

## EASTERN REGION TECHNICAL ATTACHMENT

No. 83-16

September 12, 1983

RHI PHOTOS OF "WER" (WEAK ECHO REGIONS) AND "BWER"  
(BOUNDED WEAK ECHO REGIONS) WITH A VERIFIED TORNADO

Area Manager Chet Henricksen has compiled an excellent show and tell article for all 10 cm radar sites. This material was based on a recent event off the Pittsburgh radar.

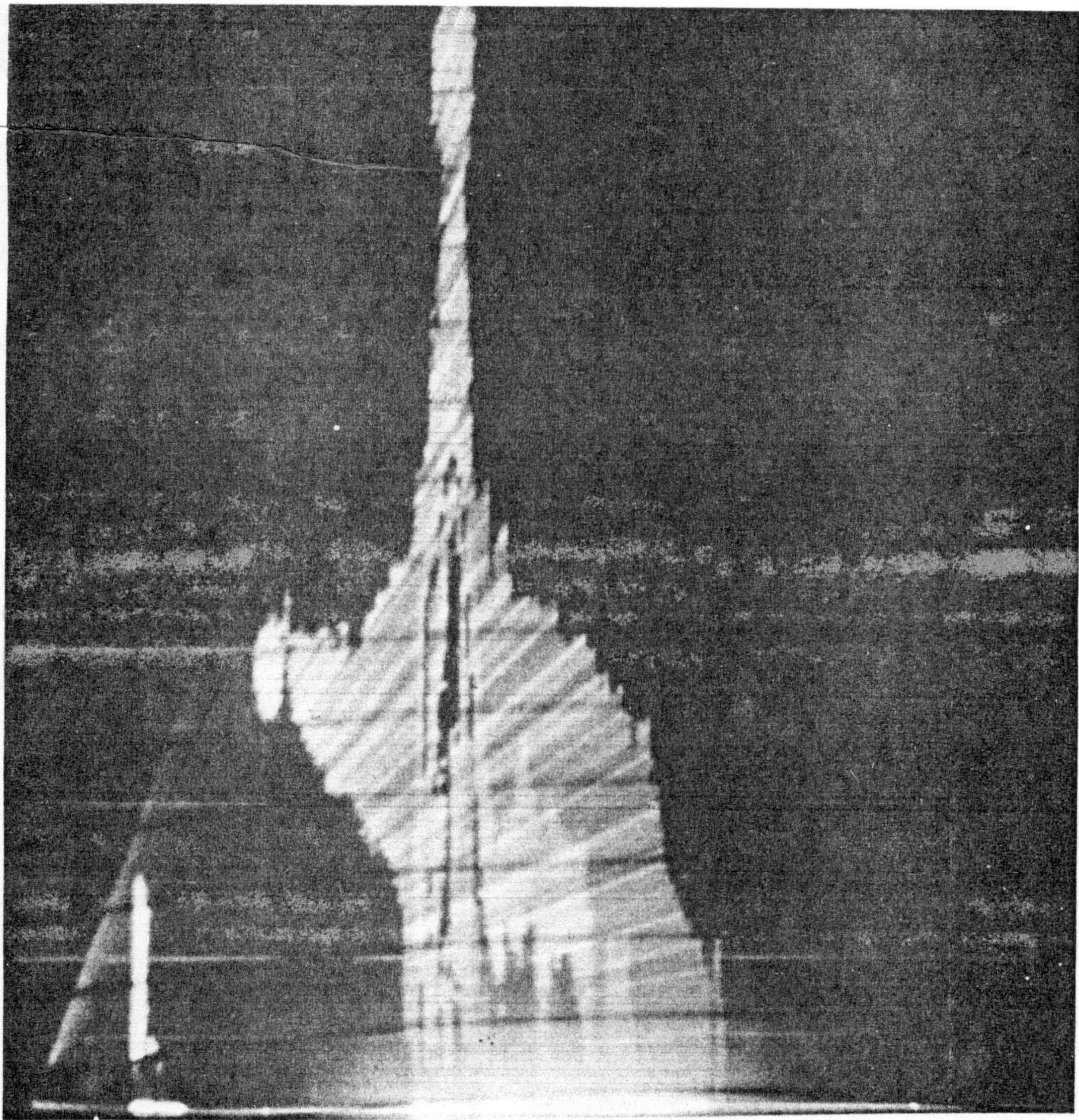
"Shown are two enlargements of the RHI pictures taken at WSFO PIT on the afternoon of July 20, 1983. The first photo was taken at 2:25 PM EDT and the second at 2:47 PM EDT. Both were taken with f stop of 1.9 and a time exposure of 10 to 12 seconds with two sweeps of the RHI. (Polaroid 108 film used). The photos were professionally enlarged and enhanced. The RHI was on 125 nmi range and set on DVIP calibration.

"Note the tilt with the first picture with the cell cross section in an ideal location northeast of the radar site. You are looking into the southwest flank of a very large thunderstorm with a pronounced hail spike and DVIP >5 above 30,000 feet suspended and displaced from the parent cell further to the northeast. Note the overhang toward the radar site, the displaced maximum top separate from the maximum surface DVIP and the DVIP 6 above 30,000 feet.

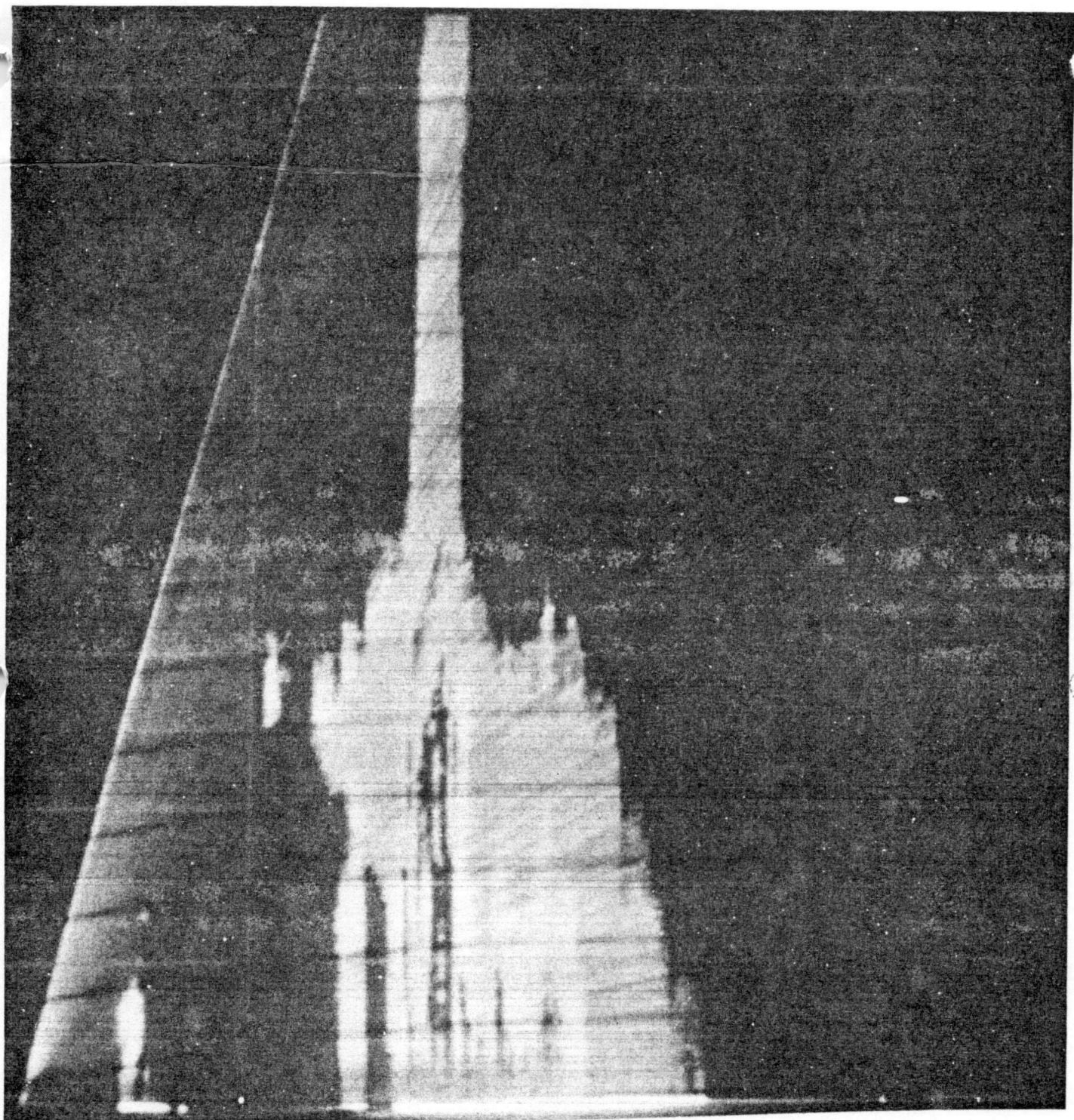
"On the second picture 22 minutes later a bounded weak echo region is enclosed up to 16,000 feet with the displaced DVIP in the earlier picture now the predominant cell with the DVIP maximum descended. The BWER is located on the southwest flank of the large thunderstorm with the tornado touchdown verified under the southwest boundary of the BWER. Remembering that this is on 125 nmi range the BWER is over 5 nmis wide with the southwest boundary 3 to 5 nmis wide."

Based on the Pittsburgh radar operator's advice and almost exclusively using RHI data, the lead forecaster put out the first tornado warning.

This warning went out at 2:38 PM and the tornado struck at 3:15 PM!



WER



BWER & TORNADO