

PREDICT NSF/NCAR GV



Jørgen Jensen & RAF staff
NCAR/EOL/RAF

GV Resource Allocation

GV deployment days 48 days (15 Aug – 30 Sep)

GV flight hours 200 hours

Dropsondes 500

Double crew 1 Sep – 15 Sep

Hurricane evacuation Additional funds available

GV project managers Jørgen Jensen 15 Aug – 15 Sep

Allen Schanot 1 Sep – 30 Sep

GV Payload and responsible staff

Dropsondes

MTP

Fast ozone, TDL

CVI

3V-CPI (tentative)

All-weather winds (tentative)

SID-2

CN, UHSAS, CDP

10 μ m-2DC, 25 μ m-2DC

KLWC, RICE

dGPS – Omnistar

State param, wind, turb.

Digital video

GPS water vapor profiler (?)

Terry Hock

Julie Haggerty

Teresa Campos

Cindy Twohy

Jørgen Jensen

Allen Schanot

Dave Rogers

RAF staff

RAF staff

RAF staff

RAF staff

RAF staff

RAF staff

Jennifer Haas

GV Schedule (tentative)

3V-CPI testing	15 Jun – 30 Jun
PREDICT GV upload	1 Jul – 31 Jul
Test flights (3)	1 Aug – 11 Aug
Ferry to St. Croix	12 Aug
Set-up days	13 Aug – 14 Aug
First mission flight	15 Aug
Double crew mission days	1 Sep – 15 Sep
Last mission flight	30 Sep
Ferry to JeffCo	2 Oct
Download	3 Oct – 10 Oct

GV Crew Duty Limits

Any 24-hour period	10 flight hours
Any consecutive 7 days	40 flight hours
Any 30-day period	120 flight hours
Consecutive working days	6 days
Crew duty period	14 hours
Minimum crew rest period	12 hours
Consecutive maximum duty days	2 days

GV Intensive Operations Period

Dates 1 Sep – 15 Sep

EOL provides double crew

PI group must provide double crew as well

GV will only fly around strong convection during daylight

GV can take off before dawn and land after darkness

Noon-time changeover will take approx. 2 hrs

Re-fuel, crew change, etc.

GV Staffing Of Flights

2 Pilots

1 Technician (data system etc.)

1 Mission Coordinator (EOL scientist)

1 Trace Gas Operator

1 Dropsonde Operator

1 CVI Operator

1 PI

2 additional seats Water vapor profiler, 3V-CPI, other
 instruments, software,
 other from PI group

GV Weather Limitations

Hail/graupel	Avoid, but not likely an issue
Frozen large drops	Avoid high echo
Turbulence	Potential high-altitude risk; highest updraft at high altitudes; avoid high echoes and add distance
Lightning	Some risk; lightning system; also data issues
Wind shear	Not likely to encounter strong shear
Aircraft icing	Not likely; exit if encountered
High IWC, small ice	Potential risk in anvils near convective core; engine & pitot tubes
Summary:	Avoid convective echoes (level 2 or greater) by 10-20 miles, depending on pilot's discretion; limited other sampling may be possible; avoid +5 to -14 degC (frozen drops)

GV Operational Limitations

Flight tracks	Close real-time coordination with FAA; expect delays for altitude changes, etc.
Flight altitudes	30 kft – 45 kft; sometimes in anvil
Dropsonde release	Above 40 kft: 4 per hour, max. Below 40 kft: More frequent
Dropsonde frequency	Normally every 10 minutes; Sometimes 4 separated by 5 minutes
Clearance for drops	ATC approval required; discuss with Hank Tracy and John Mineo, FAA
Other research aircraft	Ground and air coordination; satcom data, chat, etc.

GV Operational Limitations (con.)

Dropsonde releases based on fixed positions –

What if the aircraft has to divert around convection, thus having different dropsonde locations and release times?

ATC to look at aircraft flight tracks using satcom and GoogleEarth display? Other display?

Satcom data transmission is very reliable, but not 100%.

RAF pilot's representative: Lowell Genzlinger here at meeting



Questions?