CRH SSD
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CENTRAL REGION TECHNICAL ATTACHMENT 87-18

COMPARATIVE VERIFICATION OF MOS-NGM PERFECT PROG GUIDANCE

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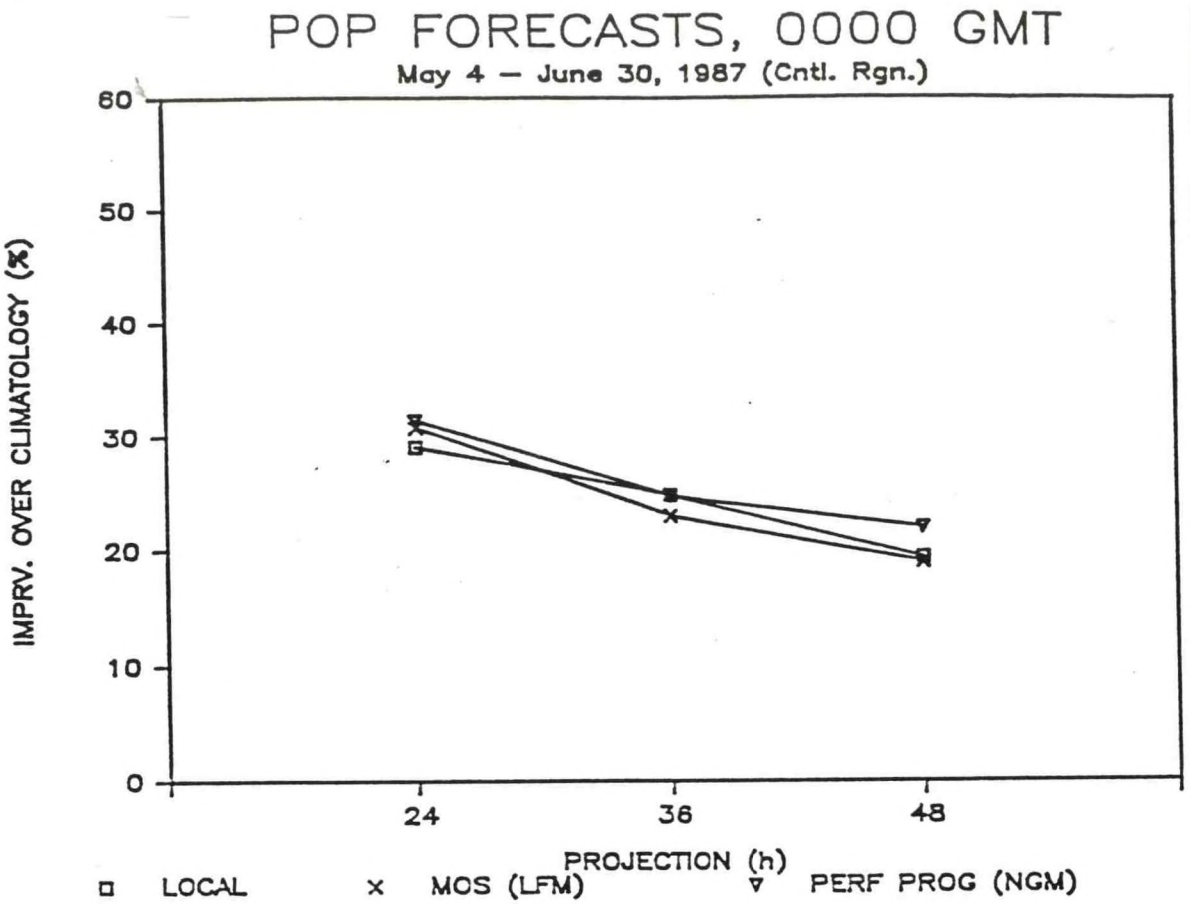
Techniques Development Laboratory has provided us a comparative verification of their two guidance packages over the period May 4 through June 30. The attached figures are from that study. Fig. 1 shows that over the Central Region, the PoP's from the NGM were generally (except for the 24-hr projection at 00Z) slightly better than the MOS. However, the mean absolute errors in temperature forecasts (Fig. 2) show that MOS performed better. A large part of this is due to a cold bias (numbers in parentheses on figure) in the NGM-based guidance.

Clouds and wind verification was only performed on a nationwide basis. The performance of the two guidance packages were essentially equal for cloud forecasts (Fig. 3). The NGM-based wind forecasts (Figs. 4 and 5) are usually more skillful than MOS for both direction and speed.


POP FORECASTS, 0000 GMT
May 4 — June 30, 1987 (Cntl. Rgn.)
IMPRV. OVER CLIMATOLOGY (%)
60
50
40
30
20
10
0
24
36
48
PROJECTION (h)
LOCAL
MOS (LFM)
PERF PROG (NGM)

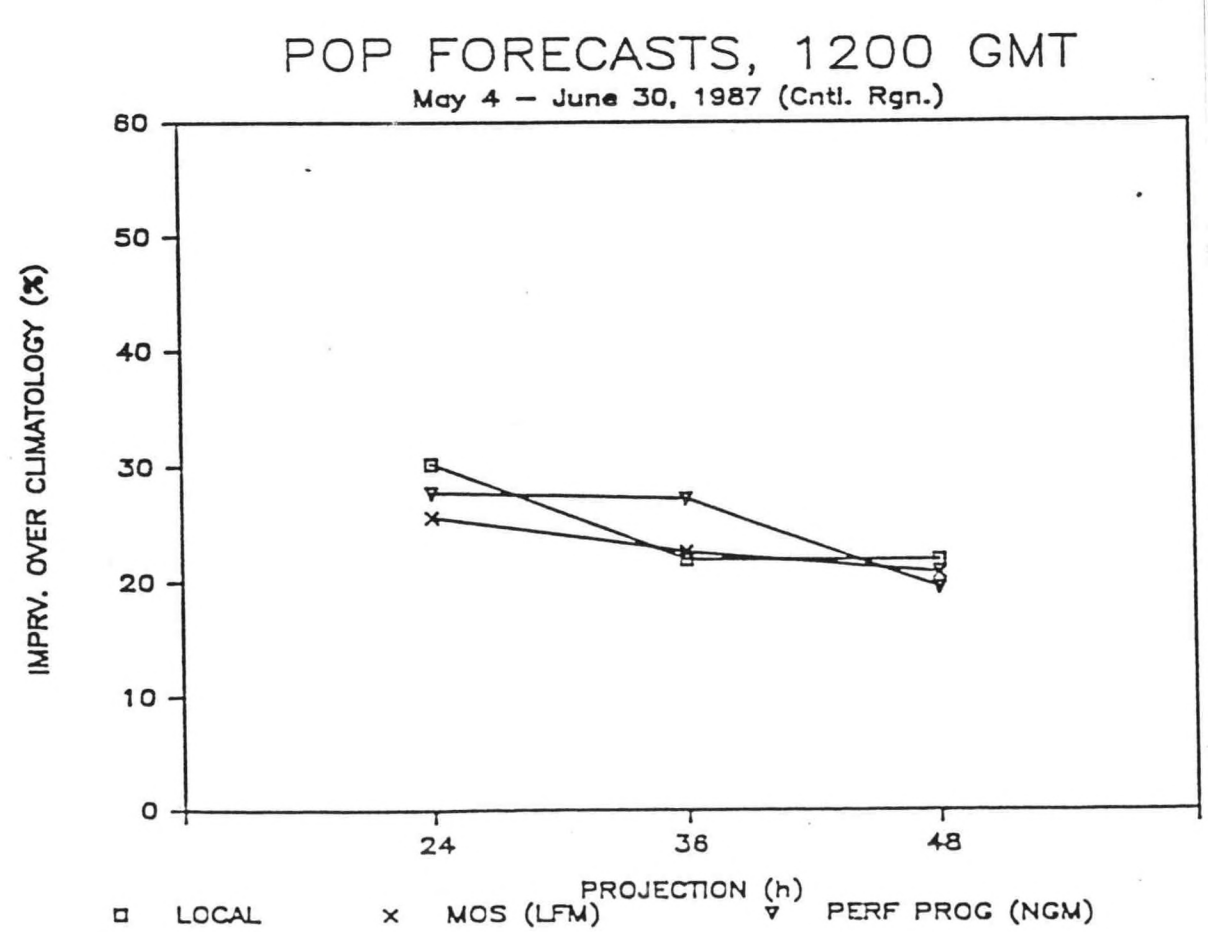
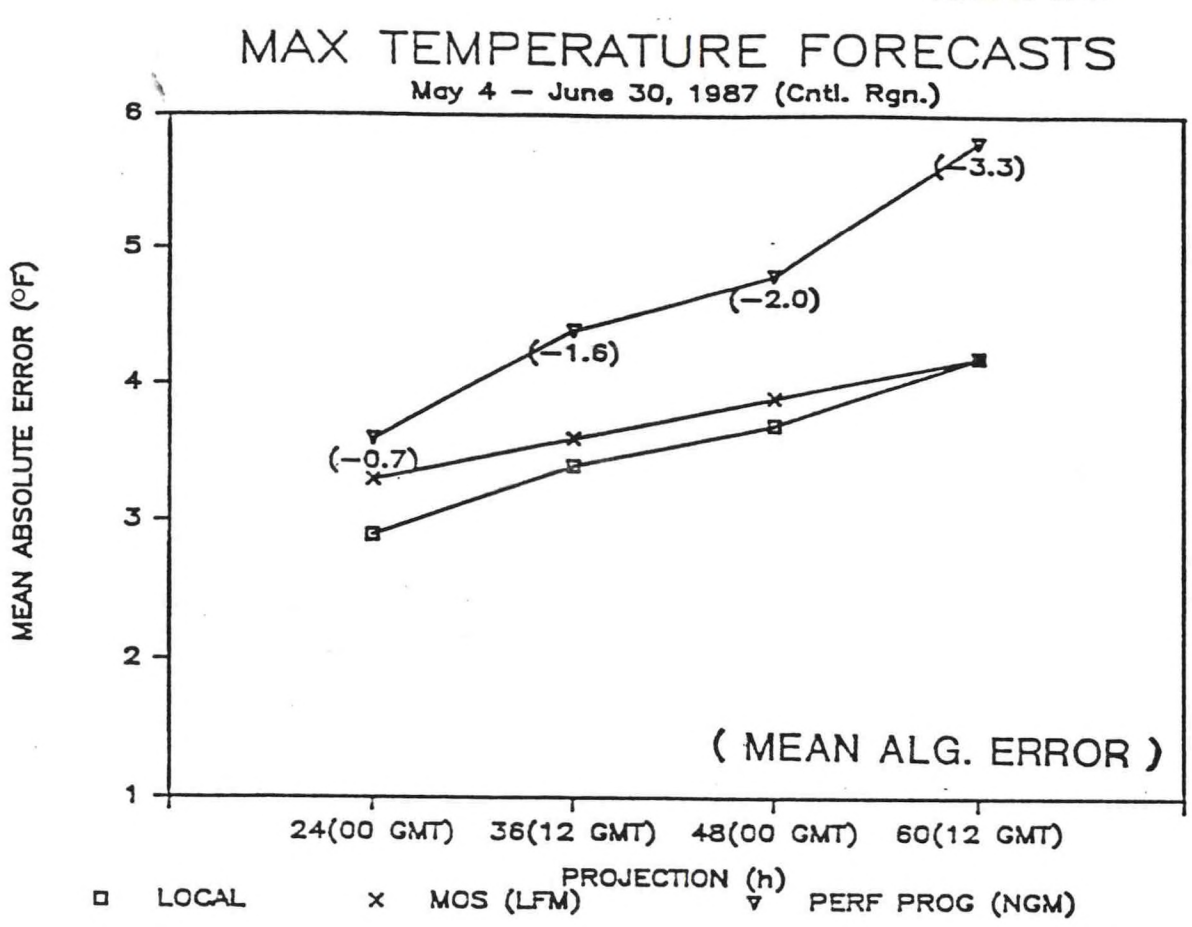

POP FORECASTS, 1200 GMT
May 4 — June 30, 1987 (Cntl. Rgn.)
IMPRV. OVER CLIMATOLOGY (%)
60
50
40
30
20
10
0
24
36
48
PROJECTION (h)
LOCAL
MOS (LFM)
PERF PROG (NGM)

Figure 1.


MAX TEMPERATURE FORECASTS
May 4 — June 30, 1987 (Cntl. Rgn.)
MEAN ABSOLUTE ERROR (°F)
6
5
4
3
2
1
(−3.3)
(−2.0)
(−1.6)
(−0.7)
(MEAN ALG. ERROR)
24(00 GMT)
36(12 GMT)
48(00 GMT)
60(12 GMT)
PROJECTION (h)
LOCAL
MOS (LFM)
PERF PROG (NGM)

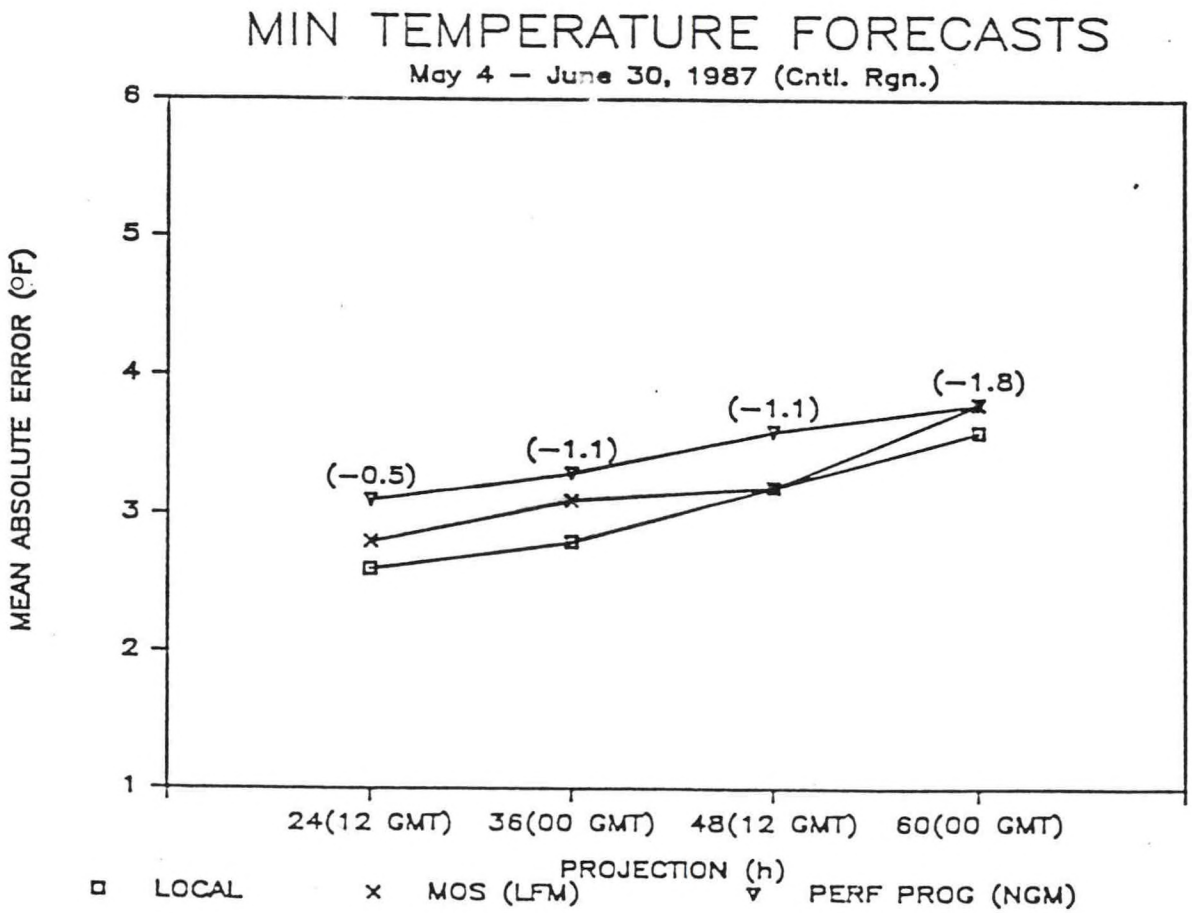
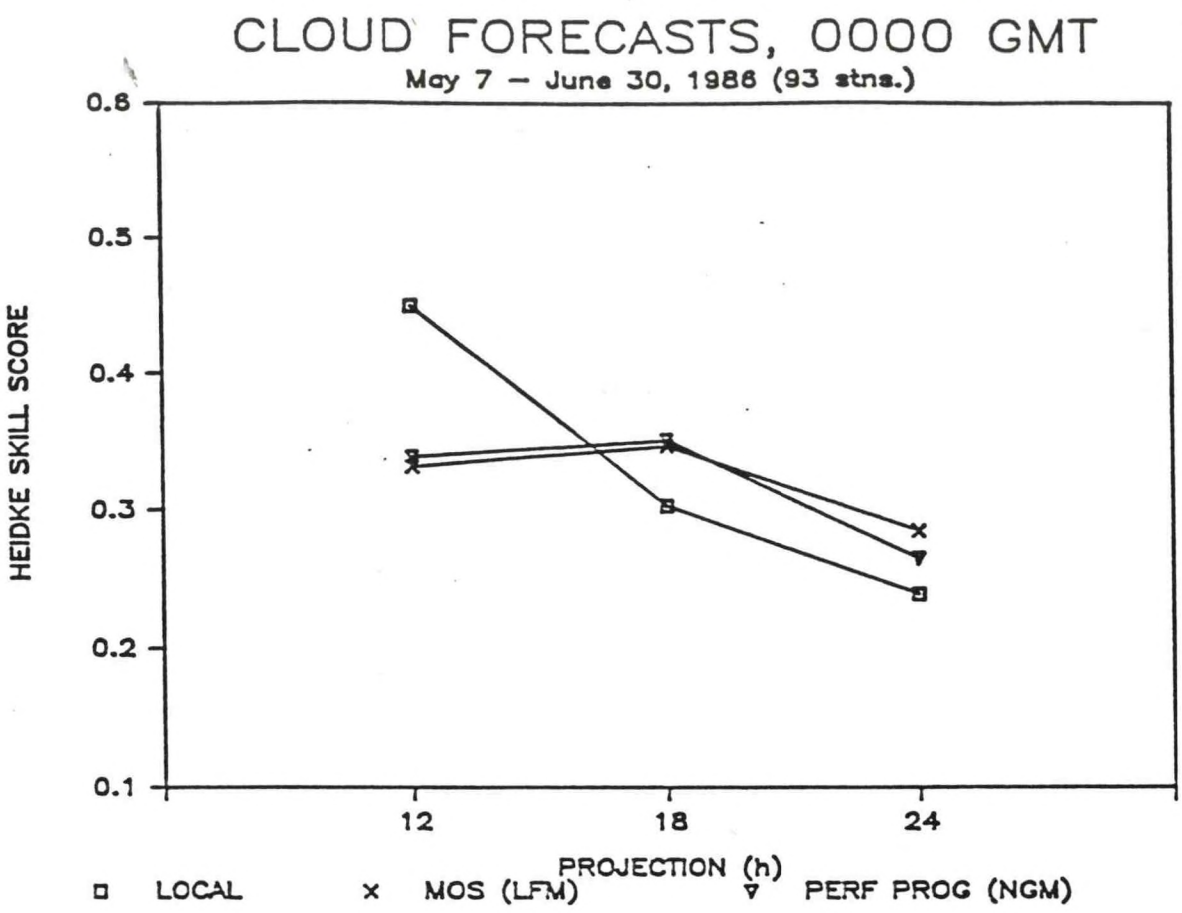

MIN TEMPERATURE FORECASTS
May 4 — June 30, 1987 (Cntl. Rgn.)
MEAN ABSOLUTE ERROR (°F)
6
5
4
3
2
1
(−1.8)
(−1.1)
(−1.1)
(−0.5)
24(12 GMT)
36(00 GMT)
48(12 GMT)
60(00 GMT)
PROJECTION (h)
LOCAL
MOS (LFM)
PERF PROG (NGM)

Figure 2.


CLOUD FORECASTS, 0000 GMT
May 7 – June 30, 1986 (93 stns.)
HEIDKE SKILL SCORE
0.6
0.5
0.4
0.3
0.2
0.1
12
18
24
PROJECTION (h)
LOCAL
MOS (LFM)
PERF PROG (NGM)

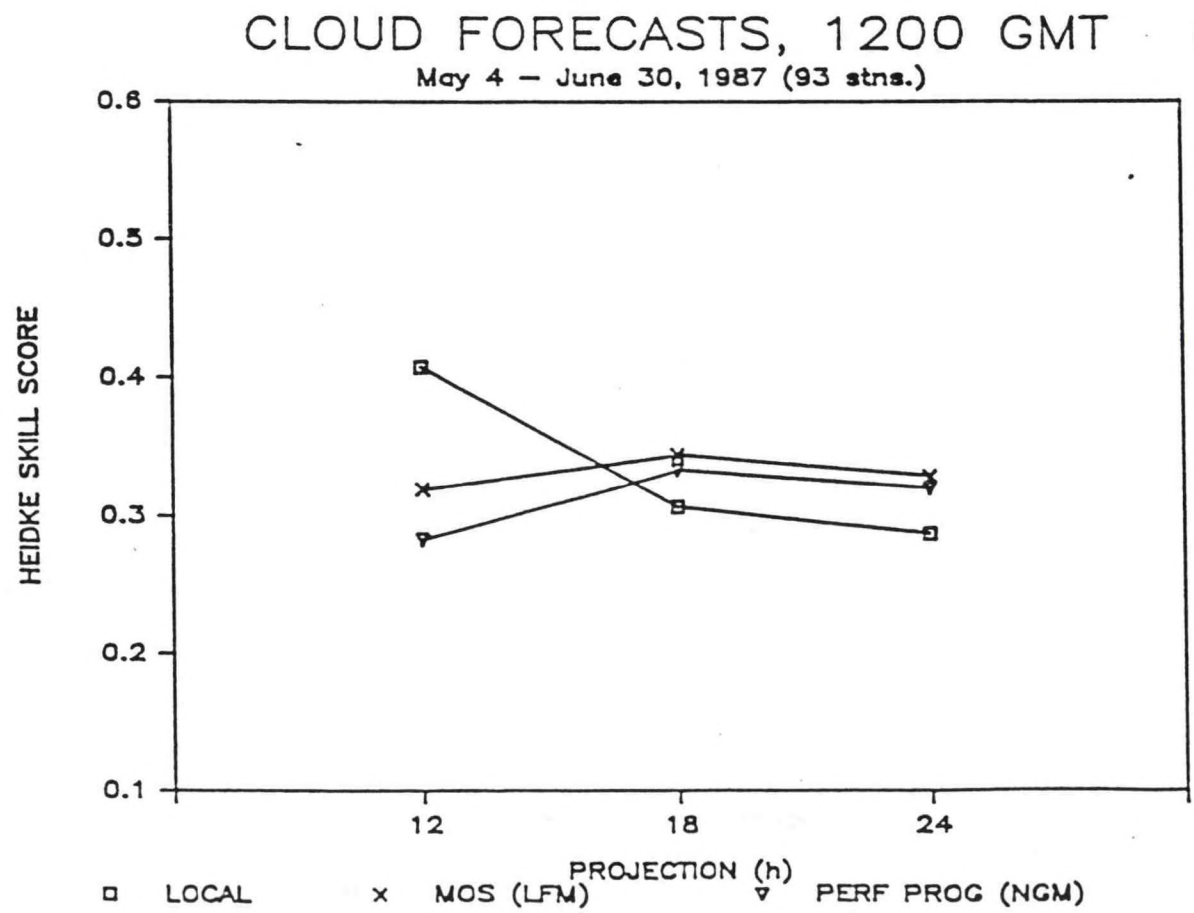
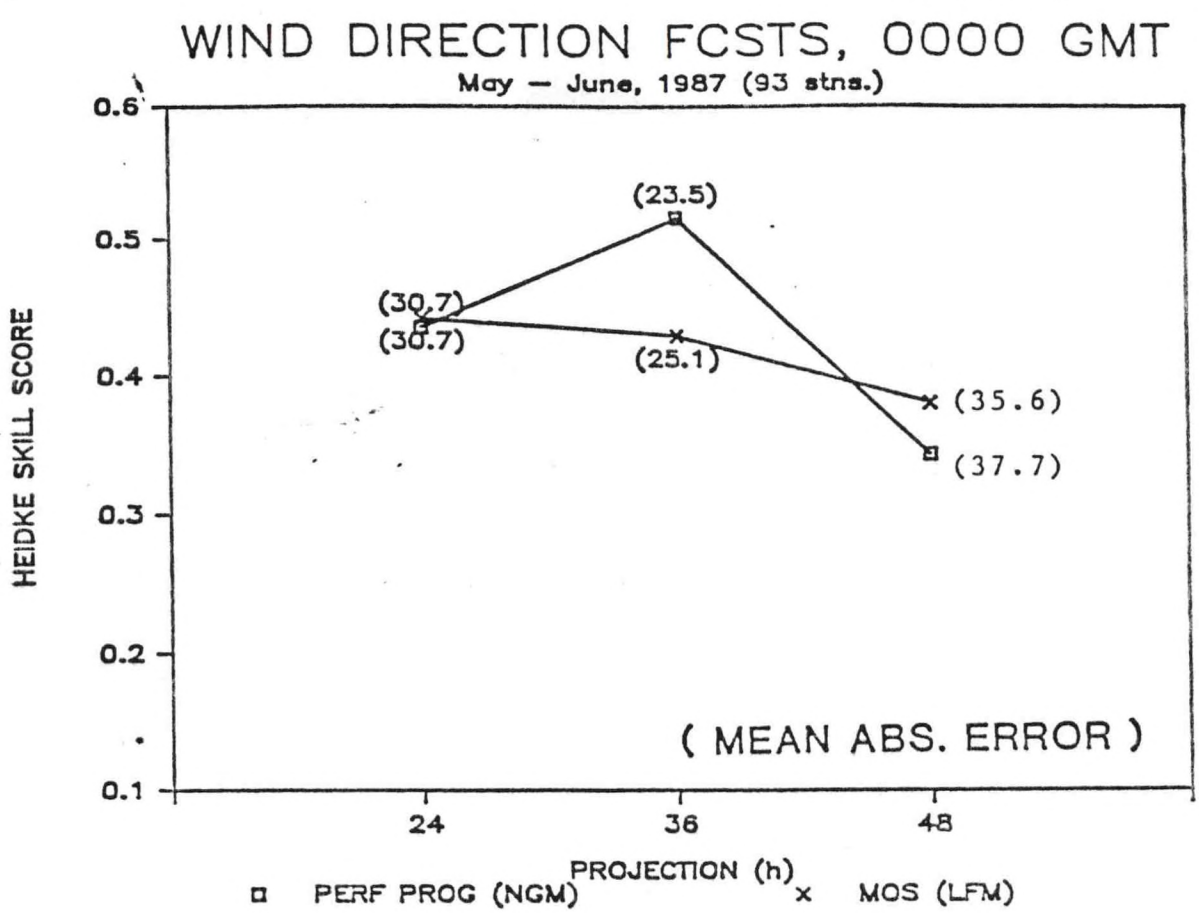

CLOUD FORECASTS, 1200 GMT
May 4 – June 30, 1987 (93 stns.)
HEIDKE SKILL SCORE
0.6
0.5
0.4
0.3
0.2
0.1
12
18
24
PROJECTION (h)
LOCAL
MOS (LFM)
PERF PROG (NGM)

Figure 3.


WIND DIRECTION FCSTS, 0000 GMT
May – June, 1987 (93 stns.)
HEIDKE SKILL SCORE
0.6
0.5
0.4
0.3
0.2
0.1
(23.5)
(30.7)
(30.7)
(25.1)
(35.6)
(37.7)
(MEAN ABS. ERROR)
24
36
48
PROJECTION (h)
PERF PROG (NGM)
MOS (LFM)

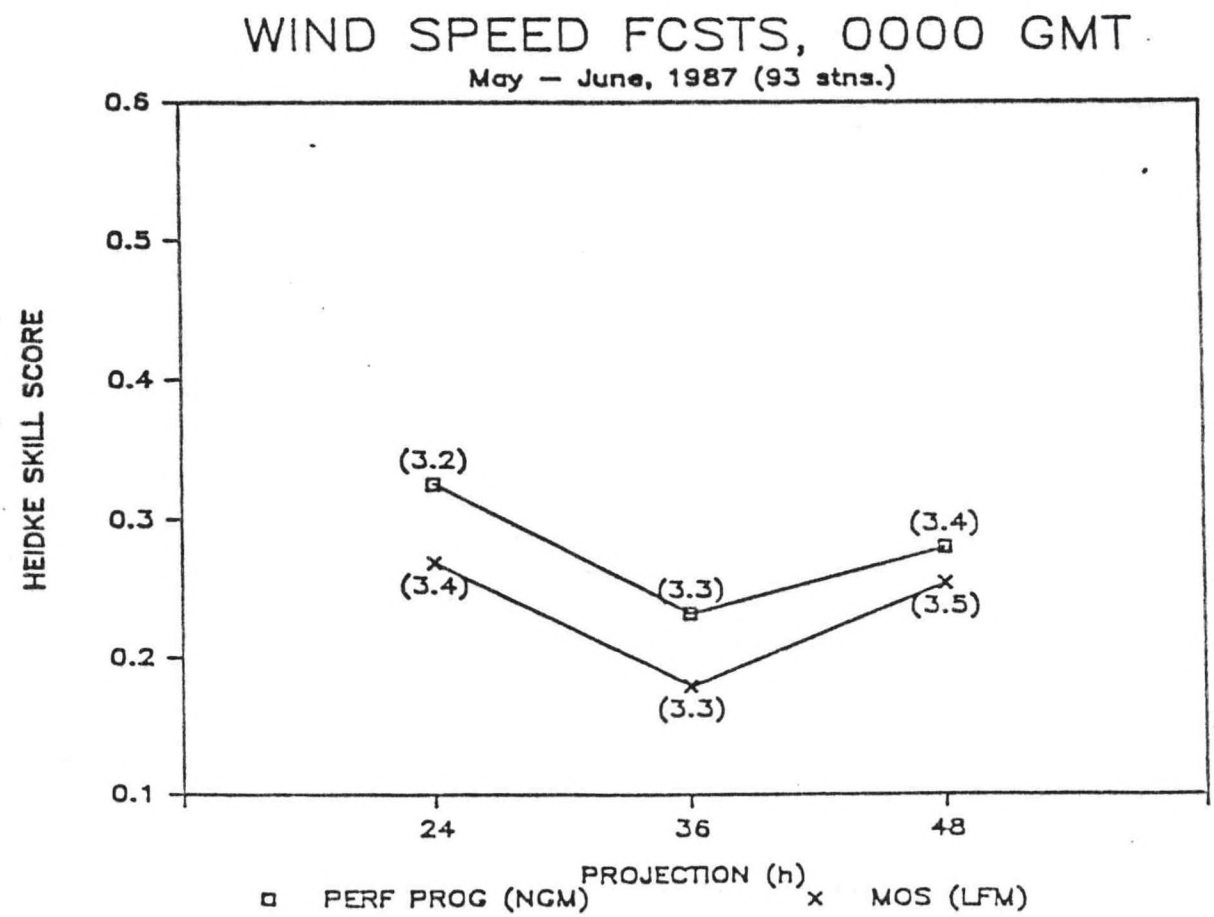
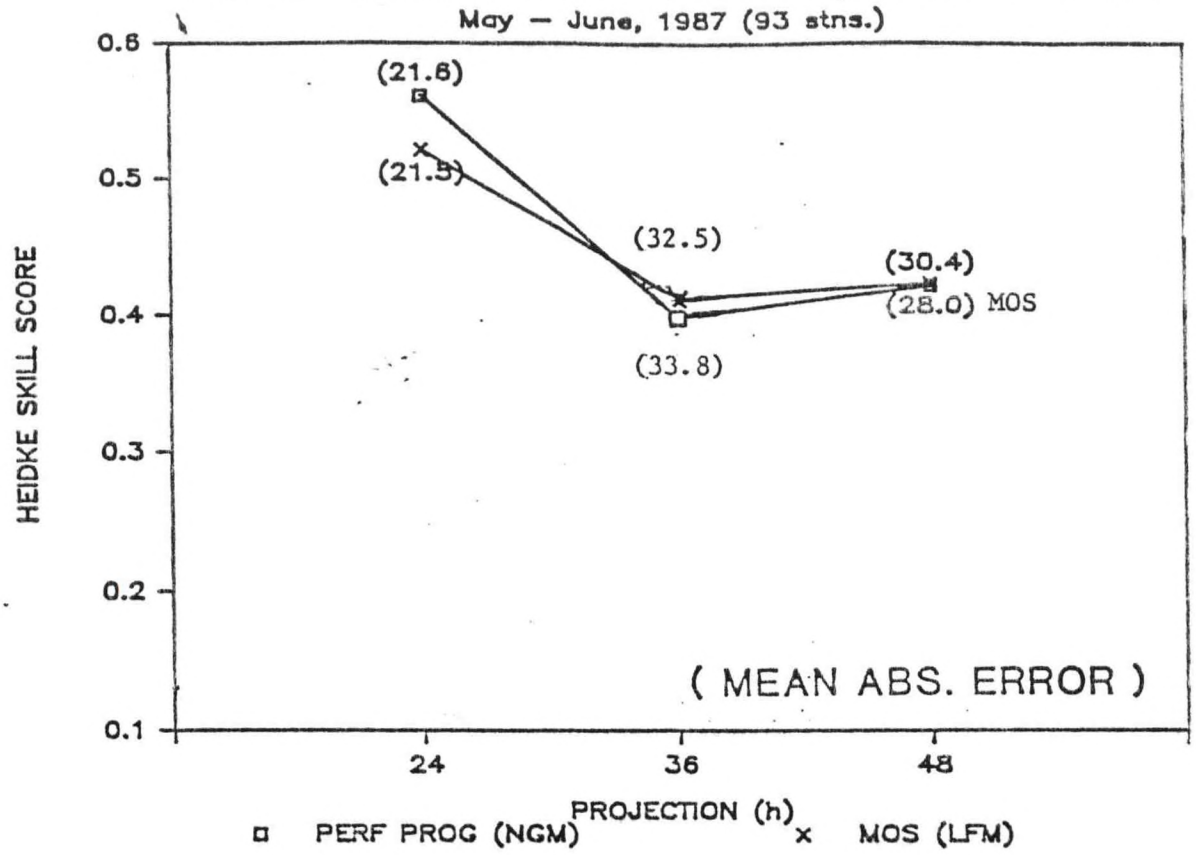

WIND SPEED FCSTS, 0000 GMT
May – June, 1987 (93 stns.)
HEIDKE SKILL SCORE
0.6
0.5
0.4
0.3
0.2
0.1
(3.2)
(3.4)
(3.3)
(3.4)
(3.5)
(3.3)
24
36
48
PROJECTION (h)
PERF PROG (NGM)
MOS (LFM)

Figure 4.


WIND DIRECTION FCSTS, 1200 GMT
May — June, 1987 (93 stns.)
HEIDKE SKILL SCORE
0.6
0.5
0.4
0.3
0.2
0.1
(21.6)
(21.5)
(32.5)
(30.4)
(28.0) MOS
(33.8)
(MEAN ABS. ERROR)
24
36
48
PROJECTION (h)
PERF PROG (NGM)
MOS (LFM)

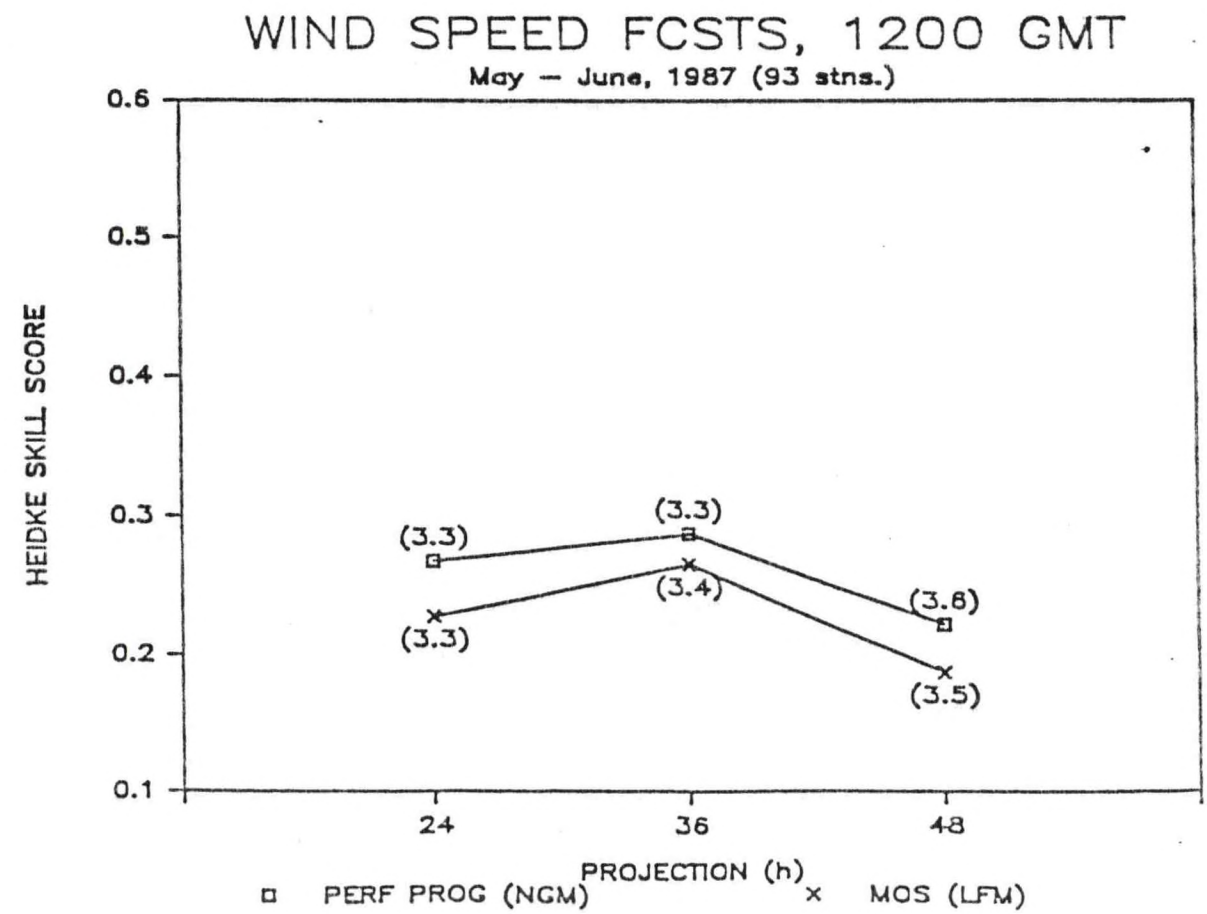

WIND SPEED FCSTS, 1200 GMT
May — June, 1987 (93 stns.)
HEIDKE SKILL SCORE
0.6
0.5
0.4
0.3
0.2
0.1
(3.3)
(3.3)
(3.3)
(3.4)
(3.6)
(3.5)
24
36
48
PROJECTION (h)
PERF PROG (NGM)
MOS (LFM)

Figure 5.