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Commitment to Environmental Excellence - Contrails

Cloud Seeding and Fire Suppression

For a number of years commercial companies have been involved in cloud seeding and fire suppression measures. Cloud seeding requires the release of chemicals in the atmosphere in an effort to have water crystals attach themselves and become heavy enough to produce rain. The Air Force does not have a cloud seeding capability.

Fire suppression involves dumping chemicals onto a fire using cargo-type aircraft or helicopters. The 731st Airlift Squadron assigned to the [302nd Airlift Wing](#), Peterson Air Force Base, CO., is trained in the use of modular airborne fire fighting systems that help firefighting efforts of the U.S. Forest Service by dropping retardant chemicals directly onto fires. The unit's C-130s are loaded with a system designed to airdrop fire-retardant chemicals used in fighting forest fires and fertilizing the forest to generate quick regrowth. The 302nd AW has conducted firefighting response in Colorado, California, Oregon and Idaho.

U.S. forest fires generally occur in desolate, almost inaccessible geographical areas. The U.S. Forest Service turned to air power to help its ground fire fighting units quickly contain and suppress these fires. Over the years, the forest service has developed a highly effective air-attack organization and air tanker fleet to deal with the forest fire emergency.

In 1970, however, numerous catastrophic forest fires erupted in southern California, severely overloading the air tanker fleet's ability to cope with them all. This led to several U.S. Congressmen requesting the U.S. Air Force help the forest service by making military aircraft available as a back-up measure. This in turn led to the development of the Modular Airborne Fire Fighting System (MAFFS). The system is designed to quickly adapt military C-130 aircraft from a military role to a fire-suppression role.

Since 1974, the U.S. Air Force Reserve and Air National Guard units strategically located near high-incident forest fire areas have been equipped with these MAFFS units, and have sent selected aircrews to the aircrew training school for instruction in forest service air operations and procedures.

The MAFFS System is a modular, reusable airborne system for deploying water and fire retardant chemicals from aircraft in flight. It consists of seven airborne modules and one ground air compressor module. The system can be loaded on a C-130 aircraft in two hours, and filled with retardant and compressed air in 15 to 20 minutes. The system is self-contained and requires no aircraft modifications. Each system weighs 10,500 pounds empty, and has a capacity of 2,700 gallons.





The entire load of retardant is discharged over a fire in 6 to 8 seconds.



Other AFRC aircraft shuttle Forest Service personnel and equipment to fire areas when the emergency requires a swift deployment to the fire line. This increased mobility allows more efficient use of Forest Service resources.

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