

CHATS WITH THE WEATHER MAN

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ANNOUNCEMENT: The weather man, you know, draws pictures of the weather. In our chat with one of the meteorologists of the United States Weather Bureau today, he gives us a little lesson on the appreciation of that meteorological art on which forecasting is based.

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How does the forecaster do it? Some folks seem to think the forecaster uses some mysterious hidden method to predict the weather.

He makes his forecast. That forecast of coming weather is broadcast and telegraphed over the country. Practically at the same time, a complete picture of the main facts on which the forecast was made is mailed out from each district forecast center.

I refer to that daily weather map you see posted up in the post office and other public places. That map, with its circling lines around centers marked "High" and "Low" shows in graphic form the state of the weather at the time observations were taken at the many different stations scattered throughout the country. There on that map you have the salient features on which the forecast was based.

Mr. Welby R. Stevens, of the forecast division of the United States Weather Bureau, points out that the ceaseless changes in our weather are due almost entirely to the comings and goings of those "Highs" and "Lows" and the winds that go with them.

The "Low" on the map marks the center of a low pressure area of depression or disturbance, as the meteorologists speak of it. As you will notice, on any daily weather map you may see in a public place or on the smaller maps published in the newspapers of some cities, a "Low" takes in a lot of territory. On the average, the "Low" is between 600 and 1000 miles across. Sometimes, however, you will see a "low" as much as 2000 miles in diameter. Usually a "low" will move from some westerly to some easterly point.

However, you will notice from those little arrows on the weather map, that the wind does not blow from the same direction that the "low" is moving, except in a certain part of the disturbance. As you see from those arrows, the winds circulate around the "LOW" in the reverse direction to that of the hands of a clock.

The temperature to the south and east of a "LOW" on our map is com-

paratively high, Mr. Stevens says because in these parts of the LOW the wind is coming from some southerly quarter. On the west side of the LOW, on the other hand, the air is comparatively cold because the wind is from some northerly direction.

Associated with LOWS we usually get rain, Mr. Stevens points out. Most of the rain is usually in the eastern half of the LOW, however. Clouds are almost entirely lacking on the west side of a LOW.

You will notice that between two LOWS there is always a HIGH. In fact, as Mr. Stevens remarks, you could no more have two LOWS without an intervening HIGH than you could have two valleys without an intervening hill or other rise of ground.

The HIGH or high pressure area is almost the direct opposite of the LOW. Whereas with a LOW comes rain, we generally associate the HIGH with fair weather.

And you will notice that in a HIGH the winds circulate in the opposite direction from the way they move in the LOW. As a HIGH advances, there is a decided drop in the temperature in the eastern part of it where the winds are from the north. After the center of a HIGH has passed, there is a decided rise in temperature on the western side of it, where the winds are from the southerly direction.

There you have the general characteristics of those HIGHS and LOWS on the weather map. Of course, you know how our meteorological map artists find out where to put those HIGHS and LOWS. From its stations throughout the country the Weather Bureau gets the barometer readings. The reading for each station is entered on the map in its proper location. Those lines, called isobars, are then drawn through the places that have the same barometric pressure. For example, the line marked 30 passes through points where the barometer readings are all reported to be 30 inches.

All right, on one side of that line, the readings are higher than 30 inches. For each one tenth of an inch increase, another line is drawn until a crest or center is located and marked HIGH. On the other side, the pressures are less than 30 inches and are drawn for each one tenth of an inch decrease until the center is located and marked LOW.

The weather map makers work fast. The reports flashed in by wire and quickly entered and the lines drawn to give the picture of current weather conditions. We call that the daily weather map, because it is issued every week day, but it is really a snap-shot of the weather the country over at the time the observations were taken. Those HIGHS and LOWS are moving. The chief job of the forecaster is to interpret just how that ever-shifting traffic of HIGHS and LOWS will move.

To get a motion-picture of our national weather, we compare the maps from one day to the next and see how those HIGHS and LOWS change their positions.

From such comparisons, it is clear that the great majority of LOWS that originate in or pass over the United States move out to sea near Newfoundland.

LOWS may develop anywhere, but certain parts of the country seem more favorable to their development than others. For example, many originate over Colorado, Texas, the Gulf of Mexico and the Southeastern States. A forecaster, Mr. Stevens tells me, watches those regions very carefully for the first indications that a storm is brewing.

Once a LOW forms it doesn't move along its path at the same rate from day to day or season to season. A LOW moves fastest in winter and slowest in summer, and makes on the average about 600 miles a day. It moves faster in the Northern States than in the Southern.

HIGHS usually move into this country either from the Pacific Ocean or from Canada. They advance eastward and southward until they get to the Atlantic states and then either turn toward the northeast or move on toward Bermuda. Most of the HIGHS which come from Canada form in the Mackenzie River Basin or farther north over the Arctic Ocean, those are the ones that usually bring our cold waves.

That in a very rough general way is how HIGHS and LOWS move. If all HIGHS and LOWS acted that way, Mr. Stevens says, forecasting would be comparatively simple. And if you think there is anything simple about it, just try it. As I said before, on that daily weather map you have the chief data on which the regular forecaster bases his forecast.

The trouble in the forecasting business is that so many HIGHS and LOWS don't follow the general run of them either in speed of movement or direction. And the weather conditions that attend them are often not what you might expect from what happens most of the time. In every case, the forecaster has to decide from the evidence at hand and his own long experience in reading weather maps, whether the HIGH or LOW is going to behave in a normal way.

In this shifting of HIGH and LOW pressure areas, the traffic sometimes gets blocked. In fact, Mr. Stevens says that nearly every weather map presents a variety of new problems the forecaster must solve.

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**ANNOUNCEMENT:** This discussion of some of the main features of the daily weather map has come to you as a presentation of Station \_\_\_\_\_ and the United States Department of Agriculture.

# **National Oceanic and Atmospheric Administration**

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