



PACIFIC REGION TECHNICAL NOTES

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BUST FORECAST - AND AN ATTEMPTED EXPLANATION

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On February 17, 1978 the forecasts issued by the Pacific Weather Center for southwestern B.C. indicated that February 18 would be a rather reasonable day with cloudiness and sunshine being forecast both for Victoria and Vancouver. No rain was expected. The forecasts that were issued are attached (Figures 1 and 2) and show that the first indication of some precipitation was forecast at 5 am. February 18. The 10 am. amendment indicated an increase in precipitation and by 2:30 pm the forecast read " Rain ending tonight". After the rain was over both Victoria and Vancouver had collected between 5 and 10 mm of rain. The same system left the following amounts of precipitation on other Vancouver island communities:

1. Gomox 9mm
2. Estavan Point 20mm
3. Spring Island 36mm
4. Alert Bay 14mm
5. Tofino 14mm
6. Port Hardy 10mm

The question of course is ; how could a relatively significant precipitation system escape being forecast one day in advance?

DISCUSSION.

The satellite pictures Figures 3 to 6 show a rather interesting sequence of events. The enhanced Ir picture of February 17, 1515Z shows a circular area of clouds of about 5 degrees latitude diameter with very cold cloud tops (about -65 degrees C.) located at position A. The visible imagery of February 17, 1815Z shows that this cloud deck is indeed circular in shape and the shadow that is cast on a lower cloud deck confirms that the tops of the clouds are relatively high. The position of this feature is shown at B. The ir picture of February 17, 2145z still shows the circular cloud feature at position C and strongly implies that this cloud system is not associated with clouds to the west but is a system of its own which has maintained its shape and intensity for some considerable time. By February 18, 1415Z the system is breaking up over Vancouver Island at location D while a similar system has formed at position E.

When the cloud areas are transferred to the 250 mb. analyses it seems that they are located on the anticyclonic side of the Polar Jet and in an area of maximum anticyclonic curvature. Furthermore, the cloud mass appears to move in relation to the wind maxima at the Polar Jet level but well to the south of the jet maxima.

Figures 10 and 11 show the 500 mb. prognosis and the verifying analysis for February 18, 1200Z and both of these charts show Vancouver island under the influence of a strong ridge with light anticyclonic vorticity advection over the area.

Examination of the surface reports during the period in question revealed that the precipitation was generally convective in nature and that reports of moderate intensity of precipitation were not infrequent.

CONCLUSIONS

1. Computer produced prognoses may in some instances not be able to forecast significant meteorological events.
2. Satellite imagery may provide a way by which some of the short-comings of computer produced prognosis can be corrected.
3. The foregoing illustration implies that certain features on satellite imagery can easily be recognized and will appear on some future satellite imagery hopefully showing about the same relationships to the flow patterns that appeared in the original observation.
4. The data base at the PWC using Goes imagery is about one year, and this same feature has been observed on two other occasions, but the cloud system never entered our forecasting area and remained over the data sparse eastern pacific.
5. A cloud system showing the following characteristics on satellite imagery may produce significant precipitation and not be handled adequately by computer produced prognoses:
 1. Circular shape, about 5 degrees latitude in diameter.
 2. Cold cloud tops (less than -55 degrees C.)
 3. Located on the anticyclonic side of the Polar Jet.
 4. Associated with the jet-stream Maxima.
 5. Clouds will likely be convective in nature.

FPCN11 CYVR 181800

FORECASTS FOR BRITISH COLUMBIA ISSUED BY ENVIRONMENT CANADA
AT 10 AM PST SATURDAY 18 FEBRUARY 1978 FOR TODAY AND SUNDAY

GREATER VANCOUVER

LOWER MAINLAND

EAST VANCOUVER ISLAND.

TODAY. CLOUDY WITH SHOWERS

SUNDAY. CLOUDY WITH SUNNY PERIODS. HIGHS TODAY AND SUNDAY 7 TO 9. LOWS
TONIGHT ZERO TO PLUS 2

GREATER VICTORIA

TODAY. CLOUDY WITH SHOWERS

SUNDAY. CLOUDY WITH A FEW SUNNY PERIODS. HIGHS BOTH DAYS 7 TO 9. LOWS
TONIGHT ZERO TO PLUS 2

FPCN11 CYVR 182230

FORECASTS FOR BRITISH COLUMBIA ISSUED BY ENVIRONMENT CANADA
AT 2.30 PM PST SATURDAY 18 FEBRUARY 1978 FOR TODAY AND SUNDAY
WITH AN OUTLOOK FOR MONDAY

GREATER VANCOUVER

LOWER MAINLAND

EAST VANCOUVER ISLAND.

TODAY. RAIN ENDING TONIGHT

SUNDAY. MOSTLY CLOUDY. LOWS TONIGHT 2 TO 4. HIGHS SUNDAY 7 TO 9

MONDAY OUTLOOK SUNNY WITH A FEW CLOUDY PERIODS

GREATER VICTORIA.

TODAY. RAIN ENDING TONIGHT

SUNDAY. CLOUDY WITH A FEW SUNNY PERIODS. LOWS TONIGHT NEAR 3 HIGHS

SUNDAY NEAR 8

MONDAY OUTLOOK. MOSTLY SUNNY

FPCN11 CYVR 171800

FIGURE 1

FORECASTS FOR BRITISH COLUMBIA ISSUED BY ENVIRONMENT CANADA
AT 2.30PM PST FRIDAY 17 FEBRUARY 1978 FOR TODAY AND SATURDAY
WITH AN OUTLOOK FOR SUNDAY

GREATER VANCOUVER

LOWER MAINLAND

EAST VANCOUVER ISLAND.

TODAY. CLOUDY.

SATURDAY. SUNNY WITH A FEW CLOUDY PERIODS. LOWS TONIGHT NEAR ZERO.

HIGHS SATURDAY NEAR 8

SUNDAY OUTLOOK. MOSTLY SUNNY

GREATER VICTORIA.

TODAY. CLOUDY

SATURDAY. SUNNY WITH A FEW CLOUDY PERIODS. LOWS TONIGHT NEAR ZERO.

HIGHS SATURDAY NEAR 8

SUNDAY OUTLOOK. SUNNY WITH A FEW CLOUDY PERIODS

FPCN11 CYVR 180330

FORECASTS FOR BRITISH COLUMBIA ISSUED BY ENVIRONMENT CANADA
AT 8.00 PM PST FRIDAY 17 FEBRUARY 1978 FOR TONIGHT AND SATURDAY
WITH AN OUTLOOK FOR SUNDAY

GREATER VANCOUVER

LOWER MAINLAND

EAST VANCOUVER ISLAND.

TONIGHT. CLOUDY

SATURDAY. CLOUDY BECOMING SUNNY IN THE AFTERNOON. LOWS TONIGHT ZERO TO PLUS 2. HIGHS SATURDAY NEAR 8

SUNDAY OUTLOOK... MOSTLY SUNNY

GREATER VICTORIA.

TONIGHT. CLOUDY

SATURDAY. CLOUDY BECOMING SUNNY IN THE AFTERNOON. LOWS TONIGHT ZERO TO PLUS 2. HIGHS SATURDAY NEAR 8

SUNDAY OUTLOOK... MOSTLY SUNNY

FPCN11 CYVR 181300

FORECASTS FOR BRITISH COLUMBIA ISSUED BY ENVIRONMENT CANADA
AT 5.00 AM PST SATURDAY 18 FEBRUARY 1978 FOR TODAY AND SUNDAY

GREATER VANCOUVER

LOWER MAINLAND.

TODAY. CLOUDY WITH A FEW SHOWERS IN THE MORNING. HIGHS TODAY 7 TO 9. LOWS TONIGHT NEAR ZERO.

SUNDAY. CLOUDY WITH SUNNY PERIODS. HIGHS SUNDAY 7 TO 9.

EAST VANCOUVER ISLAND.

TODAY. CLOUDY WITH A FEW SHOWERS. HIGHS TODAY 7 TO 9. LOWS TONIGHT MINUS 2 TO ZERO.

SUNDAY. CLOUDY WITH SUNNY PERIODS. HIGHS SUNDAY 7 TO 9.

GREATER VICTORIA.

TODAY. CLOUDY. A FEW SHOWERS THIS MORNING. HIGHS TODAY 7 TO 9. LOWS NEAR ZERO.

SUNDAY. CLOUDY WITH SUNNY PERIODS. HIGHS SUNDAY 7 TO 9.

1415 18FE78 32E-2EC 00331 19251 UC2

B

2145 17FE78 32E-12A 00601 22151 SB6

FIGURE 5

C

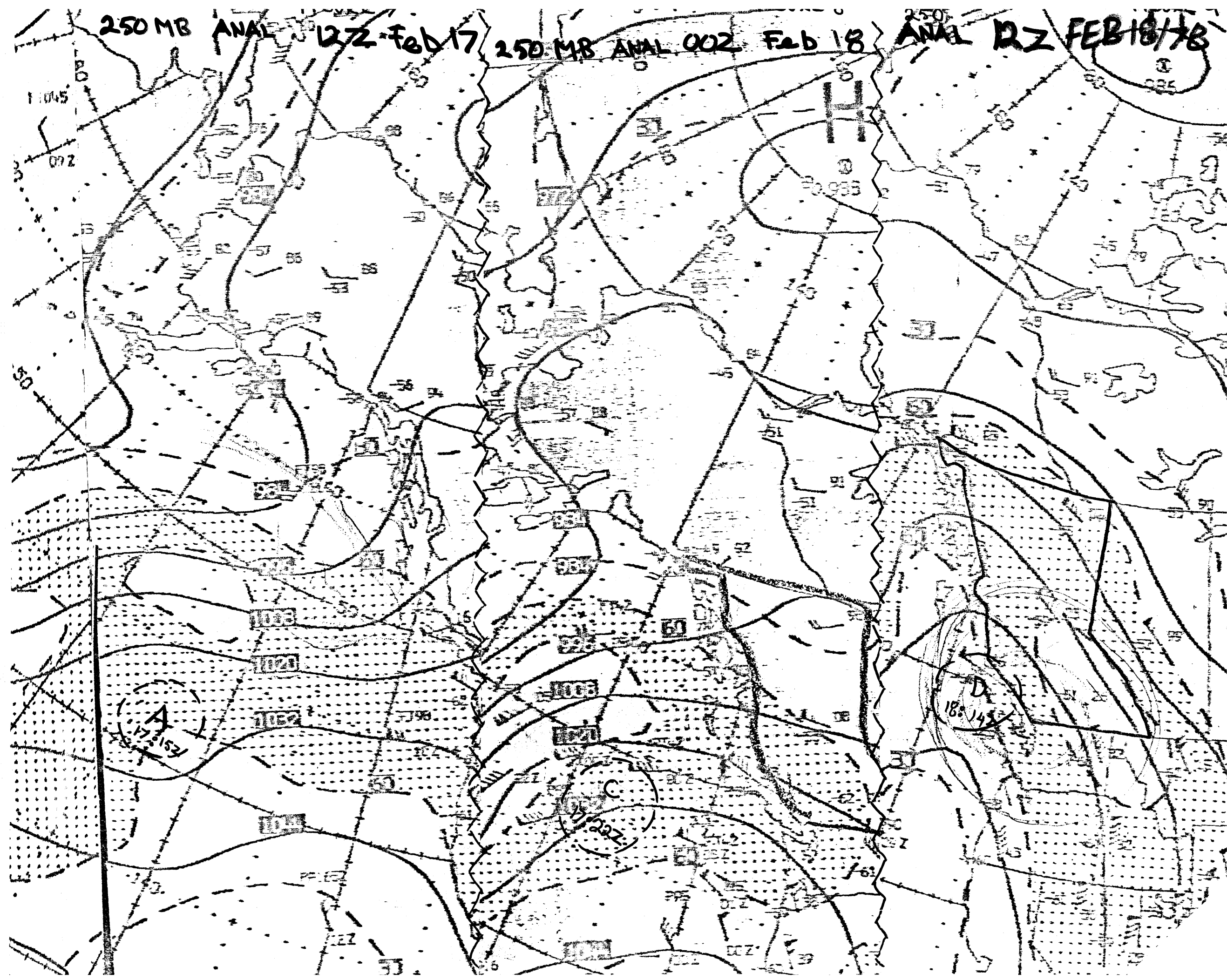
1415 18FE78 32E-2EC 00331 19251 UC2

FIGURE 6

E

D

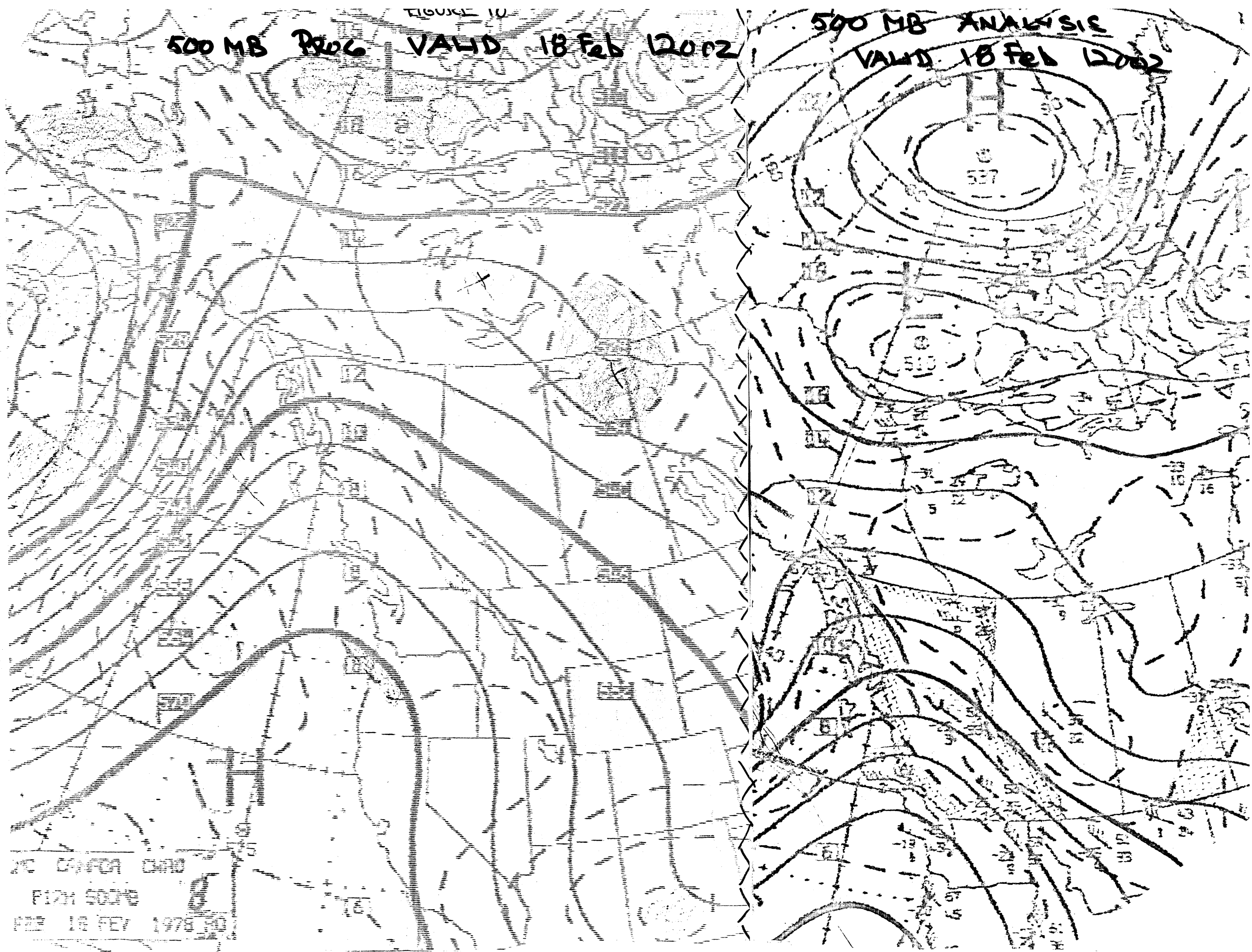
12Z FEB 18/78



500 MB PROG VALID 18 Feb 1200Z

FIGURE 10

500 MB ANALYSIS
VALID 18 Feb 1200Z



PC CHAPIN CHND
F12M 500MB
FEB 18 FEB 1978