

Office of Communications of the Navy Department by distant control connection with the naval radio station (NAA) at Arlington, Va.

The reports are expressed in the regular Weather Bureau Code, which may be translated at sight after a very short study of the key to the system. These broadcasts afford the means of the widest possible distribution of the twice-daily weather reports from all parts of the country for the use of both the Army and the Navy, commercial and Government aviation fields, business organizations and individuals who may have need of the information at an earlier hour than has been possible to release it.

Two other broadcasts are made at 11 a. m. and 11 p. m. for the benefit of European weather services. The weather reports in these broadcasts are expressed in the International Numeral Code. Information relative to that code may be obtained on application to the Weather Bureau at Washington, D. C.

FREE-AIR CONDITIONS IN NORTHEAST OKLAHOMA FAVORABLE TO LOCAL PRECIPITATION

J. A. RILEY

The official in charge of the Weather Bureau kite station at Broken Arrow, Okla., writes as follows regarding the free-air conditions favorable to the occurrence of precipitation at his station:

I visualize the conditions under which precipitation occurs in this region under pressure distributions of this kind as a ridge of air which takes the place of a mountain range over which the winds are blowing, with precipitation on the windward side. A number of times when such a condition occurred we could not get a kite up or it was unsafe. We felt sure that a south wind was blowing at some distance aloft, and we arrived at this conclusion by the sound of some machinery which runs night and day south and southeast of the station. This can hardly be heard when north winds prevail at all altitudes. But if there is a south wind anywhere within the first kilometer, the sound is plainly audible. On November 9, 1927, we made a flight in such a condition. Shortly after the head kite was launched in a northeast wind the surface wind practically died out, and the light fog became denser throughout the flight and was dense at the end. The kites veered through east and south into a southwest wind at the highest point reached. It had been raining for some time before the flight with a moderate shower from 7:08 a. m. to 7:18 a. m. The weather map shows a slight bulge of the HIGH just north of us on that morning, and rain all over the southern side of the HIGH in the Eastern States. We have no upper air data here except our own but I am of the opinion that these rains were caused by southerly winds rising and flowing across the HIGH.—*J. A. Riley.*

While it was impossible to obtain pilot-balloon observations over the region near to Oklahoma because of rain and low clouds, the kite flight at Due West, S. C., revealed a somewhat similar structure in the free air above that place from which it may be inferred that there was a very sharp shift in the wind aloft on the boundary between relatively cold lower airmasses and a southerly current above.—*Welby R. Stevens.*

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THE WIDESPREAD MENACE OF HAIL¹

By S. D. FLORA

The year 1927 was characterized by six days, each having very severe hailstorms in Oklahoma, Kansas, eastern Colorado, and Texas. The total crop loss from these storms aggregated from five to seven millions. The exact total due to hail alone can not be determined since it is impossible to segregate losses due to hail and high winds combined. The days with severe hailstorms were May 4-5 and June 1-4, 1927.

The total estimated loss in 1927 from 298 storms was in excess of \$15,000,000. In 1926 there were 295 storms and a total loss of \$12,000,000. In 1925 the number of storms was only 225.

In the States of Oklahoma, Kansas, Colorado, Texas, Iowa, Illinois, and Nebraska single storms wrought a damage in excess of a million dollars and an outstanding storm in Kansas on June 2 caused estimated loss of two millions because of the destruction of 30 square miles of promising wheat about ready for the harvest.

Reference is made to notable storms throughout the United States in recent years.

CHINOOK EFFECTS IN ALBERTA, JANUARY 4, 1928

Mr. A. Griffin, of Brooks, Alberta, submits the following:

Jan. 4, 1928, 3 p. m. It may be worth reporting that it rained 0.03 inch this morning between 9:30 and 11 a. m. The raindrops were small but did not freeze until they reached the ground. Temperatures recorded to-day are as follows:

| | ° F. | | ° F. |
|-------------|------|------------|------|
| 9:00 a. m. | 11 | 1:30 p. m. | 24 |
| 11:30 a. m. | 17 | 3:00 p. m. | 32 |
| 12:30 p. m. | 24 | 3:30 p. m. | 36 |

Light chinook blowing by 3 p. m., eaves dripping and snow softening perceptibly. The temperatures for preceding days are as follows:

| | ° F. | ° F. |
|--------------------|------|-----------|
| Jan. 1, 1928, max. | -24 | min. -38. |
| Jan. 2, 1928, max. | -11 | min. -33. |
| Jan. 3, 1928, max. | 14 | min. -26. |
| Jan. 4, 1928, max. | 32 | min. -10. |

At 3 p. m. barometer falling slightly from 26.63 inches at 9 a. m. Cloudy up to about noon, low clouds. Cleared up shortly after noon.

Mean of maximum and minimum temperatures for December, 1927, was -2.7° F. and average for the 12 preceding Decembers is 17.9° F.

The weather chart for January 4, 8 a. m., seventy-fifth meridian time, shows a rather large area of higher temperatures in the last 24 hours stretching from Alberta south to Helena, Mont., the eastern edge of which had not yet reached Brooks Station.—*A. J. H.*

¹ Abstract.