aerospace notes

METEOROLOGY

Warm Fog Dispersal Studied

An airline-sponsored program to test promising new methods of fog dispersal has begun in Sacramento, Calif., where there is much warm fog during winter.

The program will explore methods of seeding warm fog with newly developed materials, which cause water droplets to combine into larger drops that fall out of the sky. They will be dispensed into the fog both from aircraft and from ground equipment.

Warm fog, with water droplets warmer than 32 degrees F., has so far resisted efforts to find a practical and economic dispersal technique. Cold fog, however, has been successfully dispersed by seeding with dry ice pellets dropped from light planes.

The project, conducted by World Weather, Inc., of Houston, Tex., is being sponsored by the Air Transport Association, an organization representing U.S. scheduled airlines.

Among the materials being tested is one, made by Dow Chemical Co. of Midland, Mich., which showed considerable promise during the last seeding run of 1966-67 ATA-sponsored tests in Houston. The material, whose composition is still a company secret, can be applied either in powder or liquid form. Chemically, the material is a polyelectrolyte; it works by creating an electric charge in the tiny fog droplets, causing them to combine into larger ones. The smaller numbers of large droplets have increased space between them, thus offering improved visibility.

EDUCATION

Space Age Dictionary

The complex language of space is being boiled down by Oregon State University, Corvallis, into a 600-term dictionary that even elementary students can understand.

More than 300 textbooks and magazine articles have been combed for common space terms read by students in grades four through eight. Once the selected terms are examined for scientific accuracy and reviewed by the OSU School of Education, the dictionary will be tested in six Oregon schools.

The dictionary is being developed under contract from NASA, which will illustrate and publish it.

COMMERICAL AVIATION

Nose Loaders for Air Travelers

To handle increased passenger loads on upcoming giant airliners such as the Boeing 747 and the supersonic transport, United Airlines is considering the use of "nose loaders," which would allow aircraft to nose into terminals, saving valuable ramp space taken by present parallel parking methods.

The nose loader would extend from the terminal and mate with four forward passenger doors on the 747, and would be compatible with other aircraft. Even with the nose loaders, however, says United, additional gate lobby construction will still be needed to process the 350 to 400 passengers for each airplane.

MANEUVERING

Workhorse, Manned or Unmanned

A device that could perform odd jobs in space operated either by an astronaut or by remote control from a parent vehicle, is being evaluated by Bell Aerosystems Co., Buffalo, N.Y., for the Air Force Systems Command.

Called a dual-purpose maneuvering unit, the device would incorporate a television camera, stabilization and control systems, propulsion systems, life support, communications equipment and radar. An astronaut operating the device would control it through two pistol grip handles connected to the propulsion jet nozzles. For remote control, the operator would use the device's TV camera as his "eyes" to guide him in such missions as assembling a station in space, repairing a space vehicle or helping with docking maneuvers.

INSTRUMENTATION

Digital TV for Space

A spacecraft television system, designed to monitor the deployment of the 750-foot antennas of NASA's Radio Astronomy Experiment Satellite, has been developed by Radio Corporation of America's Astro-Electronics Division, Princeton, N.J.

At the heart of the system is an electronic converter that will enable the device's two TV cameras to send data to earth in digital form to be inserted directly into computers for instant processing. As the four main antennas of the RAES unroll in space, the TV system will observe any movements caused by gravity gradients, pressure from the solar wind, thermal differentials and other forces. Three-inch spheres at the ends of the antennas will serve as targets for the cameras.

The RAES, which will study space radio signals at wavelengths that cannot penetrate earth's atmosphere, is scheduled for launch in 1968.

PROPELLANTS

Catalyst for ABMs

A new propellant catalyst for use in high-acceleration rockets such as antiballistic missiles has been developed by United Technology Center, Sunnyvale, Calif.

The material, says UTC, is the only known catalyst which meets all "the stringent requirements for production, storeability and performance" in composite solid propellants for high acceleration use.

Called HYCAT, the material is an organo-iron compound that is nonexplosive and has low volatility. HYCAT has been tested in actual rocket firings and is reported to be "actually safer than some of the less effective agents now being used in operational missiles." It was designed for a temperature range of minus 65 to plus 200 degrees F.