

Radar LOG

Radar Unit:SMARTR-1

Site: K5

Mission Type:
PERILS IOP 4

Operator(s): Carrie/Prosser

UTC Date: 13 April 2022

Lat (dec. degs)
36.267082 N

Long (dec. degs)
90.157888 W

Alt:
80.09 m

Orientation (deg): 271

Clutter scan
performed? Yes

Radar Ops Time (UTC)

Note beginning (B) and end (E) times of ops; list periods of down (D) time along with reason for failure, and other problems.

Radar clock behind UTC by 3502 seconds starting at 2053 radar time. Not corrected, will fix in post processing.
Driver rear hydraulic leg missing, leveled with bottle jack. Confirmed level with digital inclinometer.

Started Radar: 1620 radar time (1719 UTC). Clock 3502 seconds behind due to time zone issues in system settings. Fixed at 1930 UTC restart.

Antenna control failures caused sporadic issues through IOP. Primary failure around 1830 radar time; crew shut down and restarted radar 24 min later with correct UTC time at 1954.

Ops ended at 2153 UTC.

Meteorological Notes

Describe general storm structure and evolution; note position and time of significant features and events; document fine lines (gust fronts, bores, other), peak Z_e , max echo tops, and height of first echo.
Record time of significant sfc weather (peak wind gust, etc.)

High amplitude, negatively tilted trough dug into the Central US, with attendant mid-latitude cyclone deepening over N. Plains and cold front progressing into Mississippi River floodplain region around 1800 UTC. Considerable WAA and moisture advection occurred in the MS river floodplain in association with deepening low pressure.

Upper level trough, associated upper level divergence, and attendant sfc. cold front provided forcing for thunderstorm intensification over the course of the afternoon, despite ongoing interaction with nocturnal/early morning precipitation present in the domain. A QLCS eventually developed and matured over the IOP4 domain in SE MO/NE AR, and was fairly well sampled as it did so.

Notable intensification occurred over the IOP 4 domain and well-defined bow echo reflectivity structure was noted after complex passed over and to the east of SR1. Considerable rear inflow associated with leading edge thunderstorms (see right) also developed to the east of the radar site.

Scan Strategy Notes

List scan type and time period used (chronological order); note nature and time scan mods were made (if any)

-VSE clutter scan from 1629 to 1639 UTC.
-FILT clutter scan from 1645 to 1712 UTC.
Switched to PERILS_Surv at 1733 UTC.
Switched to R40_shallow/deep sets at 1748 UTC.
Switched to PERILS_Surv at 1824 UTC.

Radar Restarted at 1830 UTC, clock corrected to proper UTC.

Started R20_shallow/deep sets at 2053 UTC
Switched to R40_shallow/deep sets at 2122 UTC.
Switched to R60_shallow/deep sets at 2136 UTC
Final volume in IOP: 2151 UTC R60_deep

Radar Images

Insert images that illustrate the general character of the event

