFR part 91, § 91.417(a)(2)(v).
Order 8900.1 Volume 3, Chapter 6, Section 1.
Order 8900.1 Volume 6, Chapter 11, Section 10.

11: Order 8900.1 Volume 3, Chapter 6, Section 1.
Order 8900.1 Volume 6, Chapter 11, Section 10.

12: 14 CFR part 91, § 91.203.

13: 14 CFR part 91, § 91.203.

14: Order 8130.2, Chapter 4 (Issuing Special Airworthiness Certificates).

15: Order 8130.2, Chapter 4 (Issuing Special Airworthiness Certificates), Chapter 12 (Experimental Purpose of Exhibition), and Chapter 13 (Experimental Purpose of Air Racing).

16: 14 CFR part 91, § 91.715; and Order 8130.2, Chapter 22 (Special Flight Authorizations for Foreign Civil Aircraft).

17: Reference Exemption Letter issued to the operator.

18: Order 8130.2, Chapter 4 (Issuing Special Airworthiness Certificates).

19: Order 8900.1 Volume 6, Chapter 11, Section 10.

20: Order 8900.1 Volume 6, Chapter 11, Section 10.

21: 14 CFR part 105, § 105.43; and Order 8900.1 Volume 6, Chapter 11, Section 10.

22: Order 8900.1 Volume 3, Chapter 6, Section 2.

23: Order 8900.1 Volume 3, Chapter 6, Section 1.

24: Order 8130.2, Chapter 4 (Issuing Special Airworthiness Certificates).

Figure 3-59. Sample Aviation Event Performer Inspection Job Aid

(ver 2-2020)

1) Pilot Name: _____
2) Certificate Number: _____
3) Medical Date: _____
4) Medical Class: _____
5) Government photo ID: Yes: ☐ No: ☐
6) LOA/Endorsement for pilots operating surplus military aircraft: Yes: ☐ No: ☐ N/A: ☐
7) Experimental authorization on pilot certificate for aircraft, if required by the aircraft operating limitations: Yes: ☐ No: ☐ N/A If Type Rated: ☐
8) Solo Aerobatics, performer requires a SAC card: Yes: ☐ No: ☐ N/A: ☐ Level: _____
9) Dynamic Maneuvering-Solo, performer requires a SAC card: Yes: ☐ No: ☐ N/A: ☐
10) Dynamic Maneuvering-Formation, performer requires a SAC card: Yes: ☐ No: ☐ N/A: ☐
11) Formation Aerobatics-Formation, performer requires a SAC card: Yes: ☐ No: ☐ N/A: ☐
12) Nonaerobatic (Standard) Formation, performer requires an industry formation card (e.g., FAST/FFI): Lead pilot: Yes: ☐ No: ☐ N/A: ☐ Mass: ☐ Wingman: Yes: ☐ No: ☐ N/A: ☐
13) Performer's emergency parachute inspection date within the previous 180 calendar-days **(see <u>Caution</u> on second page of this job aid)**: Yes: ☐ No: ☐ N/A: ☐
14) Performer's emergency parachute seal intact **(see <u>Caution</u> on second page of this job aid)**: Yes: ☐ No: ☐ N/A: ☐
15) Performer's emergency extraction information **(mandatory)**: Yes: ☐ No: ☐ N/A: ☐
16) Parachutist(s) qualified IAW parachute special provisions (USPA/LOA): Yes: ☐ No: ☐ N/A: ☐
17) Air Race: performer requires an Air Race Card: Yes: ☐ No: ☐ N/A: ☐ Class: _____
18) UAS Demo-UAS operator qualified IAW UAS special provisions: Yes: ☐ No: ☐ N/A: ☐ Part 101/Public/Civilian/Part 107_____

Figure 3-59. Sample Aviation Event Performer Inspection Job Aid (Continued)

Performer Inspection Requirements References

1–3: Self-explanatory.

4: 14 CFR part 61, § 61.3(c).

5: 14 CFR part 61, § 61.3(a).
Order 8900.1 Volume 6, Chapter 11, Section 10.

6: Order 8900.1 Volume 6, Chapter 11, Section 10.
Order 8900.1 Volume 5, Chapter 9, Section 2.

7: Order 8900.1 Volume 6, Chapter 11, Section 10.

8: Order 8900.1 Volume 3, Chapter 6, Section 1.*

9: Order 8900.1 Volume 3, Chapter 6, Section 1.*

10: Order 8900.1 Volume 3, Chapter 6, Section 1.*

11: Order 8900.1 Volume 3, Chapter 6, Section 1.*

12: Order 8900.1 Volume 3, Chapter 6, Section 1.*

13: 14 CFR part 105, § 105.43.

14: 14 CFR part 105, § 105.43; lead seal for American performers, lead or plastic seals for international performers.

15: Order 8900.1 Volume 3, Chapter 6, Section 1.

16: Order 8900.1 Volume 3, Chapter 6, Section 1 and Special Provisions Parachute CoA.

Note: USPA license/ratings or AFS-800 LOA.

17: Order 8900.1 Volume 3, Chapter 6, Section 2.

18: Order 8900.1 Volume 3, Chapter 6, Section 1.

* = Refer to Order 8900.1 Volume 3, Chapter 6, Section 1, Figure 3-24, for Standard, Formation, and Dynamic Maneuvering.

Caution: When inspecting a parachute, ensure the parachute owner or jumper shows you where the requested items are. Never handle the parachute; have the owner or jumper hold and handle the parachute at all times.

Figure 3-60. Sample Aviation Event Parachutist Equipment Inspection Job Aid

(ver 2-2020)

1) Reserve parachute packed within the previous 180 calendar-days: Yes: ☐ No: ☐ N/A: ☐
2) Reserve parachute seal installed properly and intact: Yes: ☐ No: ☐ N/A: ☐
3) Reserve parachute packing record has the correct information: Rigger's name: Yes: ☐ No: ☐ N/A: ☐ Seal ID: Yes: ☐ No: ☐ N/A: ☐ Location where packed: Yes: ☐ No: ☐ N/A: ☐ Date: Yes: ☐ No: ☐ N/A: ☐ Any remarks with the return to service: Yes: ☐ No: ☐ N/A: ☐
4) Inspect parachute packs and harness for condition **(see <u>Caution</u> below)**: Yes: ☐ No: ☐ N/A: ☐

<u>Parachutist Equipment Inspection Requirements References</u>

1–4: 14 CFR part 105, § 105.43 and Order 8900.1 Volume 6, Chapter 11, Section 10.

<u>Caution</u>: When inspecting a parachute, ensure the parachute owner or jumper shows you where the requested items are. Never handle the parachute; have the owner or jumper hold and handle the parachute at all times.

Figure 3-200. Sample Event Organizer Checklist – Required Aircraft Documents

(ver 02-2020)

Aircraft Required Documents Reg # _____ S/N _____ M/M _____ Date: _____	**Yes**	**N/A**
1) Copy of airworthiness certificate:	☐	–
2) Copy of registration certificate:	☐	–
3) Copy of operating limitations:	☐	☐
4) Copy of the current inspections below **or** Aircraft Status and Inspection Form: • Annual/100 Hour/Progressive/Condition. • Section 91.411 (Altimeter/Static). • Section 91.413 (Transponder). • Section 91.207 (ELT). • Section 91.417 (Recurring Airworthiness Directives Status).	☐	–
5) Copy of program letter (e.g., experimental exhibition):	☐	☐
6) Copy of Special Flight Authorization (SFA) for foreign-registered aircraft:	☐	☐
7) Authority to carry passengers for hire: 1) Exemption § 91.317/§ 91.319; 2) § 91.146/§ 91.147:	☐	☐
8) Copy of parachutist aircraft modification paperwork: • Current Weight and Balance. • FAA 337 forms for aircraft modifications.	☐	☐
9) Copy of operating certificate or letter of deviation authority for large (part 125) aircraft used in sport parachuting:	☐	☐
10) Copy of the logbook signoff for maneuvers being performed in the air show, documenting the maneuvers were satisfactorily accomplished. (Per the Operating Limitations for Special Airworthiness Certificate Aircraft):	☐	☐
11) Copy of valid signed and dated Air Racing Flight Demonstration Form (required after any major modification):	☐	☐
12) UAS demo-UAS aircraft in a condition for safe operation: Part 101 ☐ Part 107 ☐ Part 91 ☐ Public ☐ Civilian ☐	☐	☐
13) Ejection seat installed – training program:	☐	☐
14) Copy of the emergency parachute inspection card:	☐	☐

Figure 3-200. Sample Event Organizer Checklist – Required Aircraft Documents (Continued)

Aircraft Documentation Requirement References

1: 14 CFR part 91, § 91.203.
2: 14 CFR part 91, § 91.203.
3: Order 8130.2, Chapter 4 (Issuing Special Airworthiness Certificates).
4: 14 CFR part 91, § 91.411; § 91.413; § 91.207; § 91.417.
Order 8900.1 Volume 3, Chapter 6, Section 1.
Order 8900.1 Volume 6, Chapter 11, Section 10.
5: Order 8130.2, Chapter 4 (Issuing Special Airworthiness Certificates), Chapter 12 (Experimental Purpose of Exhibition), and Chapter 13 (Experimental Purpose of Air Racing).
6: 14 CFR part 91, § 91.715; and Order 8130.2, Chapter 22 (Special Flight Authorizations for Foreign Civil Aircraft).
7: Reference Exemption Letter issued to the operator (§ 91.317/§ 91.319).
8: Order 8900.1 Volume 6, Chapter 11, Section 10.
9: Order 8900.1 Volume 6, Chapter 11, Section 10.
10: Order 8130.2, Chapter 4 (Issuing Special Airworthiness Certificates).
11: Order 8900.1 Volume 3, Chapter 6, Sections 1 and 2.
12: Order 8900.1 Volume 3, Chapter 6, Section 1.
13: Order 8130.2, Chapter 4 (Issuing Special Airworthiness Certificates).

Note: Owner/operator must submit a copy of the applicable documents (electronic copy preferred).

Figure 3-201. Sample Event Organizer Checklist – Required Performer/Parachutist Documents

(ver 02-2020)

Performer Required Documents Pilot Name: _____ Date: _____	**Yes**	**N/A**
1) Copy of pilot certificate:	☐	–
2) Copy of medical certificate:	☐	☐
3) Copy of current/valid government photo ID:	☐	–
4) Copy of the LOA/endorsement for pilots operating surplus military aircraft:	☐	☐
5) Copy of Air Race Credential from Race Class/Organization:	☐	☐
6) Copy of the statement of aerobatic competency (SAC) for ☐ Aerobatic (Solo ☐ Formation ☐) or ☐ Dynamic Maneuvering (Solo ☐ Formation ☐) pilots:	☐	☐
7) Copy of the industry formation card for Standard Formation (nonaerobatic) pilots:	☐	☐
8) Copy of Parachutist(s) USPA License ☐ or AFS-800 LOA ☐ Sanctioned Military Team ☐:	☐	☐
9) Copy of the emergency parachute inspection card:	☐	☐
10) Performers emergency extraction information (mandatory): Listed in ICAS Database: Yes ☐	☐	☐
11) UAS demo/operation-UAS operator – qualification and/or certificate: Part 101 ☐ Part 107 ☐ Part 91 ☐ Public ☐ Civilian ☐	☐	☐
Parachutist Required Documents	**Yes**	**N/A**
1) Reserve parachute packing record:	☐	☐

Note: Owner/operator must submit a copy of the applicable documents (electronic copy preferred).

Performer Required Documents References

1: 14 CFR part 61, § 61.3(a)(1) or (b).
2: 14 CFR part 61, § 61.3(c).
3: 14 CFR part 61, § 61.3(a)(2); and Order 8900.1 Volume 6, Chapter 11, Section 10.
4: Order 8900.1 Volume 6, Chapter 11, Section 10.
Order 8900.1 Volume 5, Chapter 9, Section 2.
5: Order 8900.1 Volume 3, Chapter 6, Section 2.
6: Order 8900.1 Volume 3, Chapter 6, Section 1.
7: Order 8900.1 Volume 3, Chapter 6, Section 1.
8: Order 8900.1 Volume 3, Chapter 6, Section 1.
9: Order 8130.2, Chapter 4 (Issuing Special Airworthiness Certificates).
10: 14 CFR part 105, § 105.43.
11: Order 8900.1 Volume 3, Chapter 6, Section 1.

Parachutist Required Documents References

1: 14 CFR part 105, § 105.43.

Figure 3-202. Sample Aviation Event FSDO Checklist

Aviation Event (*Add Name Type e.g., Hillsboro Air Show, ABQ Balloon Event, Parachute Demo, etc.*):		
FSDO Name:		
Inspector in Charge (IIC):		
Date(s) of Aviation Event:	Location:	
Event Organizer Name:		
Date (*CoW/A Received*):	Date (*CoW/A Issued*):	Date (*Checklist Complete*):
☐ 1. Upon receipt of application for the issuance of the Certificate of Waiver or Authorization (CoW/A) (FAA Form 7711-2) create appropriate PTRS records. Monitor timelines for review and issuance of CoW/A.		
☐ • Document the issuance of a Certificate of Authorization (CoA) (FAA Form 7711-1) by using activity code 1220. In the "National Use" field of the PTRS record, enter "PA" for parachute demo and "RL" for rocket launch.		
☐ • Document the issuance of a Certificate of Waiver (CoW) (FAA Form 7711-1) for a balloon event, air race, or air show by using activity code 1230. In the "National Use" field of the PTRS record, enter "BE" for balloon event, "AS" for air show, "AR-XC" or "AR-CC" for a cross-country or closed-course air race, "UAS" for Unmanned Aircraft Systems demonstrations, "FO-M" for flyover military.		
☐ • Document the issuance of a CoW (FAA Form 7711-1) for an Aerobatic Practice Area (APA) using activity code 1232. In the "National Use" field of the PTRS record, enter the following: "APA-ST"/"APA-LT" for short-term or long-term.		
☐ • Document the issuance of a CoW (FAA Form 7711-1) for an Aerobatic Contest Box (ACB) using activity code 1233. In the "National Use" field of the PTRS record, enter "ACB IAC" if an IAC-sanctioned event.		
☐ • A copy of the FAA Form 7711-1 and FAA Form 7711-2 and all associated attachments is completed and added to the FSDO file, sent to the event organizer and ATO. A copy is sent to the assigned AES for an air show, air race (closed course), or balloon event.		
☐ • A copy of the completed/approved/disapproved FAA Form 7711-2 with the supporting documents submitted by the event organizer (now part of the 7711-1 if approved) is retained in the FSDO file.		
☐ • Record of meetings and telephone conversations regarding the aviation event or ACB/APA is retained in the FSDO file.		
☐ • Record of coordination with ATO, ARP Division, AUS, AST, AFS-830 (Environmental, if applicable) is retained in the FSDO file.		
☐ • Record of coordination of Environmental Information Document (EID) with AFS-830 for an LT APA CoW (more than 30 days). A copy of the EID is retained in the FSDO file with the LT APA CoW.		

2. ☐	If the aviation event included military participation (vehicle and static displays, military flight demonstrations (e.g., aerobatic/nonaerobatic, flybys, and reenactments) and flyovers, etc.) a DD Form 2535 must have previously been submitted to the military by the event organizer and the FSDO provided a recommendation for approval.
☐	• Complete the appropriate FAA blocks (Section IV) of a DD Form 2535 (submitted by the event organizer), and sign the form. The results of the site feasibility conducted by the FSDO is "unsatisfactory," "satisfactory," or "conditional satisfactory." *Note: Include a copy with the issued CoW or CoA. The completed form must be retained in the FSDO file and is sent to the assigned AES.*
☐	• Open PTRS, using activity code 1231, with "CoW/AI" for CoW/A issued or "NCoW/A" for no CoW/A issued, entered into the "National Use" field, and note in comments if "unsatisfactory," "satisfactory," or "conditional satisfactory," as appropriate. *Note: Military flyovers may not require a CoW or CoA, but the form must be completed, retained in a FSDO file, and PTRS entered.*
☐	• FSDO must participate in all preseason and arrival meetings (onsite or teleconference) with organizers anticipating participation by military jet demonstration teams (Blue Angels, Thunderbirds, Snowbirds), including discussion of site feasibility determination (to include FSDO approval/disapproval of lower altitudes for ingress/egress) and document participation in the PTRS.
3. ☐	For events in which no FAA-approved military jet team is performing, ensure the IIC assigned to process the application or perform surveillance for the aviation event completed the appropriate OJT for air show surveillance, including performing surveillance of at least three air shows as a trainee (with a qualified IIC) before being assigned as IIC.
4. ☐	For events in which an FAA-approved military jet team is performing, ensure the IIC satisfactorily completed OJT for a military aviation event, including participation in a site feasibility determination (to include FSDO approval of lower altitudes for ingress/egress), a preseason evaluation meeting, CoW preparation for a military jet team, and surveillance of two air shows in which an FAA-approved military jet team performed, and pre-arrival briefings before being assigned as IIC.
5. ☐	FSDO manager coordinates with the assigned AES any aviation event (air show, balloon event, or air race (closed course)) not monitored by an IIC or if qualified IIC is not available.
☐	• Document the outcome of the coordination in the open the PTRS record for the aviation event that a CoW or CoA is being prepared for.
☐	o If the FSDO did not have a qualified inspector to be the IIC and outside resources were utilized, PTRS record must be made documenting the need/use, with "IIC Qual" entered into the "National Use" field. o If the FSDO did not have resources due to personnel or funding constraints, a risk assessment and memo coordinated with the assigned AES must be done, and a PTRS record must be made documenting the outcome, with "IIC Resources" entered into the "National Use" field.

6. ☐	IIC must conduct a Pre-Surveillance Team Meeting to discuss roles, responsibilities, CoW/A, emergency response, ethics, required equipment, weather, communication, risks, and unique site feasibility considerations.
7. ☐	IIC sends event organizer the Participant/Performer and Aircraft Checklist to be completed by each performer listed on the Schedule of Events. The event organizer requests performers return an electronic copy of records and checklist to the responsible person and copy the IIC at least 30 days prior to event.

8. ☐	Conduct surveillance.
	• Attend preshow safety briefing. Ensure all required items on checklist are addressed.
	  o IIC must attend pre-arrival briefing with military jet teams.
	  o Attend remote pilot briefings and specialty briefings (e.g., circle jumpers, flyby/flyover (formation/in-trail), pyro, etc.)
	• Collect copy of Participant(s) Briefing Signature Sheet (daily, remote, and specialty). Verify only performers briefed perform.
	• Complete review of performers and aircraft paperwork. Verify event organizer has ensured only performers/aircraft qualified and current perform.
	• Any areas of noncompliance, incidents, or accidents must be coordinated immediately with the assigned AES and briefing paper submitted to the NAES.
	• Team members must elevate any safety concerns to IIC, who will coordinate with event organizer/responsible person and resolve immediately or suspend/terminate CoW/A until safety concern is resolved.

9. ☐	Daily Debrief—A daily log should be maintained by the IIC and after the day's events, IIC will discuss the event with the event organizer/responsible person, and if necessary, jointly with a performer(s)/participant(s). Review the following: • Areas of noncompliance. • Safety-related problems. Violations, incidents, accidents. • Aerobatic competency/competency of nonaerobatic participant. • Opportunities for improvement. • If no problems encountered, apprise the event organizer/responsible person that the event went well. • Any incidents or accidents must be coordinated and debriefed with AES/NAES. Initiate any actions. *Note: Military jet teams require an individual daily debrief, requiring the IIC to communicate directly with the team's Operations Officer at the end of each performance/day. The event organizer/responsible person should be present or previously briefed on anything discussed.*

10. ☐	After-action meeting (if necessary). After conclusion of the aviation event (usually a week later) in the after-action meeting with the event organizer, discuss: • Successes. • Opportunities for improvement. • Areas of noncompliance. • Safety-related problems. Violations, incidents, accidents. • Aerobatic competency/competency of nonaerobatic participant. • Any incidents or accidents must be coordinated and debriefed with AES/NAES. Initiate any actions. • If a similar event is planned for next year, follow up with a letter outlining areas that need improvement.
11. ☐	Complete office file consisting of the following: • FAA Forms 7711-1 and 7711-2 (and all attachments). • Record of meetings and telephone conversations (including record of after-action meeting with the event organizer). • Performer sign-in sheet. • Performer/Aircraft Job Aid. • Safety briefing checklist. • Record of coordination with ATO, ARP Division, AUS, AFS-830 (Environmental, if applicable), or AST (as required). • Record of any areas of noncompliance, incidents, or accidents and briefing paper. • Copy of EID for an APA CoW (more than 30 days).
12. ☐	Make appropriate PTRS entry for surveillance and close out any open PTRS for Issuance of a CoW/A. • Surveillance PTRS Codes: **Air Race:** 1685 / 3685 / 5685; **Air Show:** 1686 / 3684 / 5684; **Parachute Demonstrations:** 1696 / 3688 / 5688; **Balloon Events:** 1697 / 3688 / 5688; **Aerobatic Competitions:** 1698 / 3688 / 5688; **Unmanned Aircraft Systems Aerial Demonstrations:** 3688 / 5688; **Fly-In:** 1686 / 3684 / 5684; **Flyover:** 1686 / 3684 / 5684; **Aerobatic Practice Area:** 1698 / 3688 / 5688. • In the “National Use” field of the PTRS record, enter the following, as applicable: “PA” for parachute demo, “RL” for rocket launch, “BE” for balloon event, “AS” for air show, “FO-M” for flyover military, “AR-XC” or “AR-CC” for a cross-country or closed-course air race, “UAS” for Unmanned Aircraft Systems demonstrations, “APA-ST”/“APA-LT” for APA short-term or long-term, “FlyIn” for a fly-in or “FlyInNW/A” for those surveilled and no CoW/A issued.
13.	Signature IIC:
14.	Date:

Figure 3-203. Sample List of Waived Regulations for Aviation Events

WAIVED REGULATIONS FOR AVIATION EVENTS BY TITLE, SECTION/SUBSECTION, AND DESCRIPTION

(Per 14 CFR Part 91, § 91.905, List of Rules Subject to Waivers)

Section 91.107, Use of Safety Belts, Shoulder Harnesses, and Child Restraint Systems:

§ 91.107(a)(2)	May operate without each person on board being notified to fasten safety belt and shoulder harness.
§ 91.107(a)(3)	May operate without each person occupying an approved seat and without a safety belt and shoulder harness being secured about each person.

Section 91.117, Aircraft Speed:

§ 91.117(a)	May operate at speeds greater than 250 KIAS below 10,000 feet MSL.
§ 91.117(b)	May operate at speeds greater than 200 KIAS at or below 2,500 feet above the surface within 4 nautical miles (NM) of the primary airport of a Class C or Class D airspace area.
§ 91.117(c)	May operate beneath Class B airspace at a speed in excess of 200 knots (230 mph).

Section 91.119, Minimum Safe Altitudes: General:

§ 91.119(b)	Minimum altitudes over congested areas for nonaerobatic flight at not less than an altitude of 200 feet above the highest obstacle along an FAA-approved ingress/egress route to and from the aerobatic area within 3 NM radius of the designated show center and no lower than 500 feet above designated spectator areas (authorized military teams only).
§ 91.119(c)	Minimum safe altitude over other than congested areas, except not closer than 500 feet to persons on the surface.

Section 91.121, Altimeter Settings:

§ 91.121(a)	Each person operating an aircraft may maintain the cruising altitude or flight level of that aircraft by reference to an altimeter that is set to zero feet when the aircraft is on the ground.

Section 91.126, Operating On or In the Vicinity of an Airport in Class G Airspace:

§ 91.126(b)(1)	Aircraft may make turns to the left or right when landing at an airport in Class G airspace.
§ 91.126(d)	Aircraft may operate within Class G/waivered airspace via appropriate communications with the official air show control point. Except when otherwise authorized by agreement between the Air Traffic Control Tower and the waiver holder, the usual required communications for arrival and departure at a tower-controlled airport still apply.

Section 91.127, Operating On or In the Vicinity of an Airport in Class E Airspace:

§ 91.127(a)	Aircraft operating on or in the vicinity of an airport in Class E airspace need not comply with § 91.126(b)(1).
§ 91.127(b)	Aircraft departing an airport in Class E airspace need not comply with any traffic patterns established for that airport in part 93.
§ 91.127(c)	"Communications" is waived to allow participating aircraft to operate within Class E/waivered airspace via appropriate communications with the official air show control point. Except when otherwise authorized by agreement between the Air Traffic Control Tower and the waiver holder, the usual required communications for arrival and departure at a tower-controlled airport still apply.

Section 91.129, Operations in Class D Airspace:

§ 91.129(a)	Aircraft operating in Class D airspace need not comply with §§ 91.126(b)(1) and 91.127.
§ 91.129(c)	Each person operating an aircraft in Class D airspace need not meet two-way radio communication requirements.
§ 91.129(e)	A large or turbine-powered aircraft may enter the traffic pattern in Class D airspace at less than 1,500 feet above the elevation of the airport and may maintain less than 1,500 feet until further descent is required for a safe landing.
§ 91.129(f)	Aircraft may operate in Class D/waivered airspace without circling to the left.
§ 91.129(g)	Aircraft may operate in Class D/waivered airspace without departing via established procedures.

§ 91.129(h) Aircraft may operate in Class D/waivered airspace to allow large or turbine-powered aircraft to operate below 1,500 feet without using established noise abatement runways.

§ 91.129(i) Aircraft may operate in Class D/waivered airspace via appropriate communications with the official air show control point. Except when otherwise authorized by agreement between the Air Traffic Control Tower and the waiver holder, the usual required communications for arrival and departure at a tower-controlled airport still apply.

Section 91.130, Operations in Class C Airspace:

§ 91.130(a) Each aircraft operating in Class C airspace need not comply with this section and § 91.129(a), (c), and (e)(1).

§ 91.130(b) "Traffic Patterns" is waived to allow participating aircraft to operate in Class C/waivered airspace without adhering to FAA arrival and departure traffic patterns.

§ 91.130(c) "Communications" is waived to allow participating aircraft to operate in Class C/waivered airspace via appropriate communications with the official air show control point. Except when otherwise authorized by agreement between the Air Traffic Control Tower and the waiver holder, the usual required communications for arrival and departure at a tower-controlled airport still apply.

§ 91.130(d) "Equipment Requirements" is waived to allow participating aircraft to operate in Class C/waivered airspace without adhering to the applicable equipment requirements specified in § 91.215.

Section 91.155, Basic VFR Weather Minimums:

§ 91.155 "Basic VFR Weather Minimums" is waived to allow operations in waivered airspace in accordance with applicable special provisions and FAA Order 8900.1, Volume 3, Chapter 6, Section 1, subparagraphs 3-144A1)b), 3-145E9), and 3-154I.

Section 91.209, Aircraft Lights:

§ 91.209(a) May operate an aircraft after sunset without lighted position lights provided the aircraft is equipped with approved pyrotechnic devices and the devices are in use during the performance.

Section 91.303, Aerobatic Flight:

§ 91.303(c) Aerobatic Flight: Within the lateral boundaries of the surface areas of Class B, C, D, and E airspace designated for an airport.

§ 91.303(d) Aerobatic Flight: Within 4 NM of the center line on any Federal airway.

§ 91.303(e) Aerobatic Flight: Below an altitude of 1,500 feet above the surface.

Section 91.515, Flight Altitude Rules:

§ 91.515(a)(1) Large or turbine-powered aircraft less than 1,000 feet above the surface.

Sample List of Exemptions Issued to Recognized Industry Organizations (RIO)

Section 61.3, Requirement for Certificates, Ratings, and Authorizations:

§ 61.3(a) and (c) *"Operate as pilots in command (PIC) without having their pilot certificates, medical certificates, and photo identifications in their physical possession…"*

Section 91.9, Civil Aircraft Flight Manual, Marking, and Placard Requirements:

§ 91.9(b) *"Civil aircraft flight manual, marking and placard requirements…"*

Section 91.151, Fuel Requirements for Flight in VFR Conditions:

§ 91.151(a)(1) *"Fuel Requirements for Flight in VFR Conditions…"*

Note: Complete list of available exemptions and samples of waived regulations authorized for aviation events is located on the FAA National Aviation Events Program website at https://www.faa.gov/about/initiatives/airshow/.

Figure 3-204. Sample Participants Safety Briefing Signature Page for Aviation Events

PARTICIPANT SAFETY BRIEFING SIGNATURE PAGE FOR AVIATION EVENTS

1. AVIATION EVENT/LOCATION: _____
2. DATE: _____
3. RESPONSIBLE PERSON: _____
4. AIR BOSS: _____
5. FAA IIC: _____
6. OTHER: _____

PARTICIPANTS:

I have read and/or been briefed on this document and fully understand the procedures, requirements, and limitations of the Certificate of Waiver and/or Certificate of Authorization (CoW/A) and all of its special provisions.

I attended the safety briefing required for today's aviation event.

[insert for airshows] I have performed or practiced my performance(s) within the previous 45 days and in accordance with FAA Order 8900.1 (Vol. 3 Ch. 6 Sect. 1).

[insert for airshows] The team leader signs as official team representative and lists all team members who will be performing today, be briefed, met proficiency requirements, and perform in accordance with FAA Order 8900.1 (Vol. 3 Ch. 6 Sect. 1).

FULL NAME (PRINTED) *[add team name]	SIGNATURE	AIRCRAFT REGISTRATION #

Briefing Sign In Sheet
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Figure 3-205. Sample Air Race Flight Demonstration Statement

Air Race Flight Demonstration Statement

I certify that I have completed an air racing flight demonstration in [insert registration number/serial number], at the anticipated density altitude of the race, at a true airspeed of [insert speed] with a turning g load of [insert g load], and have found the aircraft has no hazardous characteristics or design features and is safe for air race operations. These parameters establish the race aircraft has demonstrated, at the anticipated density altitude of the race, a true airspeed of 105% of its projected qualifying speed while demonstrating a turn capability of 150% of the approved racecourse maximum designed g load of the [insert applicable race class] race class.

This aircraft has received no major changes or alterations after the flight demonstration date.

*Flight Demonstration Date:*_____

*Primary Race Pilot Name*_____

*Signature*_____ *Date* _____

****

*Alternate Race Pilot(s) Name*_____

I accept the conditions of the above statement

Date _____

*Signature*_____

RESERVED. Paragraphs 3-161 through 3-162.