**Checklist For Coordinating Fire/Crash/Rescue Requirements**

 **For Offsite Flight Test Operations**

1. **Determine Areas of Responsibility.** Depending on the location, fire operations are frequently split between the airside and the groundside of the airfield. The dividing line is frequently the hangar where the airplane is maintained. When the airplane is in the hangar, the local fire department will be responsible. The airfield fire/crash/rescue team will cover ramp and flight operations. If the airfield is a joint civil/military facility, there may be more than one facility that serves the airside. In addition, there may be maintenance and overhaul facilities on the airfield with an indigenous fire protection capability, which should be considered.

\_\_\_\_\_\_ Contact the local fire department and determine their capability to deal with a structural fire PLUS the fuel and other consumables contained within the aircraft and within the hangar for aircraft servicing and maintenance.

\_\_\_\_\_\_ Contact the respective airfield fire/crash/rescue teams and determine if the maximum fire capability matches the needs of the size and fuel capacity of the airplane

1. **Schedule An Initial Visit For Fire Officials.** This will be a walk-through of the facility and initial look at the airplane. The local fire department will be interested in groundside access to the facility, and the hydrant location either inside or outside the hangar. They will also check for appropriate number and type of fire extinguishers in the hangar and on the ramp. The airfield fire/crash/rescue representatives should be invited to see the test airplane for the first time. This will normally be either the Fire Chief or the person in charge of fire crew training.

\_\_\_\_\_ Invite the local fire department to inspect the hangar and fire equipment associated with the hangar environment.

\_\_\_\_\_ Invite airfield fire/crash/rescue representatives for a first look at the airplane.

1. **Establish Communication Paths.**  There are several scenarios that need to be considered when outlining the immediate communications needed to get the correct fire response. In most cases where engines are not running, calling 911 (in the U.S.) is the best way to generate a fire response. The 911 dispatcher will dispatch the closest fire company that is not already engaged on a fire call. If the airplane is on the ramp with engines not running when the 911 call is made, the dispatched fire company will normally contact the airfield fire/crash/rescue control center for assistance. For engine runs on the ramp, with no intent for flight, the engine run crew will normally be in contact with ground or ramp control. For fires in that scenario, initiate the response by radio to the controller. Be alert at times when the airfield is closed and no ground or ramp control is in operation. That situation will require a call to 911.

Consider the following scenarios and add scenarios that may be appropriate to specific flight test operations:

* Fire event in the hangar, no aircraft involved
* Fire event in the hangar, aircraft inside
* Fire event on the ramp, engines not running
* Fire event on the ramp during engine run, in contact with ground control
* Fire event on the ramp during engine run, airfield closed
* Aircraft accident on the airfield

\_\_\_\_ Develop local guidelines for everyone to follow in the scenarios that could most likely occur during flight test operations.

\_\_\_\_ Develop a complete understanding of frequencies for fire/crash/rescue response and publish guidelines for the correct frequencies or phone number to use during engines running ramp operations.

1. **Inform Air Traffic Control and Fire/Crash/Rescue Agencies of High Risk Tests.**

Each flight test organization has a method for classifying flight tests according to the level of acceptable risk. Risk categories should be discussed with both ATC and the Fire/Crash/Rescue team during training. For tests in the highest risk category (for example: first flights, certification tests to determine minimum control speeds, tests with engines intentionally shut down, etc), both Air Traffic Control and the local Fire/Crash/Rescue team should be informed that a high risk test will be performed, prior to the event. The Fire/Crash/Rescue team may wish to pre-position equipment close to the runway in a standby position, but care should be taken that they be positioned outside of any obstacle free zone, as determined by the nature of the test.

1. **Aircraft Preparation.** During the initial visit by firefighters, particularly the fire/crash/rescue team, the critical rescue points should be discussed and properly identified. It is up to the test team to properly identify handles for door operation, panels and/or handles for exterior operation of emergency exits, and cutting points for firefighters to gain access to the airplane at the proper points. The airplane interior should be properly prepared with fire extinguishers, walk-around oxygen bottles, and appropriate equipment to cut from the inside out. Those areas that can easily be cut from the inside out should be specifically marked. Flight crews should wear the best fire resistant clothing available, and if possible, advanced systems such as the combination of fire resistant material and specialized fire suppression systems should be installed to protect the crew.

\_\_\_\_ Provide proper markings on the outside of the airplane for all exits, including emergency exits that can be accessed from the outside of the aircraft.

\_\_\_\_ Provide equipment inside the aircraft for the crew to move around the airplane in a fire/smoke event, and if necessary to cut an escape path from the inside out.

\_\_\_\_ Provide the best clothing and interior fire suppression systems available, as a part of the flight test installation.

1. **Fire/Crash/Rescue Training.** Each flight test airplane is unique, and even though it may look from the outside like a “standard version”, from the inside things are quite different. After the first walk-around, training materials need to be developed that identify the following:
* The working location of everyone expected to be on board the airplane
* A description (quantities, etc.) of the large energy sources on the airplane (fuel, electrical cabling, batteries, oxygen system, etc.)
* Where large consoles are located that may impede the progress of a fully-suited fire fighter
* How to shutdown engines if they are running
* Door operation from the outside, including cargo doors and access to avionics compartments
* Emergency exit locations and how to operate them from the outside
* Exterior markings where firefighters can cut the structure to gain access

This can be via a PowerPoint presentation, via hard copy, or both. After the initial presentation of material, at least one training session should be conducted at the actual airplane with the firefighters. Ideally, enough on site training should be conducted to cover everyone in the airside fire brigade, but this may not be possible.

\_\_\_\_ Prepare and deliver a presentation to fire/crash/rescue teams that fully describes the details mentioned above.

\_\_\_\_ Schedule aircraft downtime for the majority of the airside firefighters to get hands-on training for doors, aircraft securing, location of people, and a general idea of how the flight test installation and equipment are laid out.

\_\_\_\_ Risk categories for the specific test planned should be briefed to ATC and the Fire/Crash/Rescue team. In the case of High risk tests, ATC and the Fire/Crash/Rescue team will be informed prior to the event. If fire vehicles are pre-positioned prior to testing, the obstacle free zone for specific tests should be briefed.