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NEW MODELS FORECAST END TO HEAT WAVE

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The period of Tuesday, July 15, through Saturday, July 19, 1986 saw a heat wave plague the southern and eastern portions of the Central Region. Temperatures in the 90's were quite common, even in Michigan, especially toward the end of the week. The heat wave peaked out over central Kansas on Friday, July 18, when Russell and Salina had 104° and 103°F, respectively.

An indication that relief was in sight came on Tuesday, when the MRF 120-hr MSL pressure forecast (see Fig. 1a) showed a low in southeast Kansas with a high building down over Wyoming and Colorado by 00Z Sunday, July 20. This was clear evidence of cooler air on the way. Subsequent MRF runs continued to show cooling.

By Friday morning, July 18, the 48-hr ERL (LFM) 850 mb forecast valid at 12Z Sunday, July 20, suggested only minor relief (see Fig. 1b). The forecast 850 mb 20°C isotherm dipped down only into northeast Nebraska. In contrast, the RGL (RAFS) run from the same initial data brought the 20° isotherm as far south as the Texas Panhandle in 48 hours (see Fig. 1c). Strong northerly boundary layer winds were forecast over the north-central part of the country from the Dakotas and Minnesota southward through Kansas and northwest Missouri.

Fig. 1d is the 00-hr chart corresponding to Figs. 1b and 1c. It can be seen that the forecast of the 20° isotherm position by the RGL model was excellent along the Kansas-Oklahoma border, as was the forecast of the northerly winds. In Missouri, Illinois, and Indiana the cooler air actually penetrated farther than forecast. Sunday's highs were in the 80's in the area which had had the hot weather.

A flaw in the boundary layer wind forecast from the RGL model was evident over Colorado and Wyoming when it failed to forecast the return flow out of the southeast which Fig. 1d shows.

In this case the new models (MRF and RGL) showed their prowess. The MRF has more to offer than just 500 mb heights — namely MSL pressure charts. Also, RGL boundary layer winds combined with 850 mb heights and temperatures give a good indication of expected surface conditions.

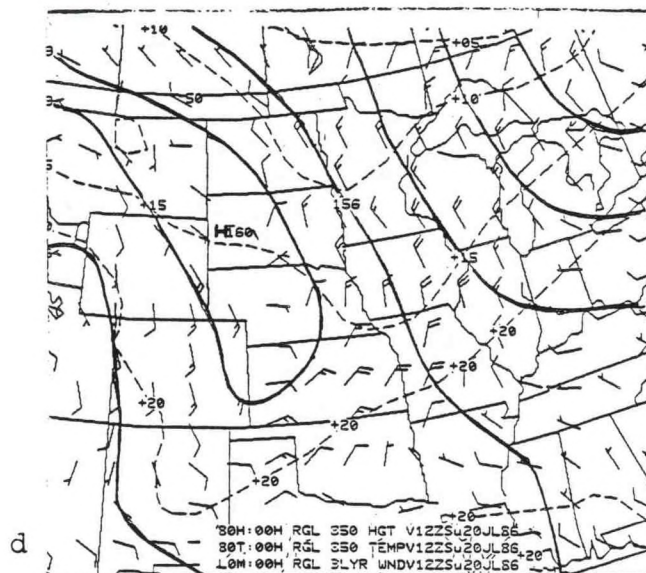
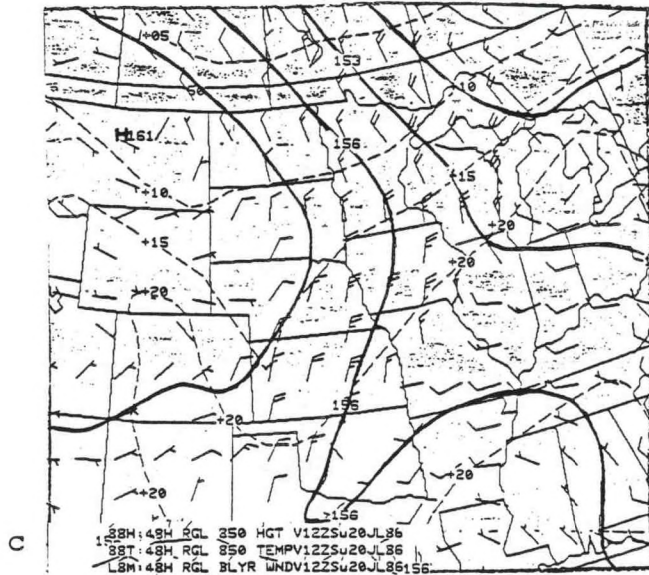
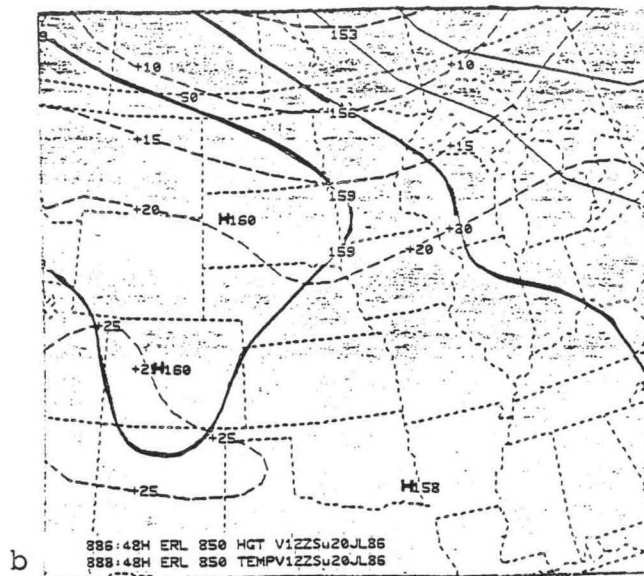
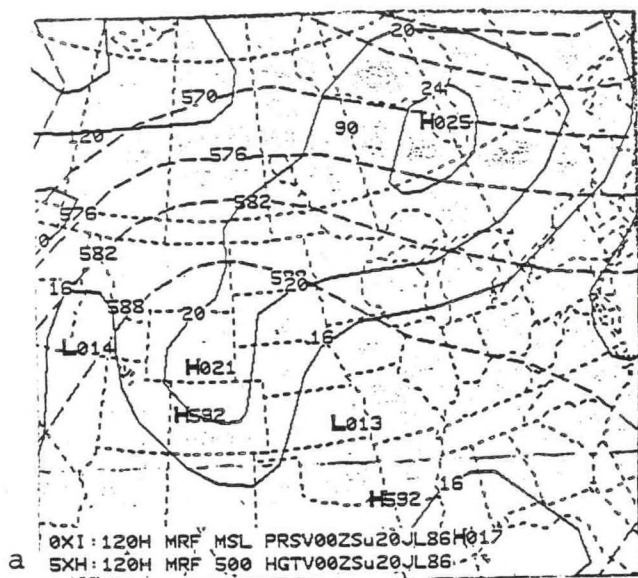


Figure 1