



WESTERN REGION TECHNICAL ATTACHMENT

No. 76-10  
May 4, 1976

OLD 96-HOUR PROG HELPS INTERPRETATION OF NEW 72-HOUR PROG

For some time now, at WRH daily morning map discussions, we have been using the 96-hour 500-mb prognosis to help us in interpreting the 72-hour prognosis. Each afternoon a 96-hour 500-mb is transmitted as part of the NAFAX extended forecast guidance package. This prognosis is valid at 0000Z approximately 3 days from time of receipt. Early the next morning at approximately 1230Z a 72-hour 500-mb prognosis is available and valid at the same time as the previous day's 96-hour prognosis. By comparing these two prognoses, we have found the differences between the progs are often an indicator of the weighting given to certain features in the 72-hour prognosis. Since the 96-hour prog is an important part of the input to the NMC extended guidance package, the comparison often results in an update of the extended forecast.

The WRH comparison procedure consists of comparing a given contour from each prog. The contour chosen is near the center of the main belt of westerlies, and changes with season. At present the 558 contour is being used. The 96-hour prog 558 contour is transferred to the 72-hour prog by eye, as the 2 maps are on different scales. However, this is a simple task if it is confined to one contour.

A few examples will illustrate the procedure and the interpretation of differences that were presented during map discussions, i.e., roughly 2-1/2 days before the 72-hour prog verified, not after it verified.

On Friday morning, April 23rd, the 96- and 72-hour 500-mb prognoses valid 0000Z on 26th, were compared. See Figure 1a. The progged contours were essentially the same regarding the large-scale trough near 165° West. Over land, the 72-hour prog (solid line) showed a considerably deeper trough than the 96-hour prog (dashed contour). Our interpretation was that during the 24 hours from the initial time of the 96-hour prog to the initial time of the 72-hour prog conditions had changed to support a stronger trough over the Region by Sunday, April 26th. As it turned out, the trough was actually stronger than the 72-hour prognosis indicated. See Figure 1b for verifying analysis.

Last weekend, the 72- and 96-hour progs valid 0000Z May 3, 1976, were in close agreement over the Region, see Figure 2a. Our interpretation was that the ridge and associated dry weather would prevail over the Region during the weekend except for the Pacific northwest. See Figure 2b for verification.

The use of differences between 96- and 72-hour prognoses valid for the same time appear to be better in indicating intensity changes of large-scale troughs and ridges rather than their motions. For example in Figure 2a, the 72-hour prog has the "dateline" trough much farther east than the 96-hour prog. Following the reasoning stated above, you would then say that this trough line will verify farther east than the 72-hour prog indicates and it did. See Figure 2b. However, if you compare the 96- and 72-hour progs valid for 0000Z April 22, 1976, Figure 3a, the differences of the positions of the trough over the Region and the one near the dateline suggest that both of these troughs should also verify farther east. Such was not the case. Instead they split the honors. See Figure 3b.

To sum: Comparison of 96- and 72-hour prognoses valid for the same time can help the forecaster determine the weight he should give to ridge and trough intensity given in the 72-hour 500-mb prog, and be a guide to updating the extended outlook for use in early morning VHF broadcasts.

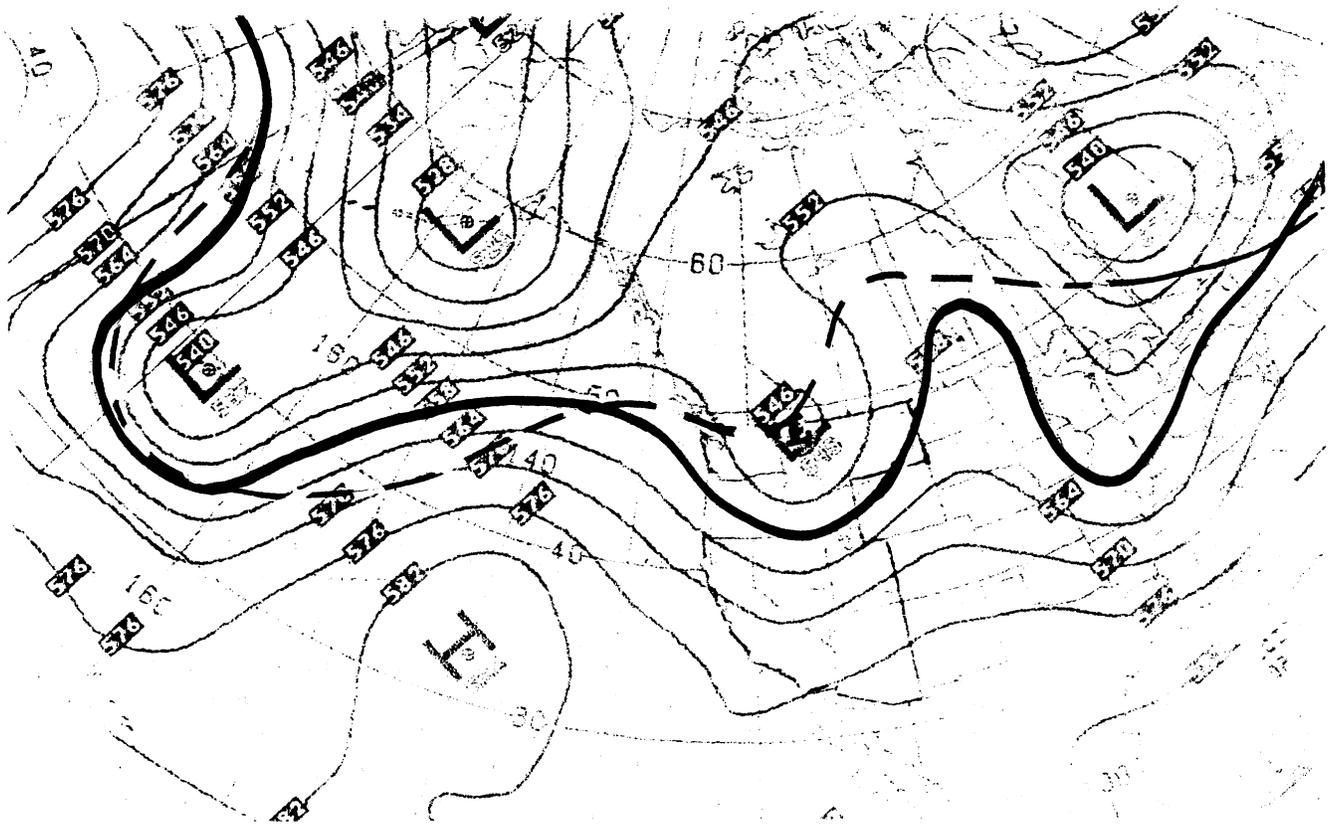


FIGURE 1A. 72-HOUR 500-MB PROGNOSIS VALID 0000Z APRIL 26, 1976, WITH 96-HOUR PROGNOSTIC 558 CONTOUR SUPERIMPOSED AS HEAVY DASHED LINE.

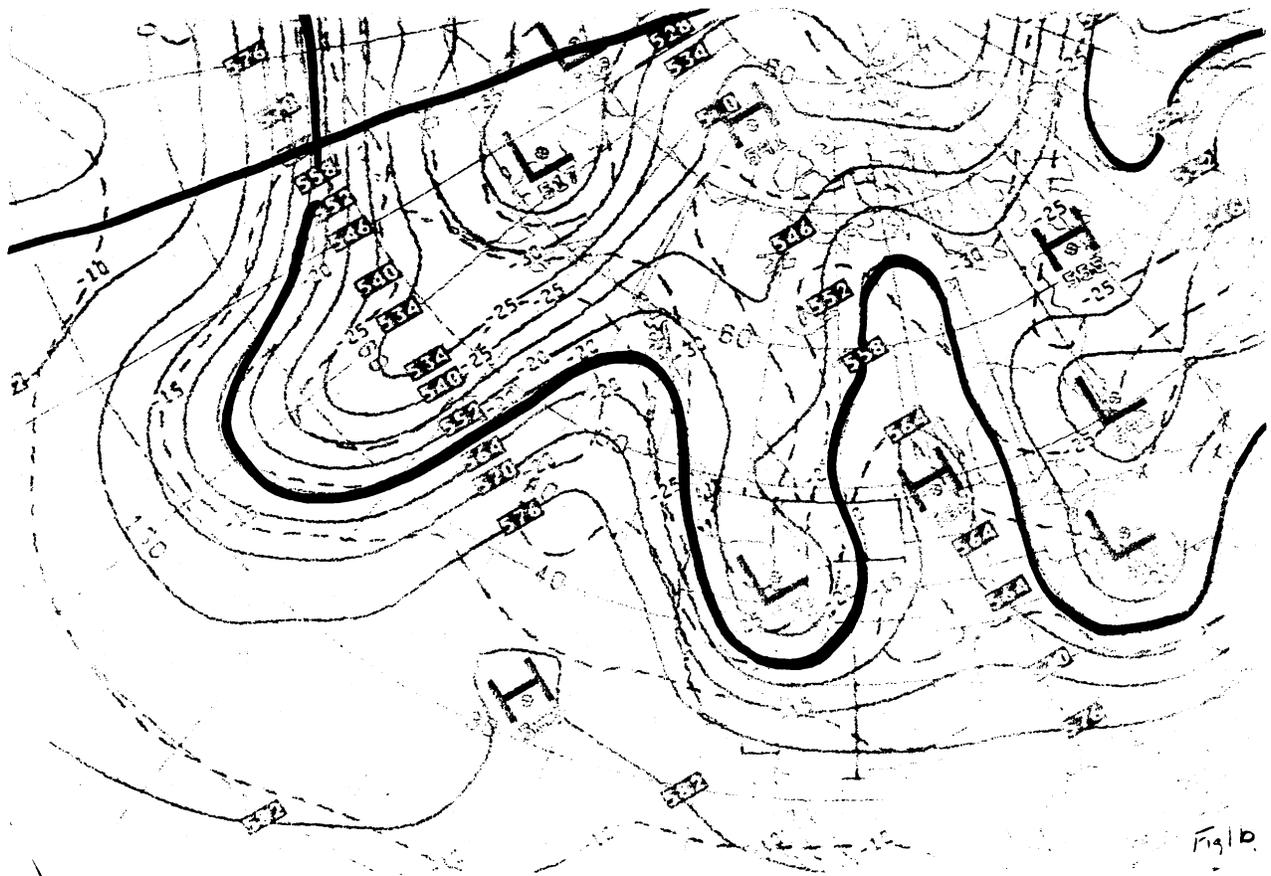


FIGURE 1B. VERIFYING 500-MB ANALYSIS, APRIL 26, 1976.

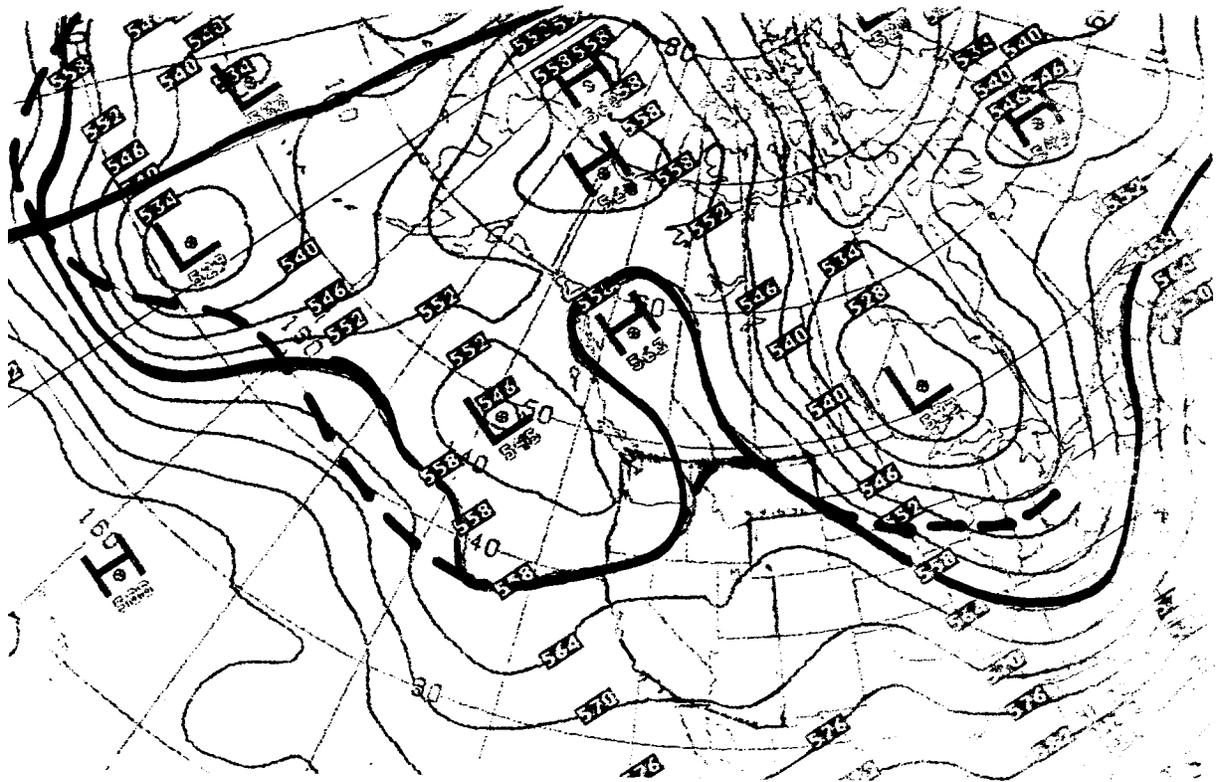


FIGURE 2A. 72-HOUR 500-MB PROGNOSIS VALID 0000Z MAY 3, 1976, WITH 96-HOUR PROGNOSTIC 558 CONTOUR SUPERIMPOSED AS HEAVY DASHED LINE.

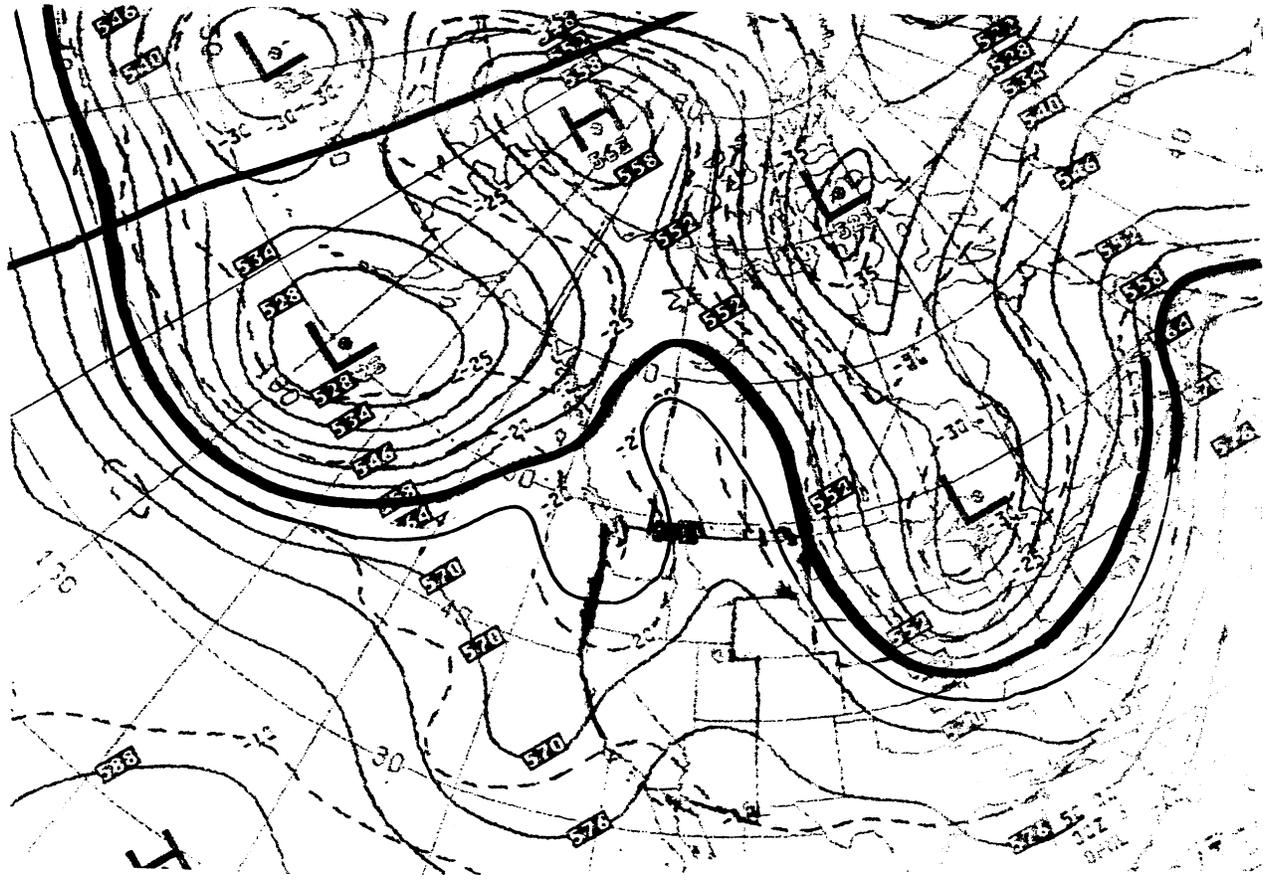


FIGURE 2B. VERIFYING 500-MB ANALYSIS, MAY 3, 1976.

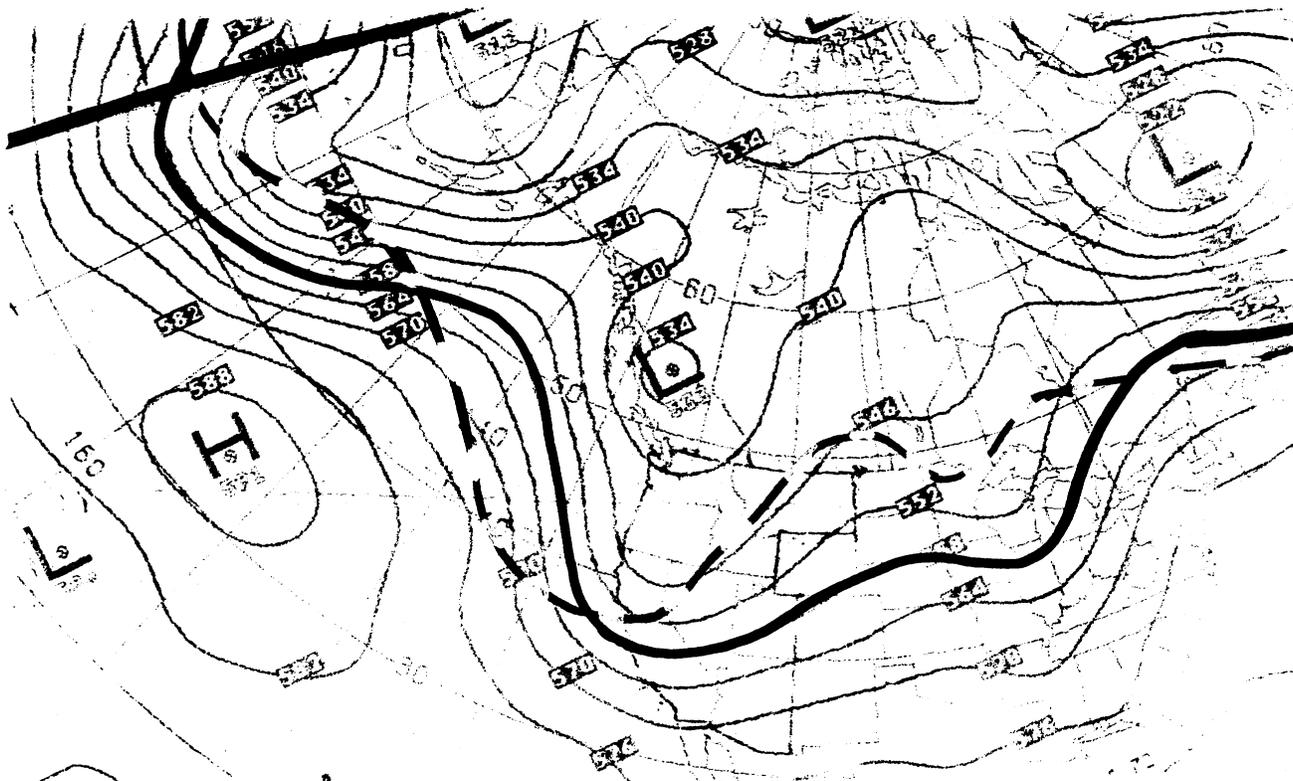


FIGURE 3A. 72-HOUR 500-MB PROGNOSIS VALID 0000Z APRIL 22, 1976, WITH 96-HOUR PROGNOSTIC 558 CONTOUR SUPERIMPOSED AS HEAVY DASHED LINE.

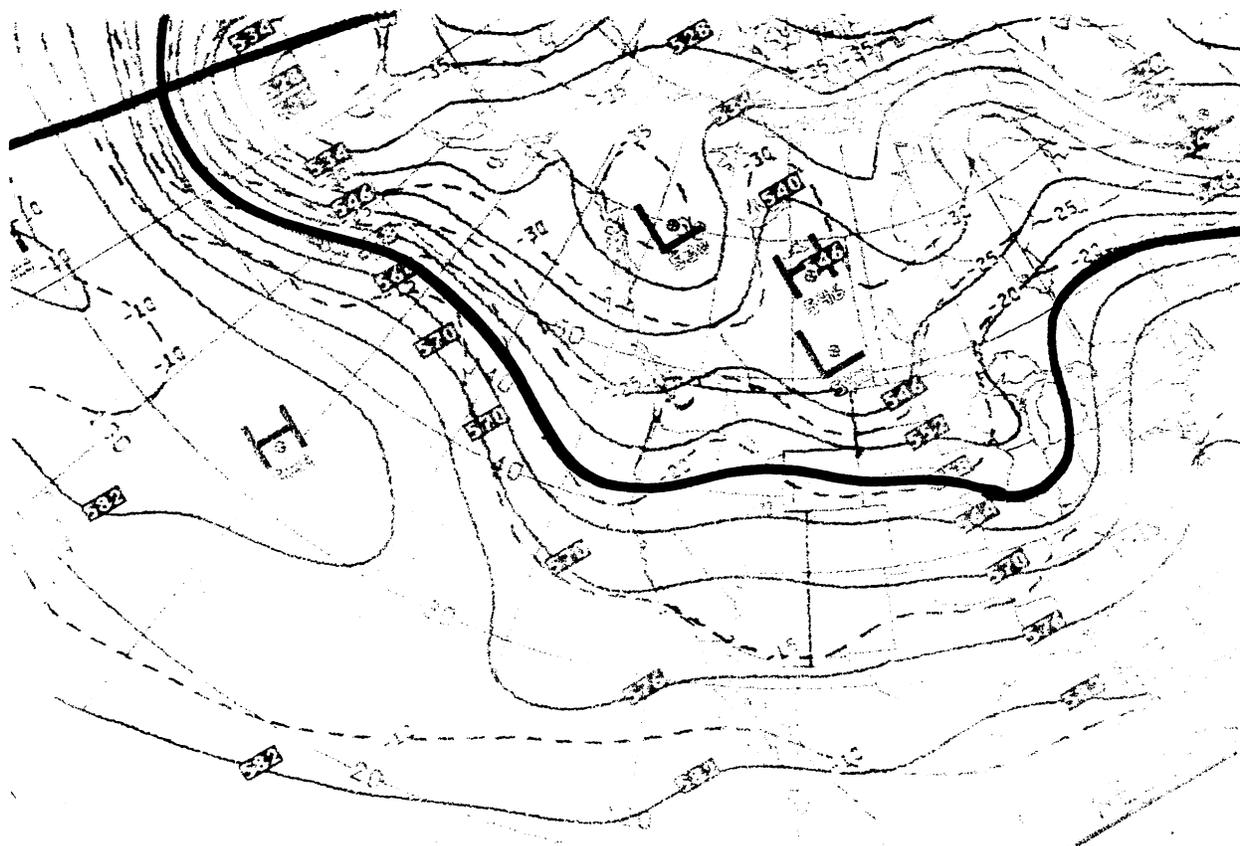


FIGURE 3B. VERIFYING 500-MB ANALYSIS, APRIL 22, 1976.