



Contents

[Introduction](#)

[Background](#)

[Contrail](#)

[Wingtip](#)

[Condensation](#)

[Trails](#)

[Exhaust Gases](#)

[Chaff and Flares](#)

[Aerial Spraying](#)

[Cloud Seeding
and Fire
Suppression](#)

[In-flight
Emergency Fuel
Release](#)

[The "Chemtrail"
Hoax](#)

[Link to Related
Sites](#)

[References](#)

[Layman's Library](#)

Commitment to Environmental Excellence - Contrails

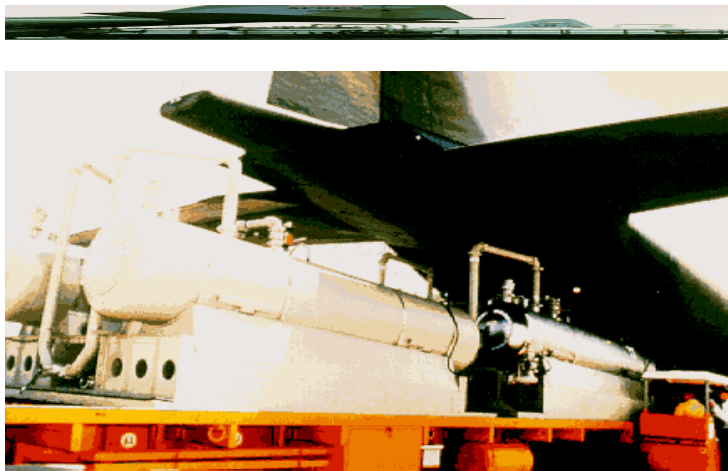
Aerial Spraying

There are some specific uses of commercial, private, and military aviation where chemicals are introduced in the atmosphere. The most common association of aerial chemical release is spraying for insects, either as crop dusting or mosquito prevention measures. These activities are typically performed at low altitude levels and produce a mist spray that drops to the earth's surface.



The only unit in the Air Force capable of aerial spray operations to control disease-carrying pests and insects is the AFRC's [910th Airlift Wing](#), Youngstown-Warren Air Reserve Station, Ohio. The aerial spray mission uses four specially configured C-130 Hercules shown below. Aerial spraying enables large parcels of land or water to be treated safely, quickly, accurately, and cheaply. This is the only fixed wing aerial-spray capability in the Department of Defense.





The mission started back in World War II, when legions of American GIs fell victim to malaria and dengue fever, diseases spread by mosquitoes. The mission was taken over from the active force in 1973. Although most of the unit's missions are initiated by the Department of Defense, its services are also requested by local, state and other federal agencies and coordinated the Center for Disease Control. The most common missions flown are for mosquito, sand flea and weed control. Several states have also requested support to combat grasshoppers and locusts. Aerial spray missions have been flown in Puerto Rico, Panama, Guam and the Azores.

The chemical compounds used for mosquito control are EPA controlled and the Air Force uses two primary brands; Dibrom and Anvil 10+10. Dibrom is manufactured by AMVAC Chemical Corporation and is classified as a Naled compound. Naled is an organophosphate insecticide that has been in use since 1959. It is used primarily for controlling adult mosquitoes but is also used on food and food crops, greenhouses and pet flea collars. Naled is applied using Ultra-Low Volume sprayers which dispense very fine aerosol droplets which kills the adult mosquito on contact. Naled is applied at a maximum aerial spray rate of 0.8 ounces of active ingredient per acre. Anvil 10+10 is manufactured by Clarke Mosquito Control Products, Inc and is a Sumithren, also known as a Synergized Synthetic Pyrethroid. Anvil 10+10 is applied using Ultra-Low Volume sprayers at a maximum aerial spray rate of 0.62 ounces of active ingredient per acre.

The chemical compounds used for herbicide weed control are EPA controlled and the Air Force uses Dupont Krovar I DF and Dow Agro Sciences Tordon K. Krovar I DF comes in granular form, is mixed with water and applied as an aerosol to control annual weeds at a rate of 4-6 pounds mixed with 40-100 gallons of water per acre. Tordon K is used as a herbicide to control broadleaf weeds, woody plants, and vines on non-crop areas such as forest planting sites, industrial manufacturing sites, rights-of-way such as electrical power lines, communications lines, pipelines, roadsides, railroads, and wildlife openings. Tordon K is applied at a maximum of 2 quarts per acre.

The 910th Airlift Wing has formed an Oil Dispersant Working Group, and is working with industry and government agencies to test aerial spray methods of controlling major offshore oil spills in coastal waters of the United States. The unit has six **Modular Aerial Spray Systems (MASS)** and four aircraft modified to accept the MAAS. Each MASS has a

2,000 gallon capacity and flow rate are set at 232 gallons per minute. The aircraft flies at 200 Knots Ground Speed at about 100 feet which covers a swath width of 100 feet for an average application rate of flow rate of 5 gallons per acre (variable 3-15 gallons per acre). Total spray-on time for 2,000 gallons lasts about 8 minutes and 30 seconds.

Photographs which show military aircraft with sprays coming from unusual locations on the aircraft are usually re-touched photos (a process that is easy to create using common computer programs).

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[Top>](#)