



WDTB Dual-Polarization Training News

Options for Implementing WES Exercises Component of the Dual-Pol Operations Course

Thus far, the Dual-Pol Operations Course provided SOOs/DOHs with a selection of 4 WES exercises, with two of these four needed to complete the course. Three of these simulations address severe weather and one addresses winter weather. This is a limitation for our northern WFOs, where the warm season is currently a long time away! Here are some new options that include new WES cases, as well as recommendations to streamline the process of facilitating staff completions for any of the WES exercise options.

Non-Precipitation Echoes (NPE) WES Exercise (see enclosed DVD and job sheet)

WDTB has just released an additional non-severe WES exercise, addressing Non-Precipitation Echoes (NPE). This is a first in many ways:

- The data are from operational WSR-88Ds outside of Oklahoma
- The data are from WSR-88D Dual-Pol Operational Radars
- The content is appropriate for any season...July in Phoenix and January in Morehead City

We've assigned this new WES exercise to the Dual-Pol Operations Course Learning Plan in the NWS Learn Center.

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Dual-Polarization Radar Operations Course Part 1
WES Exercises

Jobsheet #5: Non-Precipitation Echoes

Objective:

- Integrate your knowledge gained from the training modules along with the WDTB training aids into an analysis of dual-pol radar base products for 2 cases described below. The focus will be primarily on discriminating precipitation and non-precipitation echoes that are very near each other and are difficult to discern in ZV and SW.

Case Data: 06 July 2011 in Phoenix, AZ and 11-12 January 2012 in Morehead City, NC

Available Data: KIWA radar data (all-bits), KMRX radar data (all-bits)

Analysis Duration: 60 min
Answer Keys Duration: 30 min

EVENT #1: Dust Storm (Phoenix, AZ) – July 5, 2011

This event was a high impact event for the Phoenix WFO. As evening approached, the monsoonal thunderstorms triggered several dust storms. Some dust storms were weak, not causing much impact, while one became a haboob causing delays at the Phoenix airport and knocking out power to thousands in the Phoenix metro area. Since dust storms are not common over much of the United States, the emphasis will be placed on the characteristics of the boundaries associated with the dust storms with less detail on the dust storms themselves.

Instructions:

- If you have your 2011 DP Exercises D-2D session running from before, close it.
- Run start_wjvba from a terminal on your WES machine
- Choose 2011 DP Exercises for the FXA_DATA (i.e. case location)
- Choose PSR for FXA_LOCAL_SITE
- Click "OK" to start the D-2D session localized for Phoenix, AZ CWA
- Using the WES workstation, left click on the D2D clock in the lower right part of D2D
- Using the "Set Time" window, set the D2D clock to 2011 July 6 03:00 UTC (don't bother changing the seconds) and check the "Freeze Time at This Position" box.
- Set Map Scale to "WFO"
- Click on the View menu and load "0.5 Base Data"
- Set frames to 25
- Modify map backgrounds and data magnification as you see fit in both panes
- Get a feel for the big picture: Loop through the 25 frames at 4 panes and/or Panel ComboRotate, getting a broad scale view of the base products Z, ZDR, CC, and KDP, the character and movement of the boundaries and precipitation, and to become familiar with controls, if you are not already.
- When ready, go to the time at 01:07 UTC. Zoom into the area near the radar to the east (see Figure 1)

Dual-Polarization Radar Operations Course Part 1
WES Exercises

Question 1: One of the primary advantages of dual-pol radar is being able to discriminate more easily between non-meteorological and meteorological echo. Look at the area just east of the radar from roughly 9 to 11 km range and between the azimuths of 113 and 126 degrees. Fill in the following table of values for the areas specified (See Fig. 1).

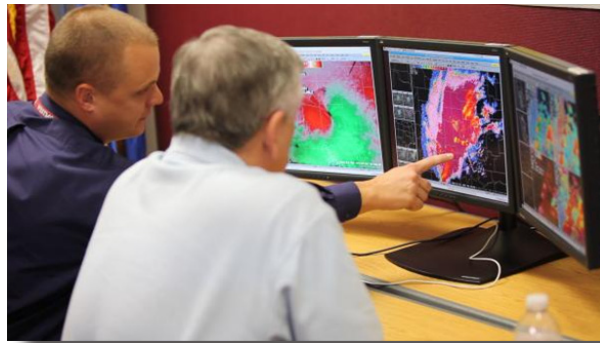
	Region 1: 9nm @ 113-114°	Region 2: 10nm @ 122-126°
Z (dBZ)		
ZDR (dB)		
CC		

Question 2: Based on Reflectivity alone, were you able to confidently identify regions of precipitation versus regions of ground clutter near the radar?

Complete a WDTB-approved Locally-developed WES Exercise

Another new option for WES exercise completion has been added to the Dual-Pol Operations Course Learning Plan in the NWS Learn Center. It is titled "WDTB-approved Locally-developed WES Exercise." SOOs can build a case from an adjacent/regional WSR-88D that has been upgraded to Dual-Pol. The case can be presented individually or through group seminars. If you choose this option, you must provide WDTB with some basic information on the nature of the case via a Google Docs form titled "WDTB-approved Locally-developed WES Exercise for the Dual-Polarization Radar Operations Course." A link to this form can be found on the WDTB Dual-Polarization Radar Training page <http://www.wdtb.noaa.gov/courses/dualpol/index.html>. The goal is to capture the specifics of the event, as well as any relevant discussion items. Operations Course Certificates will not be awarded to individuals until this form has been completed and submitted.

If you wish, WDTB Dual-Pol training team members can participate as SMEs to discuss interesting aspects of the case before it is presented to your staff and/or attend staff seminars if that option is chosen.



New Ideas for staff completion of WES exercises:

Irrespective of which WES cases are chosen, here are some ideas to streamline the process of facilitating the completion of the WES exercises.

1. *Dedicated workstation in a common area*

Many of the WDTB staff completed their WES exercises by using a workstation in a common area set up for that purpose. Anyone had access at any time. Instructions, headphones, etc. were available and this workstation remained dedicated for WES exercises until everyone had completed them. If you are interested in this option, Mark Sessing at WDTB, (405-325-3194, mark.l.sessing@noaa.gov) would be happy to help you set this up at your office.

2. *Staff seminars*

This idea comes from the ingenuity of a couple of our SOOs! A given WES exercise is presented to the staff in a seminar format. As a group, they step through the job sheets, and discuss their answers as well as the answers provided as part of the case. This discussion format can be particularly effective for learning. One SOO has reported completion of one of the WES exercises for all staff by conducting two of these seminars, which proved to be both an efficient use of time and a good learning experience.

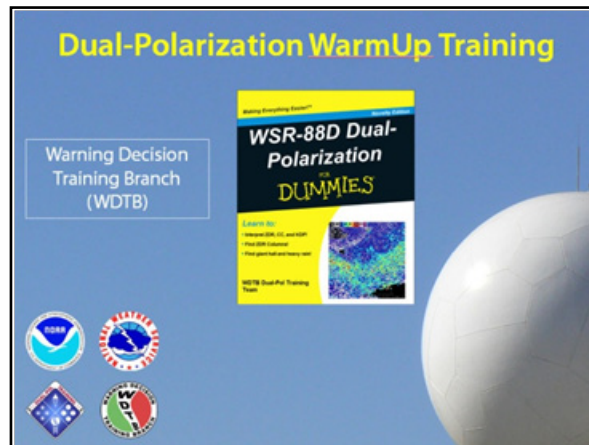


WDTB Dual-Pol Webinars

WDTB continues to offer two different types of monthly Webinars to support your transition to Dual-Pol. See our web site for information on specific sessions:

<http://www.wdtb.noaa.gov/courses/dualpol/index.html>

1. The Dual-Pol Warmup Sessions are delivered the third Wednesday of each month, starting at 2 pm central time. These webinars are targeted for beginners, and the goal is to convey the added value of Dual-Pol base data in context with the legacy base data.



2. The Dual-Pol Storm of the Month webinars are delivered the last Wednesday of each month, starting at noon central time. Each month features a different topic and a different speaker, all demonstrating the use of Dual-Pol in NWS operations.

Each of the live Dual-Pol Storm of the Month webinars are “post-processed” and packaged as “Dual-Pol Best Practices” modules that are available in the NWS Learn Center. These sessions address important topics such as how to use a Tornado Debris Signature in real time as well as post-storm damage surveys (October 2011), challenges with comparing QPE and PPS rainfall estimates (November), and the use of Dual-Pol base data vs. the MLDA for identifying the melting layer (December).

Storm of the Month - Best Practices

Dual-Pol Storm of the Month

Dual-Pol Storm of the Month - Best Practices (2011-10 October 2011) - In this Storm of the Month, we take a look at Hurricane Irene and focus on how dual-pol revealed the tropical characteristics of the hurricane and how, in real-time, a forecaster would have had increased confidence in an EF-2 tornado that hit a coastal city.

[Click here to start this course](#)

Dual-Pol Storm of the Month - Best Practices (2011-11 November 2011) - The Arizona Monsoon: Water & Dust! This year's Arizona monsoon season was particularly active, with multiple high impact dust storms in the Phoenix area, and a significant rain event in Tucson. For this webinar we have our first guest subject matter expert, J.J. Brost the SOO from the Tucson, AZ WFO. He looks at the performance of the dual-pol QPE for the rain event, and the dual-pol base data for one of the Phoenix dust storms.

[Click here to start this course](#)

Dual-Pol Storm of the Month - Best Practices (2011-12 December 2011) - Nowcasting precipitation types during winter weather transitions is often very challenging. Use of the new Dual-Pol products will be presented, such as monitoring changes to the melting layer during these transitions. There will be an emphasis on interpretation of algorithm results, such as HCA, in the context of all of the base data.

[Click here to start this course](#)