T-28 Pilot Report

Flight: 624
Date: 05251994
Flight Time: 18:21 – 19:42 CDT
Pilot: Dan Custis
Controller: Dennis Musil
Location: Norman, OK
Mission: Research flight

Computer Time	Video Time	Comments
17:24		Looking at a storm 70 nmi NW from Cimarron radar
		Decide to penetrate behind main reflectivity core
		Cimarron radar clock ~ 17 sec ahead of WWV
18:09		Storm reflectivities declining a bit
18:15		Original storm decaying
18:21		Take-off; heading for position 60 nmi range at bearing 292^{o} from Cimarron
18:27		Lose control of Cimarron radar; cannot change scan parameters
		RADS (system for putting aircraft position on radar display) hangs
18:24:26 – 18:31:02		Field mill test
18:31		15 nmi SW of Cimarron radar
18:43		Finally made radio contact. Vector Dan to target storm.
18:51:56		In-cloud, Pen 1; Altitude 10 kft; 040^{o} hdng; 320^{o}/50 km from Cimarron radar
18:52		Ltng
18:54		Hitting main echo
18:54:56		Light turbulence
18:56		Pretty much through main echo
18:56:34		Clear below and clear around. Decent cloud at 12 o'clock
18:58:04		Out-of-cloud
19:00:30		In-cloud Pen 2; altitude 12 kft; hdng 230^{o}; 350^{o}/62 km from Cimarron
19:01:20		P-static
19:03:47		Out-of-cloud
19:04		Has come back through to SW side of storm at 12 kft
19:05		Rolled out on 050^{o}; going back through at 12 kft
19:06:26		In-cloud Pen 3; altitude 12 kft; 350^{o}/65 km from Cimarron; light turbulence
19:07:33		P-static; light turb
19:08:07		500 ft/min up; lgt turb; mdt precip
		Ltng; lgt precip; p-static; 500 ft/min up and down
19:11:20		Out
19:14		Rolling out on hdng 240^{o} to go back through at 14 kft
19:14:26		In-cloud Pen 4; 355^{o}/65 km from Cimarron; mdt turb; p-static
19:16:35		Turb
19:17:		Hvy turb; ltng; 800 ft/min up
		Mdt turb; 1000 ft/min up;1500 ft/min up
19:19:20		Out; returning to base
19:42		land

NOTES

Weather
Dan did not clearly recognize hail on the canopy, but there could have been some. The foil impactor and 2D-P observed large concentrations of particles on all but the first pass; however, there was no sign of really large particles (hail). Clouds got progressively denser and more vigorous on the later higher passes. The storm studied, or one very close to it, was producing predominantly positive polarity cloud-to-ground lightning at the time the mission began.

Maintenance

Operations
Cimarron radar display thought to be underestimating reflectivity by 5-7 dBZ.