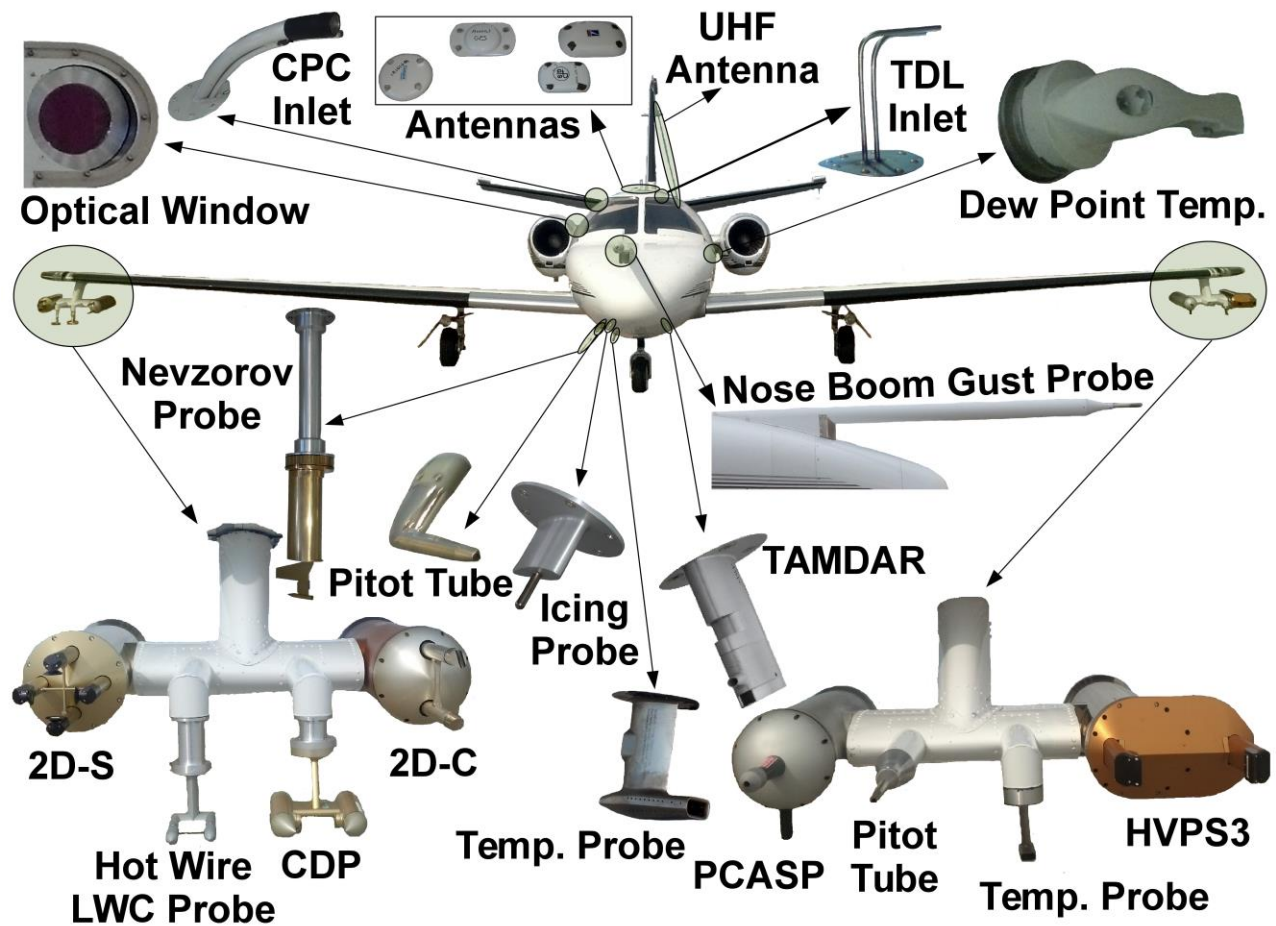

UTC 2015: Citation Research Aircraft Operational Plan



Prepared by:
The University of North Dakota and
United Technologies Corporation

Updated: 7 July 2015

1. Project Objectives

Test optical ice detector (OID) instruments in large liquid water clouds (size of water droplets greater than 100 μm), small liquid water clouds (size of water droplets less than 100 μm), and mixed-phase clouds (large and small hydrometeors mixed together).

2. Institutional Participants

- University of North Dakota (UND)
- United Technologies Corporation (UTC)

3. Area of Study

The study area is centered on KGFK airport at latitude of 47.9492484 and longitude of -97.1761084.

4. Schedule

The intensive operations period (IOP) for UTC 2015 is scheduled for 6 July – 24 July 2015.

5. Project Coordination

The success of a field project depends on close coordination of personnel involved at the different facilities (forecast office, radar facility, and aircraft facility). The key functions of personnel involved in the project are briefly described in this section.

University of North Dakota Team

- David Delene, Flight Scientist (delene@aero.und.edu, Cell: 507-533-5363)
- Jonathan Sepulveda, Research Pilot (jsepulveda@aero.und.edu, Cell: 262-620-1230)
- Joe Moen, Research Pilot (jmoen@aero.und.edu)
- Jacob Boyd, Research Pilot (jaboyn@aero.und.edu)
- Nicholas Gapp, Flight Engineer (nicholas.james.gapp@my.und.edu)
- Jamie Ekness, Flight Engineer (jamie.ekness@my.und.edu)

6. Flight Profiles

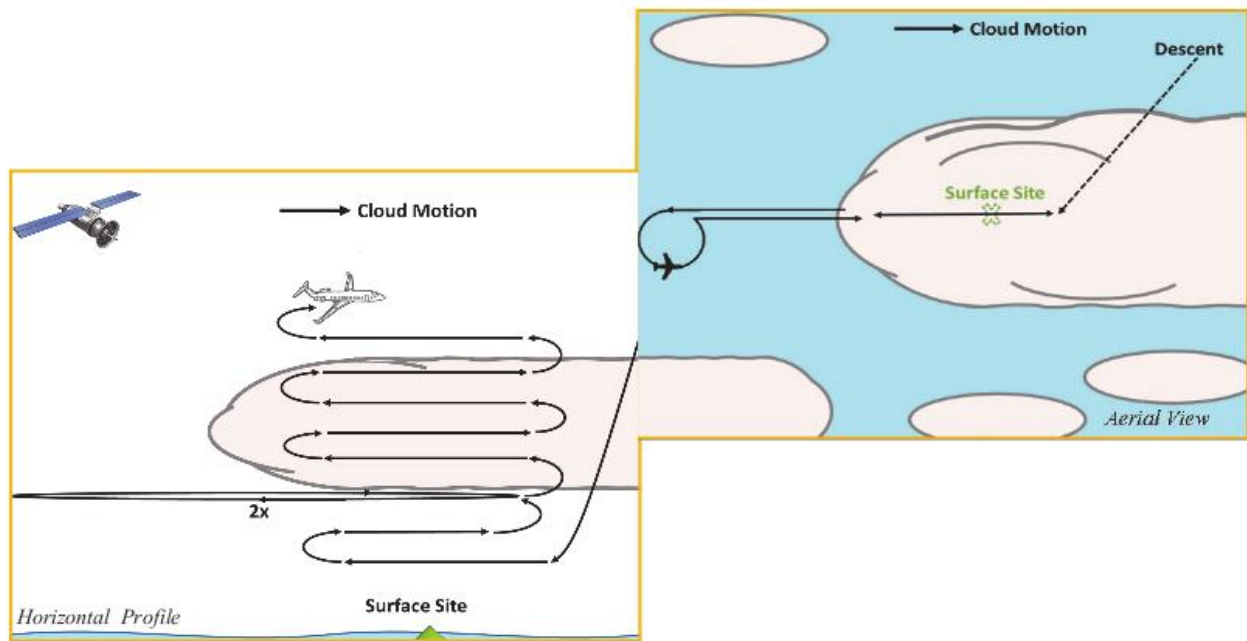


Figure 1: Flight profile for sampling stratus clouds to find small liquid water drops and mixed-phase clouds. The Citation Research Aircraft samples at 160 knots and does 500 ft/min ascents to provide good instrument measurement performance. Aerosol measurements will not be taken below the cloud base since limited flight time is available.

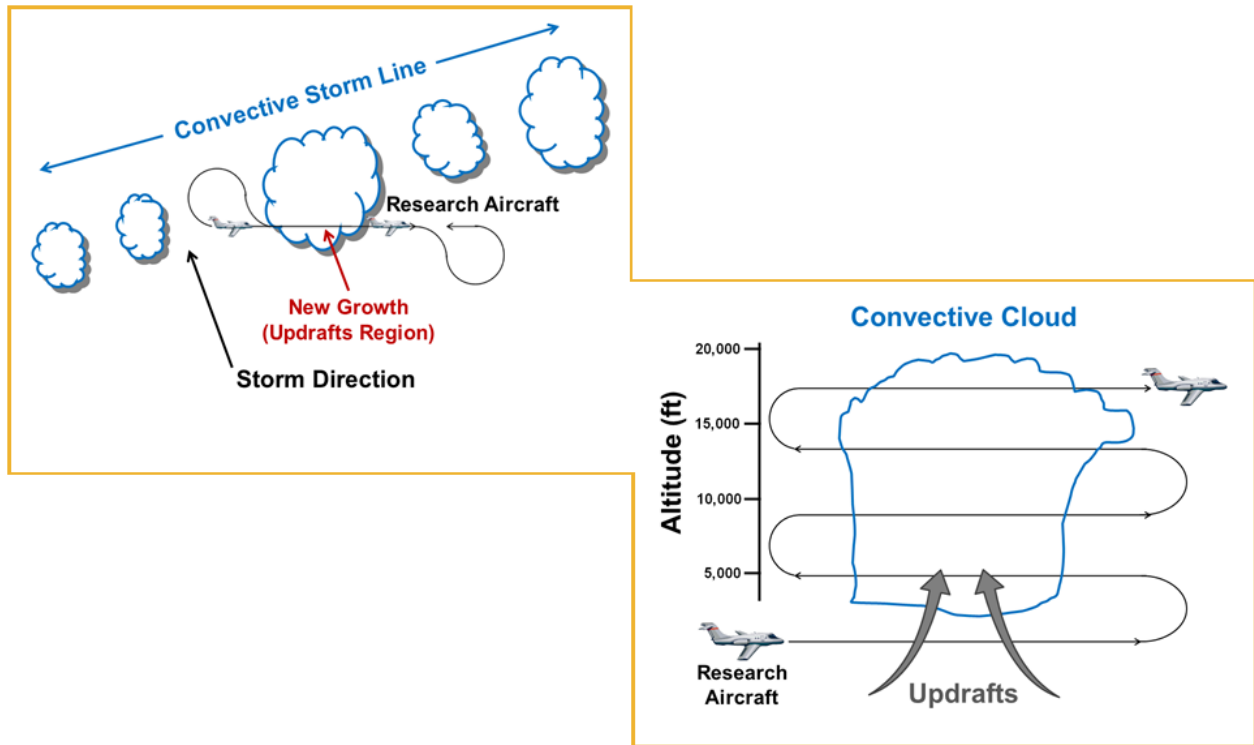


Figure 2: Flight profile for sampling cumulus clouds to find a mix of large and small liquid water drops. The Citation Research Aircraft samples at 160 knots and does 500 ft/min ascents to provide good instrument measurement performance.