	Standard Operating Guideline	
	SOG Name:	**Aircraft Firefighting Operations**
	SOG Number:	**100.9**
	Standard:	TBD
	Guideline Owner:	Emergency Operations – Incident Operations
	Implementation Date:	June 18, 2021
	Date of Last Revision:	June 18, 2021
	Authority:	Larry H. Williams, Jr, Fire Chief

SUBJECT: Aircraft Fire Fighting Operations

DATE: August 12, 2021

PURPOSE: This guideline is to establish direction for fighting aircraft fires and how to respond to an aircraft incident/accident. There is a large amount of air traffic in and around the city limits of Dothan. Commercial, military and general aircraft can be seen flying at all times. In the event of an aircraft accident, structural firefighters can accomplish effective rescue and fire control objectives until ARFF units arrive.

A. GENERAL

When requested, The Dothan Fire Department provides stand-by operations for Air Ambulance landing and take-off's at Flowers Hospital and Southeast Alabama Medical Center (SOUTHEAST HEALTH). There is the chance of an aircraft incident/accident happening outside of the airport grounds and the Department will be first on the scene. Waiting for ARFF units would be detrimental in the case of a fire or rescue. There is the possibility that a Landing Zone (LZ) will have to be established (see DFD Standard Operational Guideline #200.9, Landing Zones for Helicopter Operations) for large-scale incidents that occur within or outside the city limits.

B. DEFINITIONS

- Aircraft Accident -- An occurrence during the operation of an aircraft in which any person suffers death or serious injury or in which the aircraft receives damage.

    1. Aircraft Alert 3 (Small and Large) – Aircraft Crash. Units to respond are: 3 Paramedic Engines, 1 Truck Company, 1 Battalion Chief, 1 HazMat Unit, Fire Chief, EMS 1, Training 1, 3 Ambulances.

- Aircraft Incident -- An occurrence, other than an accident, associated with the operation of an aircraft that affects or could affect continued safe operation if not corrected.

    1. Aircraft Alert 1 (Small) – Small aircraft in trouble with less than 10 passengers. Units to respond are: 2 Paramedic Engines, 1 Battalion Chief, 1 Ambulance.

2. Aircraft Alert 2 (Large) – Large aircraft in trouble with more than 10 passengers. Units to respond are: 2 Paramedic Engines, 1 Truck Company, 1 Battalion Chief, 2 Ambulances.

- ARFF--Airport Rescue and Fire Fighting

- Low Impact Crash (Hard Landing)-- Aircraft accidents that do not severely damage or break up the fuselage and are likely to have a large percentage of survivors.

- High Impact Crash-- Aircraft accident with severe damage to the fuselage and with a significant reduction of occupant survival.

- Left and Right-- The left and right sides of the aircraft are determined by the pilot. The pilot's left is the aircraft's left and vice versa.

- LZ Coordinator-- Member who establishes the landing zone. He/She is responsible for guiding the helicopter and providing information to the Incident Commander and aircraft dispatcher.

C. OPERATIONAL ASSIGNMENTS

SECTION 1
Stand-by operations such as MAST landings at Flowers Hospital and Southeast Health shall require a Fire Level 1 response (1 paramedic Engine Company).

SECTION 2
The establishment of a Landing Zone (see LZ SOG #200.9) at incidents outside a helipad or airport, shall require a Level 1 response, one paramedic Engine Company *plus* one additional member to act as LZ coordinator. The LZ Coordinator shall be trained and qualified to manage these duties. This member could be a battalion chief, staff officer, duty officer, etc. It is important that the additional member is dispatched at the same time the paramedic engine is dispatched for Fire-Rescue protection.

SECTION 3
A low impact crash without fire shall receive an Alert Level 2 response (2 paramedic engine companies, 1 truck company and a battalion chief). Example: Stand-by operation at SOUTHEAST HEALTH, as the helicopter lands a cross tube for the landing skids breaks, causing damage to the aircraft. There is already one company present, request additional paramedic engine, a truck company, and a battalion chief.

SECTION 4
Any *unannounced/unknown type of* accident/incident shall receive an Alert Level 3 response (3 paramedic engine companies, 1 truck company, and 1 battalion chief) from the Dothan Fire Department. The Dothan Airport or Ft Rucker Fire Dept will respond by their guidelines. Examples: High impact crash, aircraft fire, or emergency landings. An

announced emergency such as an engine fire or smoke in the aircraft will receive an Alert Level 3 Response.

SECTION 5
An aircraft accident involving a structure shall receive a Level 3 Structure Fire (3 paramedic engines, 1 truck company, and 1 battalion chief) response with an additional engine company, technical rescue company and request one ARFF unit from the Airport and one ARFF unit from Fort Rucker on the initial response. The Fire Chief, and Deputy Chief must also be notified.

D. COMMAND AND CONTROL

SECTION 1
ARFF incidents shall not differ from normal operating procedures under Dothan Fire Department's SOG for Incident Command (Operational Guideline 1).

SECTION 2
ARFF Incidents using structural engines do require different tactics, but the strategies are the same.

1. Strategies
   - Rescue
   - Exposures
   - Confinement
   - Extinguishment
   - Overhaul
   - Salvage
   - Ventilation
   - Scene Control
   - Preserve potential crime scene

2. Tactical Objectives
   - Establish rescue path to pilots and crew
   - Engine shutdown
   - Remove victims (pilots, crew, and passengers)
   - Control fire
   - Extinguish fire
   - Identify Cargo
   - Manage hazardous run-off

E. SPECIAL CONSIDERATIONS

SECTION 1
Typically, aircraft do not crash on flat, even terrain with the nose of the aircraft facing the wind. Terrain, wind, wreckage and survivors shall constitute where responding units

shall set up and will dictate staging area locations. Because of the possibility of a "running" flammable liquids fire, set-up should be up-hill and upwind of this type of incident.

SECTION 2
Be aware of the possibility of three-dimensional "running" fuel fires. Foam is the choice of agent for that should be used in containing "running" fuel fires and all aircraft fires when possible. Terrain and wind direction are excellent indicators to assist in determining "running" fuel fires.

SECTION 3
Preservation of the scene for the following investigation must be a priority after rescue and exposures are protected.

SECTION 4
In any accidents/incidents involving major structural damage to the aircraft, ignition/re-ignition of the fuel is a **constant** threat, even if there was no fire immediately after the crash. Paramedic engine companies must completely cover fuel-saturated areas with foam and reapply as necessary every 10 – 15 minutes.

F. SET-UP

SECTION 1
The first arriving paramedic engine shall approach and set up upwind of the incident. The paramedic engine should be at a 45-degree angle off the nose of the aircraft. *Realize this may not be possible at all incidents*. The paramedic engines with a pre-connected foam line should pull this line. Establish a rescue corridor, gain access to the aircraft, perform emergency shut down of the aircraft, and begin rescue operations. Extrication may be needed (See ARFF Operational Guidelines – Addendum A).

SECTION 2
The second arriving paramedic engine approaches and sets up beside the first arriving paramedic engine. They shall establish a foam and water supply for the first paramedic engine and pull a second handline. This second handline should be a foam line. The second arriving paramedic engine must also perform extrication and rescue operations.

SECTION 3
The third arriving paramedic engine will set up on the opposite side of the aircraft at a 45-dgree angle. Ensure that there is a minimum of two (2) foam lines established. The third arriving paramedic engine will establish a dedicated Rapid Intervention Crew (RIC) and set-up a triage area.

SECTION 4
The first arriving truck company shall proceed to Level II staging and be prepared to be used for personnel, unless the aircraft has struck a building. Structural guidelines should

then be followed. Personnel will receive assignments from the Incident Commander (rescue, extrication, suppression, etc).

G. AUTOMATIC/MUTUAL AID

SECTION 1

In all cases with aircraft emergencies off the airport grounds, mutual aid from the Dothan Airport and/or Ft Rucker shall be requested as soon as possible. They have ARFF vehicles and an abundant supply of foam. Command shall notify foam suppliers to acquire an emergency foam supply shipment and ensure that the Department's foam storage supply is transported to the crash site.

SECTION 2

If the incident is involving a military aircraft from Fort Rucker, Air Ambulance will be enroute for medical & ARFF support and reconnaissance. Establish a Landing Zone (LZ) and inform the Air Ambulance dispatcher with the LZ information as soon as possible (see MAST Procedures SOG #200.9). Normal crew assignment for a FLATIRON response aircraft incident is 2 pilots, 2 ARFF firefighters, and 1 Army medic.

SECTION 3

Response to the Dothan Airport will follow the Dothan Airport Emergency Plan.

H. TRAINING

SECTION 1

Company Level—This training shall be established at the individual company's station. Training includes, but is not limited to observing training videos of aircraft set-up and shut down procedures review of this SOG and review of the Dothan Regional Airport Emergency Response Plan, and reviewing IFSTA's ARFF textbook.

SECTION 2

Battalion Level—Multi-company drills and tabletop exercises.

SECTION 3

Department Level—Formal training on this SOG regularly. Include 4-6 hours of familiarization at the Candidate School level. Combined drills with the Dothan Airport Fire Department and Fort Rucker Fire Department with emphasis of Dothan Fire Department paramedic engines being "first in".

(Signature on File)
Larry H. Williams, Jr.
Fire Chief
DOTHAN FIRE DEPARTMENT

DOTHAN FIRE DEPARTMENT
AIRCRAFT RESCUE FIRE FIGHTING (ARFF)
OPERATIONAL GUIDELINE # 100.9
ADDENDUM A

1ST IN ENGINE

1. Approach incident and size up conditions.
2. Park, upwind, on a 45-degree angle off the nose of the aircraft, and uphill if possible.
3. Brief Initial Report (BIR-All six points).
4. Lay a supply line if at all possible.
5. Use a pre-connected foam line or make-up a foam attack line.
6. Establish a rescue path and perform emergency shutdown procedures of the aircraft.
7. Start rescue operations.
8. Account for all personnel (PAR).
8. Keep Command and Sector Officers up-dated on status.
9. Call for help, if needed (Dothan Airport and/or Fort Rucker ARFF Units).

2nd IN ENGINE

1. Ensure water and foam supply for first unit. Provide supply line, if needed.
2. If no foam attack line has been established, establish one (in-line eductor).
3. Pull second or establish a second foam attack line.
4. Assist with rescue operations.
5. Company Officer immediately assumes the role of safety officer until relieved (obtain vest when possible).
6. Safety Officer completes an “all sides” (360) view of the incident.
7. Safety Officer reports “360 ” view results to Command (conditions, exposures, hazards, etc.).
8. Safety Officer secures scene (with Fire Line tape using police, etc.).
9. Safety Officer implements a comprehensive safety action plan.
10. Safety Officer role may be passed to the 3rd In Engine Officer if staffing is a problem. If safety is passed, both parties must acknowledge this change.
11. Account for all personnel.
12. Keep Command and Sector Officers updated on status.

3rd ENGINE IN

1. Approach and set-up on opposite side, 45 degree angle off the nose of the aircraft.
2. Establish a second foam attack line.
3. If two foam lines are established, provide foam and water as needed to attack pumper.
4. Provide two members as a dedicated Rapid Intervention Crew (RIC).
5. Provide Triage Area.
6. Account for all Personnel.
7. Keep Command and Sector Officers up-dated on status.

1st IN TRUCK

1. Unless the aircraft is involved with a structure, apparatus goes to Level II staging.
2. Establishes a Level II staging area.
3. Personnel as directed by Command.
   Rescue, Extrication, Exposures, Re-supply, Triage, etc
4. Account for all personnel.
5. Keep Command and Sector Officers up-dated on status.

REHAB UNIT 2

1. Parks at least 500' away from the hazard zone and/or the Command Post (consider co-locating with Air & Light 2).
2. Advises Command of arrival on location.
3. Sets up unit to provide support to our members:
   a) Drink
   b) Food
   c) Fans and Cooling
   d) Blankets and Heaters
   e) Tents
   f) BLS Medical Support—Vital Signs
4. Ensures that all personnel in remote assignment gets Rehab support (includes police and other emergency responders).
5. Monitors time that a company is in rehab.
6. Works with and for Salvation Army for large-scale situation.

1st IN HAZ-MAT UNIT

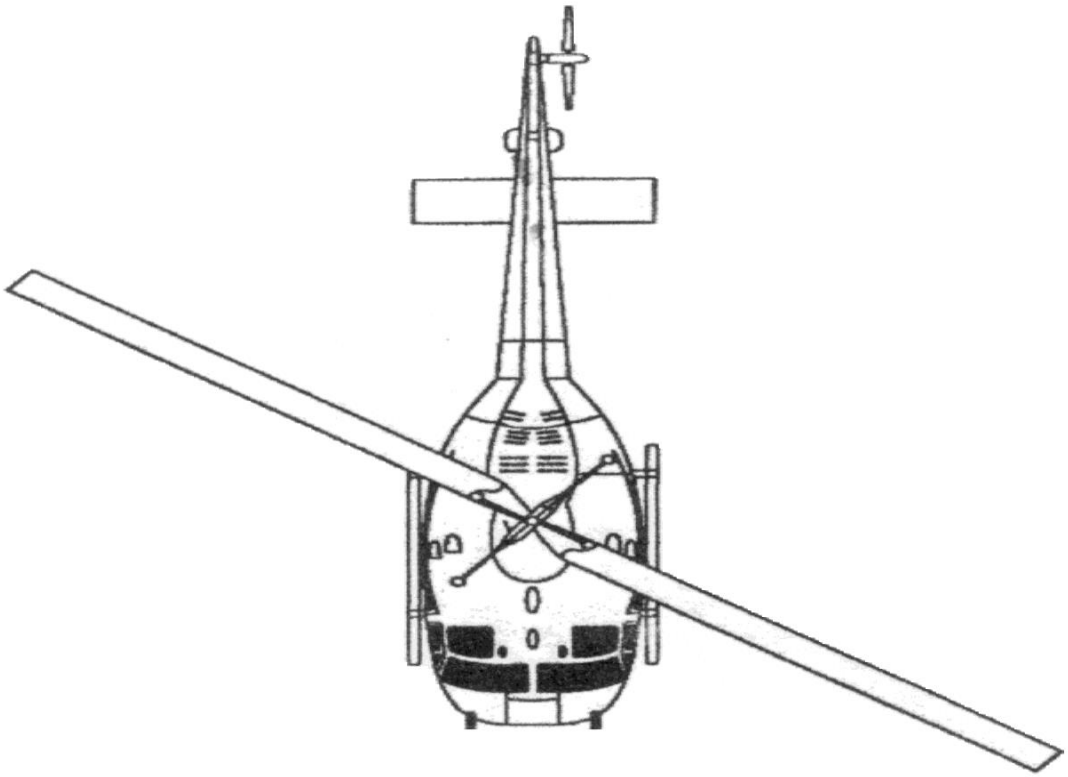
1. Parks in a safe uphill and upwind location at least 500' away from Command.
2. Provides support to Command for Hazardous Materials (absorbent material, research, etc.).
3. Prepares for decontamination operations.
4. Will be directed by Command if Haz-mat entry is needed.

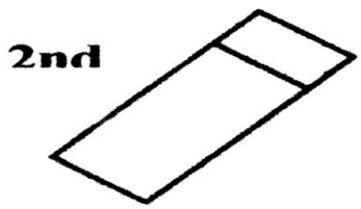
BATTALION CHIEF

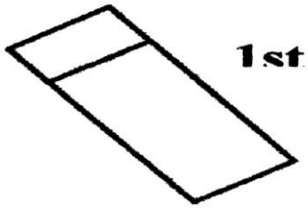
1. Parks at a safe and reasonable distance from the scene. A scene view is preferable, but not a requirement.
2. Be mindful of wind direction, terrain, and growth/spread of the situation.
3. Obtain a briefing from Command (face-to face preferably – radio acceptable) that includes:
   a) Situation status
   b) Resource status (FOAM)
   c) Action plan
   d) Current outcomes
   e) Any and all other pertinent information
4. Once briefing is completed, assume Command and announce same over "800" radio.
5. Ensures continuous supply of foam is available for duration of operation.
6. Revise, adjust or continue Action Plan.
7. Account for all personnel.
8. Track and record resource movement and use.
9. Ensures notification of outside agencies (Dothan Airport, Appropriate Air Ambulance , ADEM, FAA, etc.).
10. Liaison with outside agencies.

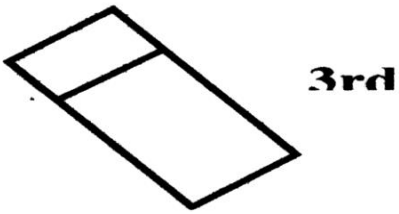
11. Sector Incident into logical and manageable components.
12. Work with Safety Officer (and all others) to ensure that we have a complete and comprehensive Safety Plan.
13. Selects an assistant (recorder) from most logical source (on-duty, staff officers, call back member).
14. Coordinates response with FAA/ Military/Police for scene investigation purposes.

DOTHAN FIRE DEPARTMENT
AIRCRAFT SET-UP FOR UH-1 (HUEY)
IDEAL CONDITIONS

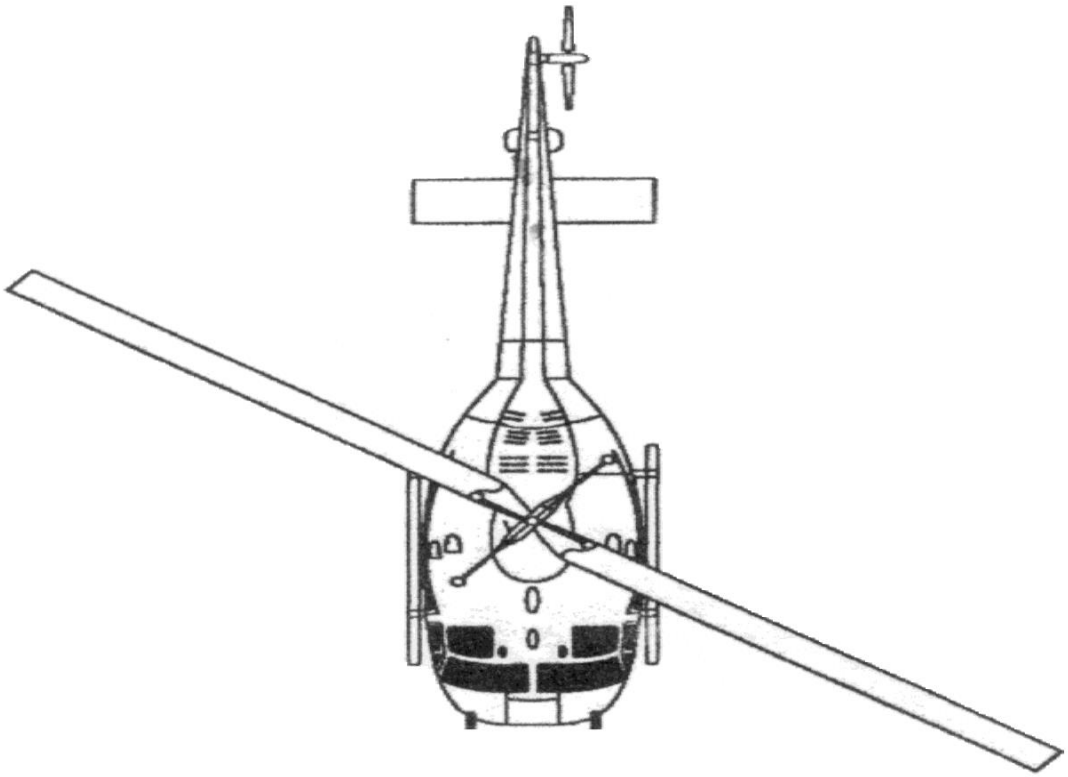


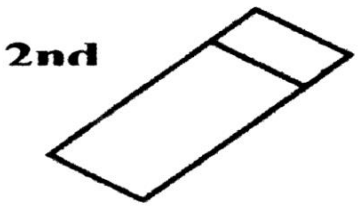


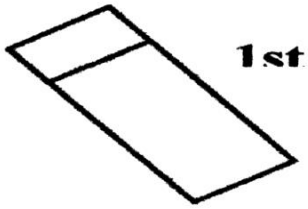


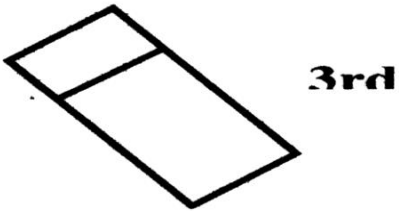


DOTHAN FIRE DEPARTMENT
AIRCRAFT SET-UP FOR UH-1 (HUEY)
IDEAL CONDITIONS









DOTHAN FIRE DEPARTMENT
AIRCRAFT SET-UP FOR UH-1 (HUEY)
IDEAL CONDITIONS