WILDFIRE AVOIDANCE FOR AVIATORS

Coronado National Forest

Tucson Interagency Fire Center

WILDFIRE SUPPRESSION

Every year, wildfires burn approximately 7 million acres of lands in the United States, impacting communities, infrastructure and natural resources. Firefighting aircraft respond to many of these fires, often operating in a low-altitude/ high-risk environment.

The Department of Agriculture and Department of Interior operate aircraft in a variety of capacities to combat wildfires. Aircraft are integral to firefighting operations and essential for controlling a wildfire.

WILDFIRE SUPPRESSION OPERATIONS

INITIAL ATTACK

Firefighting aircraft respond rapidly to a fire, deploying fire fighters, dropping fire suppressants and performing reconnaissance.

WILDFIRE SUPPRESSION OPERATIONS

LARGE FIRE OPERATIONS

Firefighting aircraft respond rapidly to a fire, deploying fire fighters, dropping fire suppressants and performing reconnaissance.

Fire aircraft provide tactical and logistical support. They deliver personnel, equipment/supplies, gather fire intelligence, and coordinate air operations.

SUPPRESSION ACTIVITIES:
RECOVERY AND REPAIR

Aircraft slow the spread of a fire by dropping wildfire suppressants. Fixed and rotor wing aircraft deploy fire fighters to the scene of an incident.

Fire aircraft provide tactical and logistical support. They deliver personnel, equipment/supplies, gather fire intelligence, and coordinate air operations.

Fixed and Rotor wing aircraft support post-wildfire rehabilitation activities including mapping, seeding and erosion control.

AIR & GROUND OPERATIONS

Firefighting aircraft usually fly a few hundred feet above terrain, in reduced visibility conditions.

Aircrews must coordinate their actions with firefighters on the ground, watch fire behavior, monitor multiple radio frequencies and see & avoid other aircraft.

FIREFIGHTING AIRCRAFT

Contractor-owned, former commercial and military aircraft make up most of the nation's aerial firefighting fleet. A variety of fixed and rotor wing aircraft carry out firefighting missions.

AIRTANKERS

Airtankers drop water, foam and fire retardant to slow the spread of a wildfire. They operate from bases located near areas of high fire potential and normally drop from a height of 150-300 feet above terrain.

AIRTANKERS


COULSON
FLIGHTAWARE


160


487


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N474NA
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N386AC


10 TANKER
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20

AERIAL SUPERVISION

Air Attack

Air tactical aircraft **"Air Attack"** manage the airspace at a fire and coordinate aircraft operations with fire fighters on the ground. The air attack crew consists of a pilot and air tactical group supervisor.

AERIAL SUPERVISION

Lead Plane

Lead planes direct the activities of airtankers, providing verbal descriptions and visual references of where to drop retardant or water.

Lead planes use smoke to mark the start point for an airtanker drop.

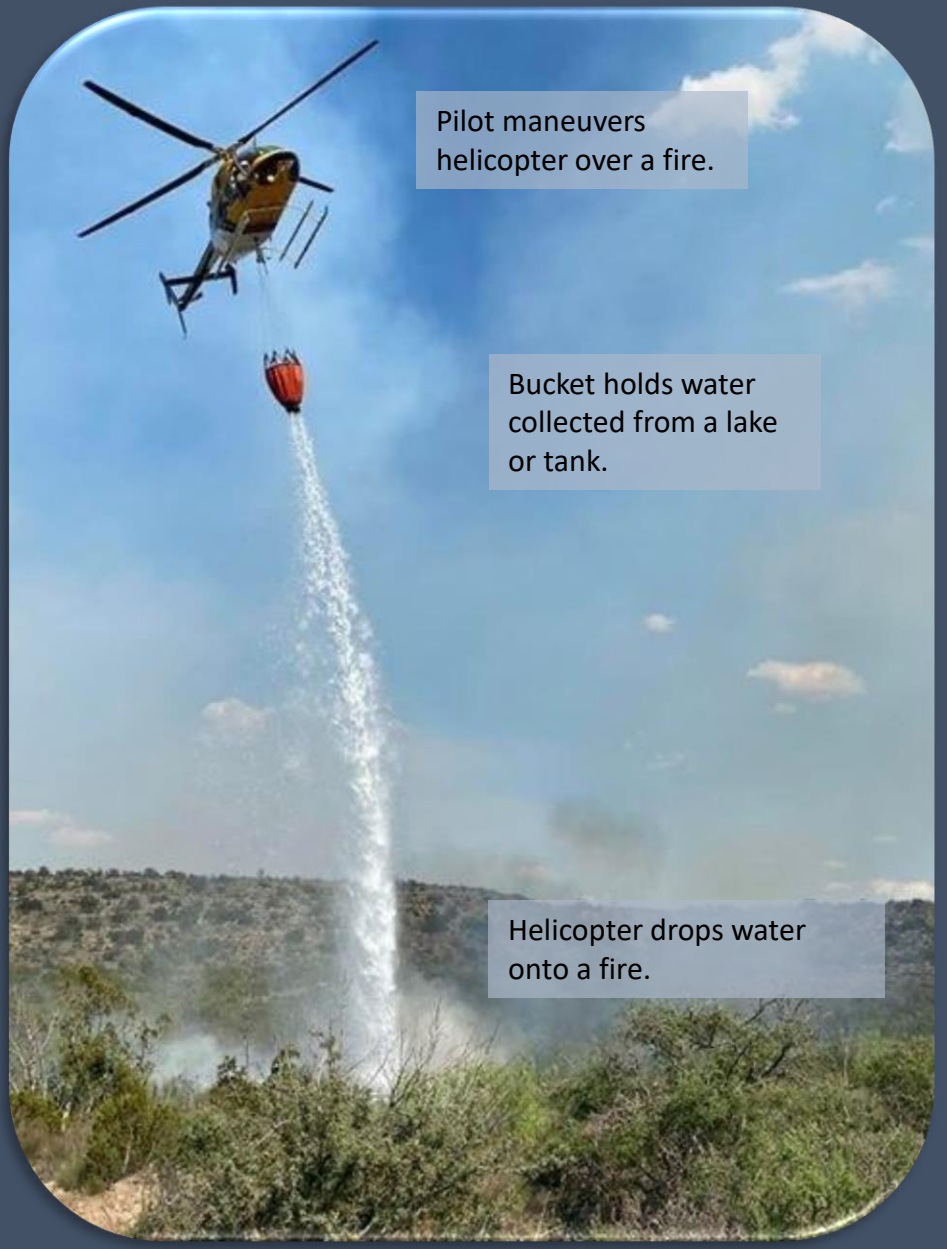
AERIAL SUPERVISION

Aerial Supervision Module

Aerial Supervision Modules (ASMs) combine the roles of Air Attack and a Lead plane into one aircraft; pilots guide airtankers through drops, Air Tactical Supervisors manage airspace and coordinate aircraft operations with firefighters on the ground.

ROTOR WING

Helicopters transport firefighters, move cargo, fly reconnaissance, drop suppressants and perform aerial ignition.



ROTOR WING

JONATHAN CLARK

BILL CAMPBELL

WILDFIRE TODAY

GEORGE CANCIANI

SMOKEJUMPER & INFRARED

Smokejumper

Dehavilland, Dornier, Casa and Sherpa aircraft drop firefighters ‘Smokejumpers’ into a fire by parachute. Smokejumper aircraft support firefighters with low-level Para-cargo drops of equipment and supplies.

Infrared

Aircraft equipped with infrared (IR) sensing technology map wildfires and detect heat or “hot spots” at night. IR information is distributed to incident management personnel and firefighters.

UNMANNED AIRCRAFT SYSTEMS

Unmanned Aircraft Systems (UAS) provide support for a variety of natural resource management activities. UAS map wildfires and provide situational awareness.

Some drones drop ping pong-sized balls filled with combustible material that ignite fires. Use of fire is a tool to prevent large fires from spreading.

UAS loiter above a fire to supply firefighters with mapping and real-time information about fire size & growth, fire behavior, and areas of heat concentration.

AIR OPERATIONS ENVIRONMENT

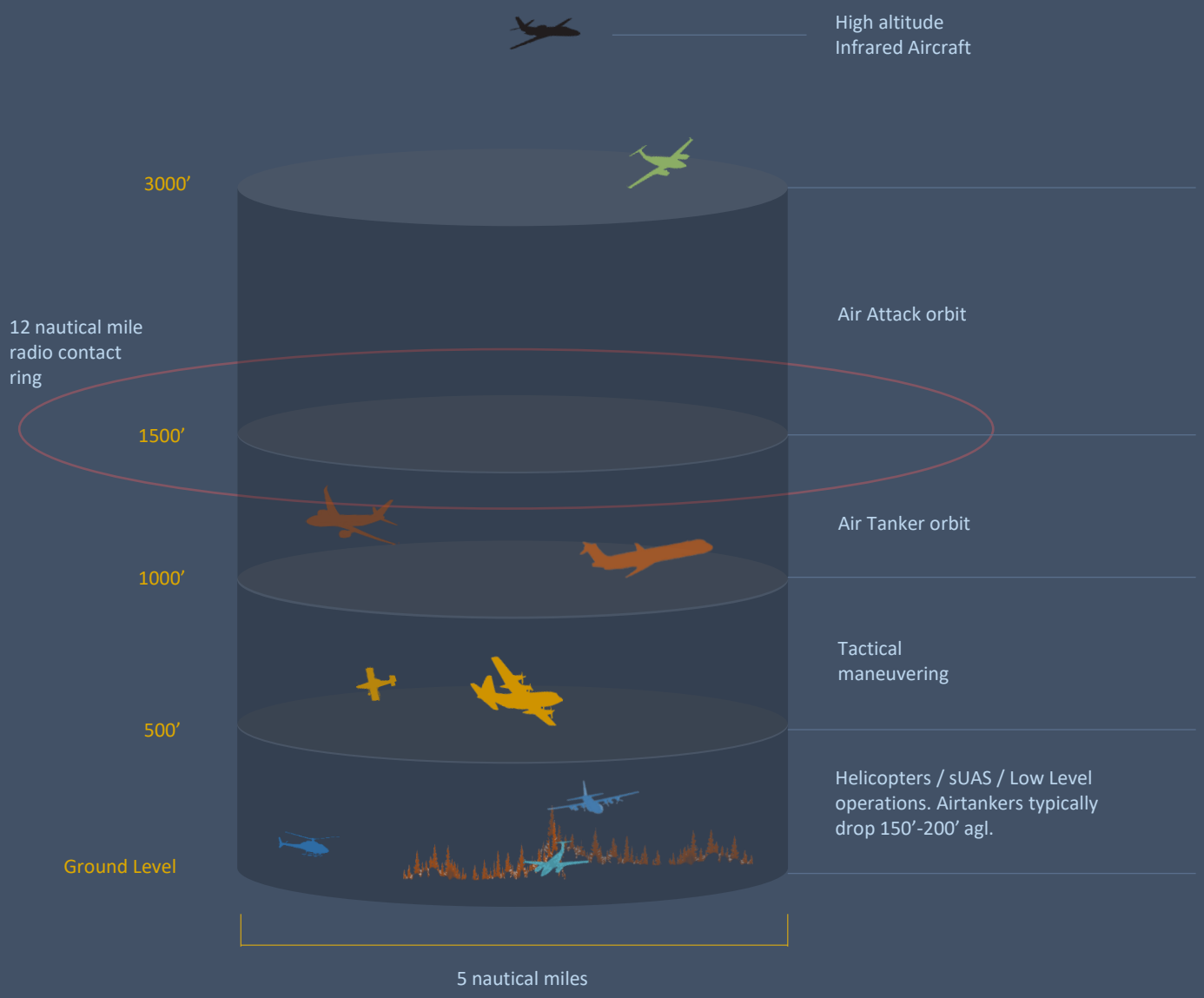
The flight environment at a wildfire is dynamic. Atmospheric conditions, flight activities and airspace requirements contribute to the complexity of fighting a fire from the air.

WEATHER

Wildfires can develop convective columns like thunderstorms. Updrafts and downdrafts from the columns produce extreme turbulence and strong winds. Smoke from wildfires can reduce visibility to near zero.

AIRSPACE

The **Fire Traffic Area** (FTA) provides for separation of fire aircraft over a wildfire. Although designed for wildland firefighting operations, the FTA structure and communications requirements are patterned after class D airspace.

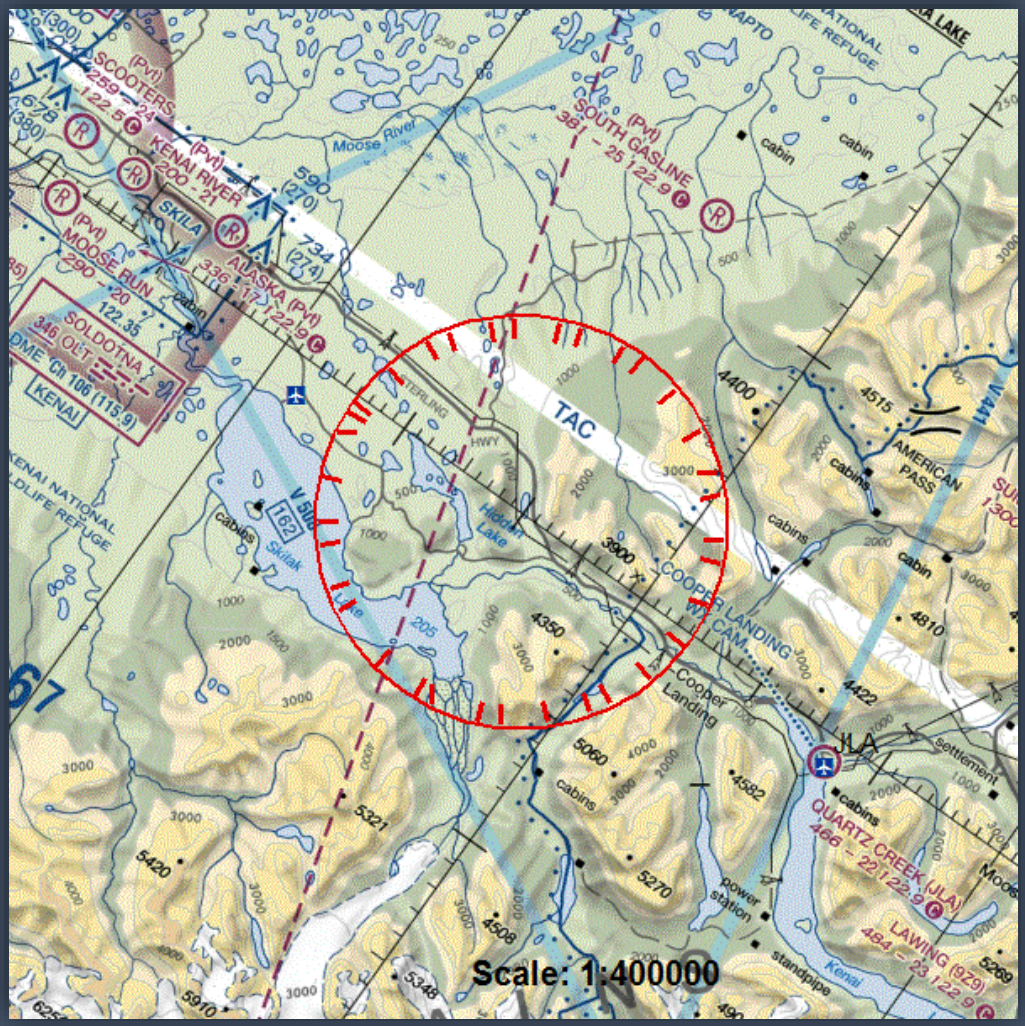


TEMPORARY FLIGHT RESTRICTION

Temporary Flight Restrictions (TFRs) in the vicinity of wildfires are intended to provide a safe environment for aircraft participating in disaster/hazard relief activities.

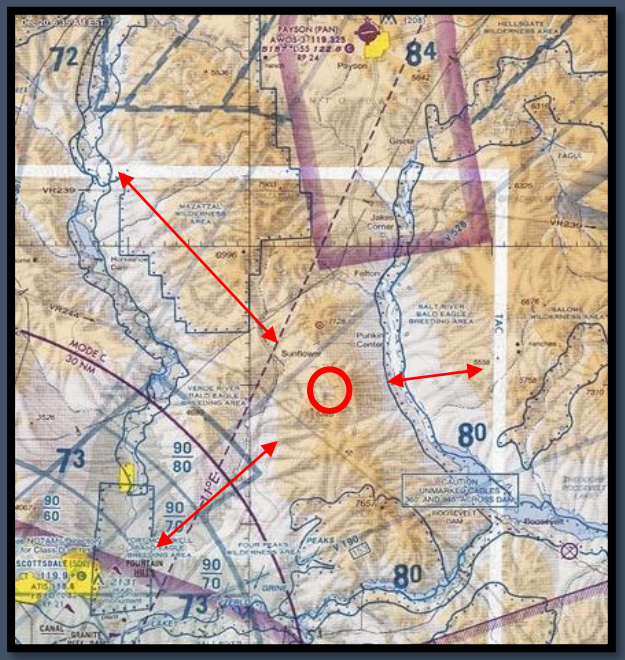
Several considerations occur before a TFR is created, including impacts on military training and commercial & general aviation airspace. Not all fires which utilize aircraft for firefighting have a TFR.

TFRs normally extend up to 3,000 feet above the highest terrain within 5 nautical miles of a fire.



AIR SUPPORT BASES

Air Tanker bases support firefighting operations by supplying airtankers with fire suppressants. Airtankers normally transit between tanker bases and fires at low altitudes.



Temporary helicopter bases are established close to a large wildfire to drop water and transport personnel, equipment and supplies.

AIRSPACE SAFETY

Where is the firefighting aircraft in this picture?

AIRSPACE SAFETY

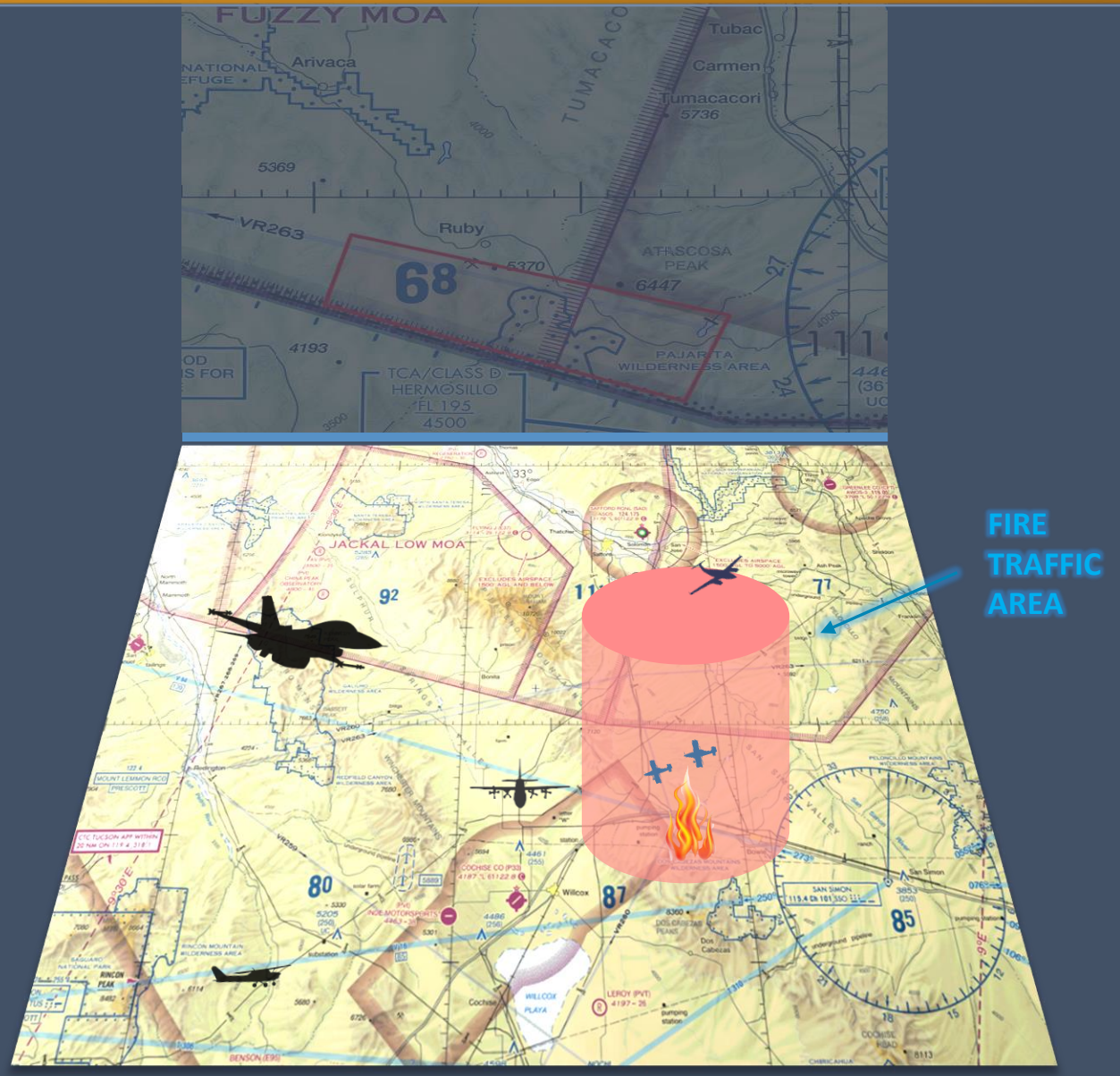
Where is the firefighting aircraft in this picture?

Coronado National Forest-Bighorn Fire, 2020

AIRSPACE SAFETY

Air operations at fires are best described as aerial choreography. Firefighting aircraft (airtankers, helicopters, light fixed wing aircraft and drones) can all be operating at a fire at the same time…

Aircraft participating in disaster relief activities adhere to aerial separation and communication procedures. Firefighting aircraft must coordinate their flight activities with each other, and remain aware of other aircraft entering or flying near the Fire Traffic Area.



WHAT YOU CAN DO

Firefighting aircrews operate aircraft a few hundred to a few thousand feet above ground level. They must coordinate their actions with ground personnel, maneuver around terrain, monitor fire activity and watch out for other aircraft.

You can help our aircrews by checking for firefighting NOTAMs, maintaining a safe distance from smoke and watching for firefighting aircraft transiting to and from fires.

For more information about wildfires and firefighting including how to report a wildfire in Arizona or New Mexico, visit the Southwest Area Coordination Center website: https://gacc.nifc.gov/swcc.

"Only You Can Prevent Aviation Mishaps"