

Key Findings of Thailand Cloud Physics Observation
Warawut Khantiyanan
Bureau of the Royal Rainmaking and Agricultural Aviation
In Kasetsart University Campus, Phaholyotin Rd., Chatuchak,
Bangkok 10900, Thailand
wathana@chmai.loxinfo.co.th

The research effort under the BRRAA (Bureau of Royal Rainmaking and Agricultural Aviation.) is known as the Applied Atmospheric Resources Research Program (AARRP). The goal of the program is to upgrade the capability to conduct a scientifically sound demonstration project to quantify the water augmentation potential of rainmaking in Thailand.

During the 1997 field season, the BRRAA acquired two King Air B-350 cloud physics aircraft. The instrumentation on the King Air cloud physics aircraft included, among other things, FSSP, 2DC and 2DP probes for the measurement of cloud hydrometeors, a King hot-wire device for the measurement of cloud liquid water content, a Ball variometer for the estimation of cloud updrafts, temperature and dew point probes, and a GPS navigation system; all of which were recorded on a data acquisition system with real-time display capabilities. In addition, the aircraft was equipped with a forward-looking video camera. During 1997, one of the aircraft also contained a PCASP probe and University of Wyoming Cloud Condensation Nuclei (CCN) counter which NCAR provided on a short-term loan. During 1998, the BRRAA acquired University of Wyoming CCN counters for both aircraft.

In this presentation the following key findings of airborne cloud physics measurements under the AARRP during 1997-1999 are reported: the variability of the CCN measurements and aerosol particles, the rain spectra below cloud bases, and the cloud profiles including updrafts, supercooled liquid water content, and cloud droplet concentrations.