

PECAN Aircraft Coordination Update (Plans and Challenges)

PECAN UW, NASA and NOAA
Aircraft Facilities
PECAN Planning Meeting
2-3 March 2015
Presented by Jim Moore

PECAN Flight Schematics: a playbook of flight scenarios

PECAN Project Aircraft
(Identification, and flight characteristics)

Aircraft type	aircraft ID	speed (knots)	typical flight duration (hours)	available research flight hours	Deployment dates (2015)	Aircraft Operations Base
UWKA	N2UW	~167	~4	120	6/1 – 7/15	KGBD or KSLN
P-3	N43RF	~216	5-9	72	6/15 – 7/15	KSLN
DC-8	NASA 817	~447	5-7	45	6/29 – 7/15	KSLN

prepared by Bart Geerts (Geerts@uwyo.edu) and Dana Mueller (dmuelle5@uwyo.edu)
PECAN Project contact person for questions: Jim Moore (jmoore@ucar.edu)

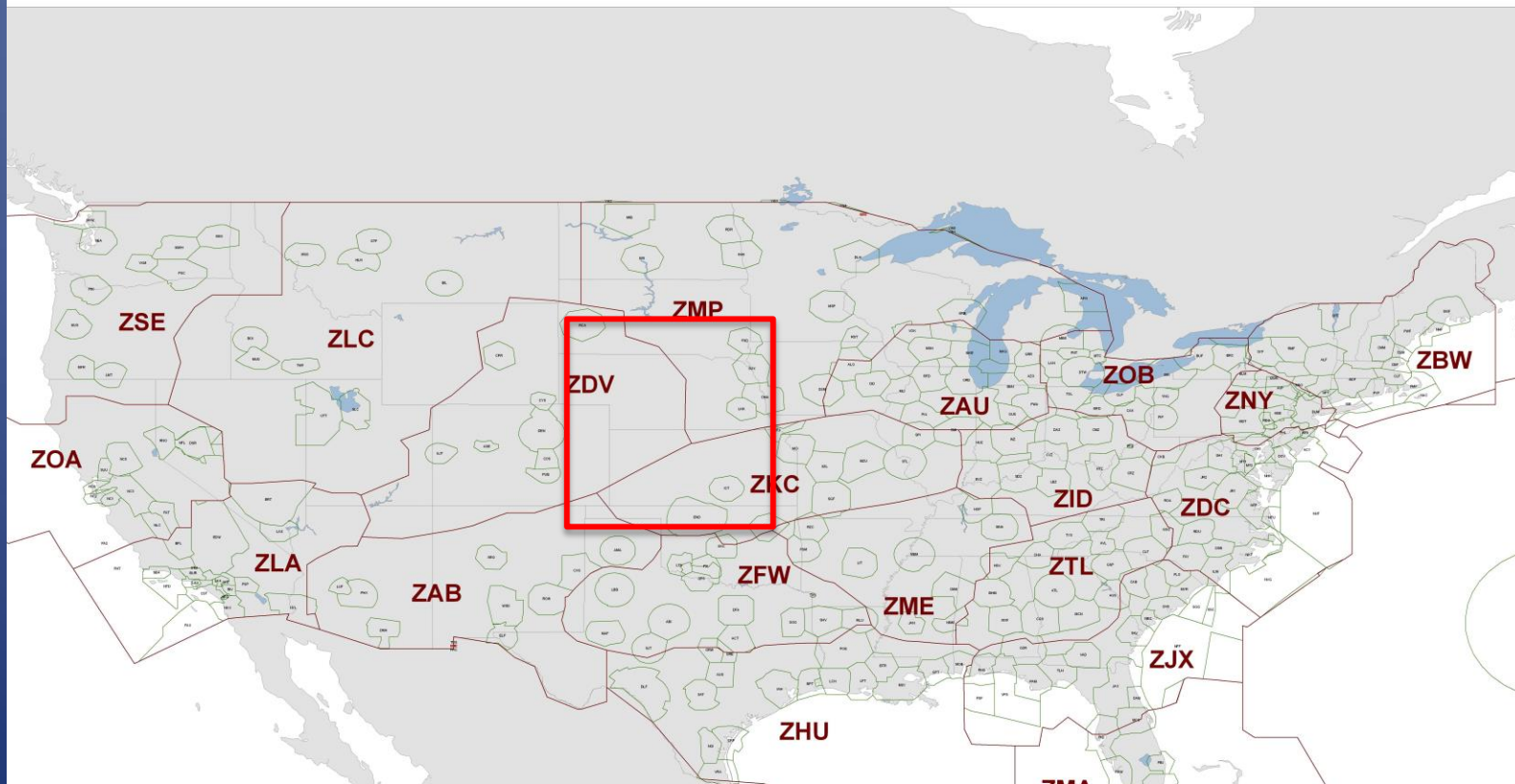
11/09/2014 draft

Three general Mission Types

- Mesoscale Convective System (MCS) and Bore Missions
- Convection Initiation (CI) Missions
- Nocturnal Low Level Jet (LLJ) Missions

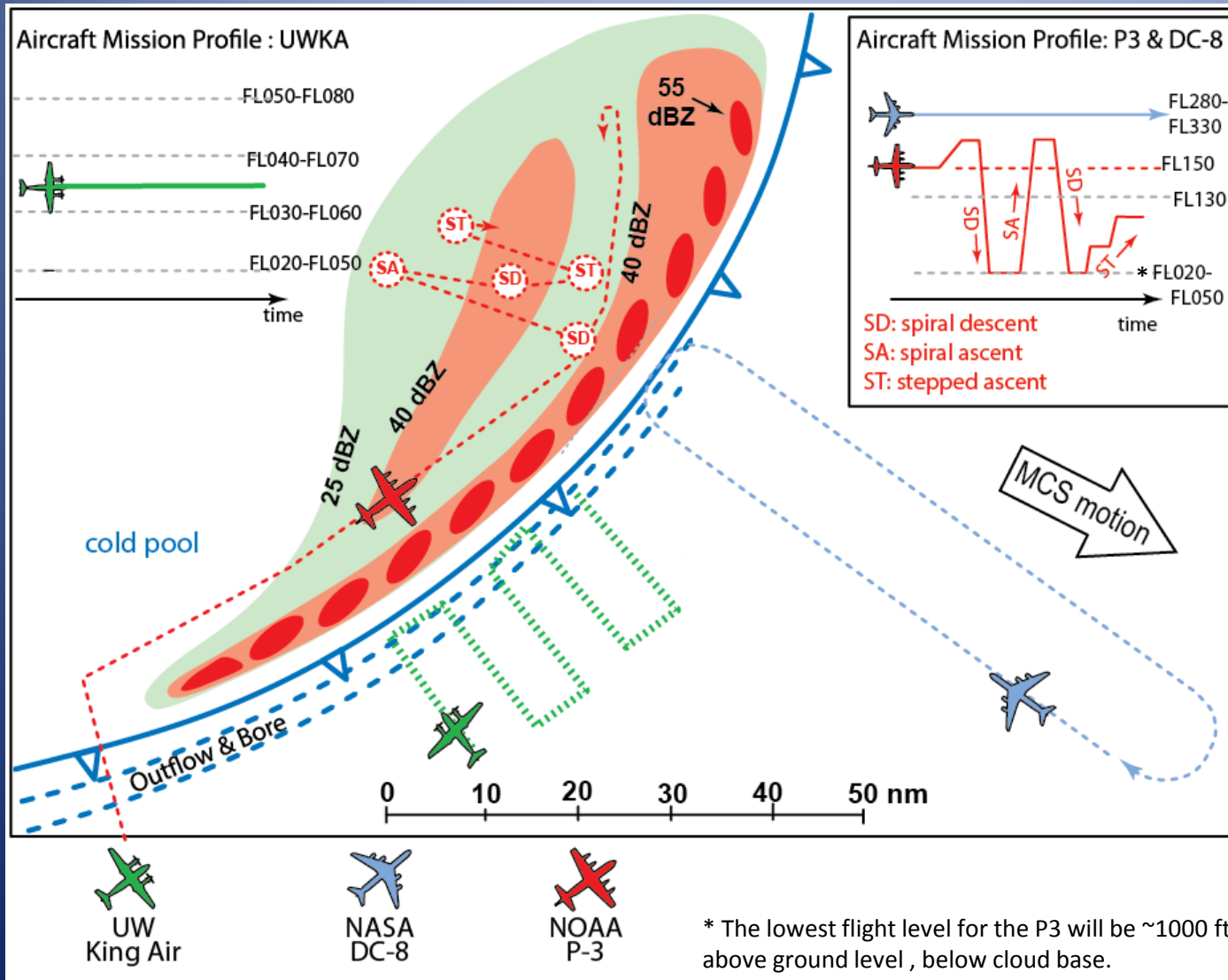
PECAN in the US Air Traffic System

TRACON and ARTCC Boundaries



Proposed PECAN project operations area superimposed on FAA ARTCC/TRACON map. Red box shows potential flight operations area for all project aircraft.

MCS/BORE mission: UWKA Lawnmower + P-3 + DC-8



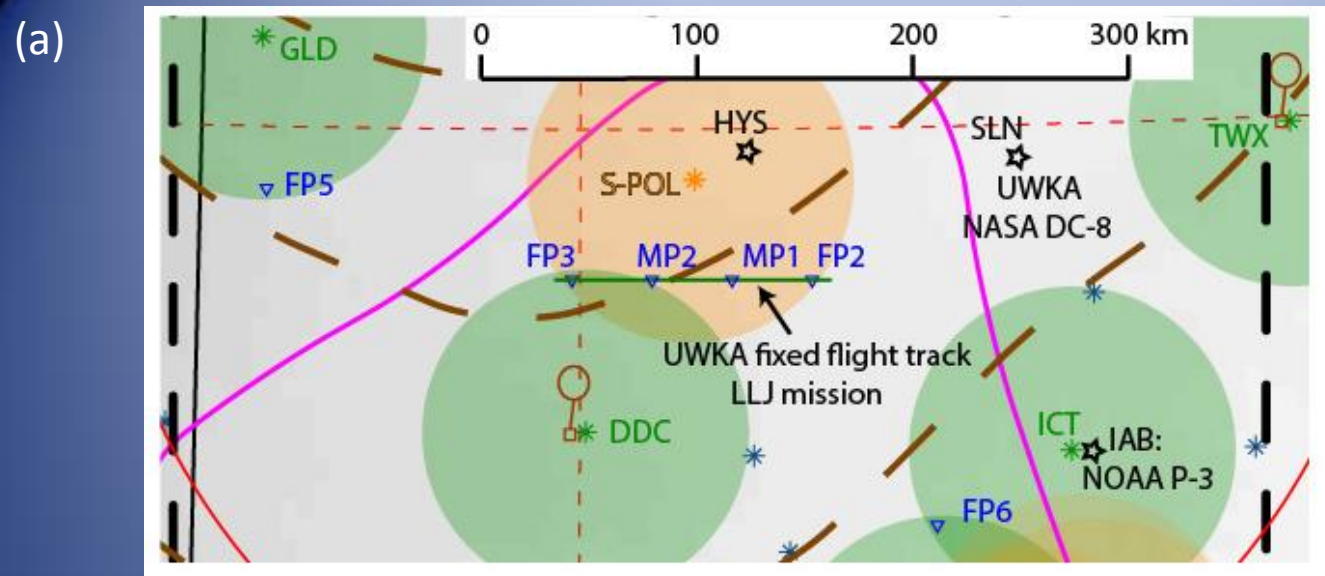
UWKA and P-3 are separated horizontally by a line of thunderstorms.

DC-8 is separated vertically from two other aircraft. DC-8 racetrack width is based on typical aircraft turn diameter, typically 5-6 nm. DC-8 does not penetrate thunderstorms.

DC-8 is separated horizontally from UWKA for lidar eye safety.

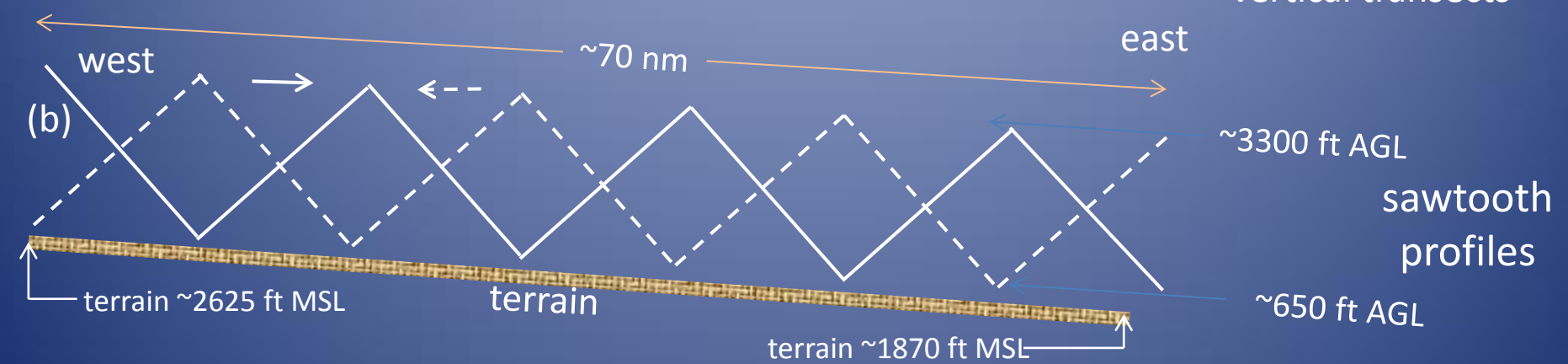
Travel time for the patterns shown:

- UWKA : 44 min
- P-3 : 89 min
- DC-8 (L:70 to 140 nm, 1 loop) : 21-40 min

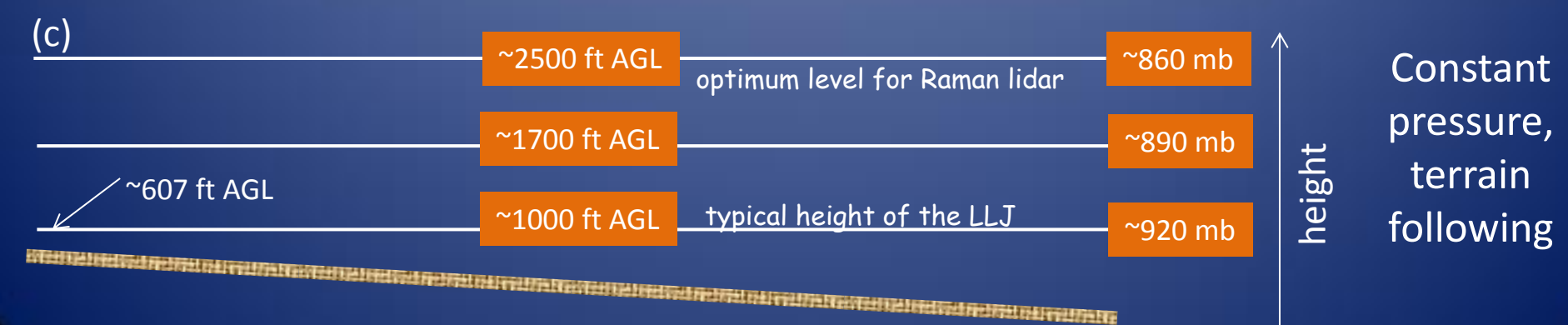


map to be updated
 track waypoints:
 west point:
 east point:

UWKA flight pattern:
 vertical transects



sawtooth
 profiles



Constant
 pressure,
 terrain
 following

PECAN Aircraft Support --Next Steps

- Submission of PECAN aircraft playbook to FAA
- Contact with aircraft facilities
- Receive and respond to specific FAA questions
- PECAN aircraft facility meetings/calls as needed
- FAA to brief centers (ZDV, ZAB, ZMP, ZKC)
- Handle any follow-up questions
- Potential visit to Ft Worth Region
- Develop FAA Center contact list for the project
- Implement any required FAA alerting strategy (beyond standard flight plans)

*Completed

Some Topics for Discussion

- Coordinate Letters within FAA and with alert project requirements
- Ground based lidars and tethersondes
- Aircraft proximity to surface sounding launches
- Forecast/nowcast for Alternates during flight missions
- Details of timing of mission planning for aircraft
- Aircraft intercomparisons (aircraft and with ground PISA sites)
- Salina Media Day

Bottom Line

Aircraft component of PECAN is in pretty good shape—

For the shape we are in!!