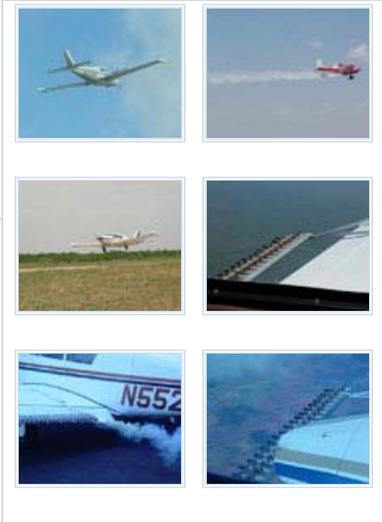




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05:38:02 GMT



## ▣ Aircraft

The SOAR fleet of aircraft includes twin-engine aircraft and single engine aircraft capable of glaciogenic and hygroscopic seeding at cloud base and at cloud top. Among the fleet of aircraft, SOAR owns and operates a cloud physics aircraft twin-engine turboprop Piper PA31T Cheyenne II. Most of the aircraft are based in Plains, Texas and in other locations where cloud seeding or research operations are underway. The aircraft are equipped with ejectable flares for cloud top seeding and with wing-mounted trailing-edge burn-in-place flare racks. In addition, specialized duster aircraft are used for dry powder hygroscopic seeding. These duster aircraft have the capacity of dispensing finely-ground salt-seeding material at cloud base at a specified and adjustable rate and the capability of carrying, and releasing, a tracer gas such as sulfur hexafluoride gas. The aircraft are certified with a current annual and certificate of airworthiness; certified of flying in Instrument Flight Rules (IFR) conditions; equipped with navigation and communication radios, as well as Geostationary Positioning Satellite (GPS) receiver with latitude, longitude, ground speed, altitude and seeding mode logging and tracking capability (with data transmitted to the radar central operations center in real time). The Thunderstorm Identification, Tracking, Analysis and Nowcasting (TITAN) radar display package tracks these aircraft on the Plan Position Indicator (PPI) display and aids the meteorologist in making decisions in real time and post-operations analysis.

The pyrotechnics used for seeding at cloud base and on top are usually referred to as burn-in-place flares and ejectable or droppable flares respectively. Reports from cloud chambers show that Concho Cartridge flares are producing about  $10^{13}$  ice-nuclei per liter at 5 °C, and about  $2 \times 10^{13}$  at -5 °C.