

CHATS WITH THE WEATHER MAN

Friday, April 14, 1933.

(FOR BROADCAST USE ONLY)

Reading time: 10 minutes.

ANNOUNCEMENT: And here's the Weather Man with more new and interesting facts about the weather. In today's Chat, he tells us about the new teletype weather maps -- the latest wrinkle for putting up-to-the-minute information about flying weather along the airways in the hands of our mail and passenger pilots. He brings you this Chat from the United States Weather Bureau.

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Today, we're aboard one of the big transport planes zipping our way through the clouds from New York to Chicago.

When we left New York, the air was still -- and the sun shining -- and the sky fairly clear. But, as we speed westward, we seem to be running into bad weather. The clouds are lowering and thickening -- and the sun is out of sight -- and we're battling a strong head wind. We bump out of one air pocket right into another. Our plane tilts from side to side as some invisible monster tugs and jerks at the wings.

Ahead in the cockpit, our pilot sits with radio headphones clamped over his ears, studying a weather map.

Apparently, the map and the radio give warning of still worse weather on toward Chicago. The pilot is throttling down his motor and we're slowly losing altitude. He has decided he won't try to make the next regular airport; he is dropping down to an emergency landing field just ahead to wait until the storm blows over. He can't take too many chances.

We're now only a hundred feet above the ground -- and now the wheels are touching the field -- and now we're bumping along to a stop.

While we're waiting for the storm to pass over, let's find out a little something about those mysterious radio messages and weather map that warn our pilot of dangerous flying weather along his course.

Our pilot got his radio report on flying conditions on toward Chicago from one of the network of radio stations operated by the airways division of the Department of Commerce. He gets those reports every hour.

The pilot also has one of the special weather forecasts for aviation sent out every four hours from the 14 district aviation forecast centers.

He also keeps in touch by radio with the airline's plane dispatchers to get directions on whether to land or go ahead.

Then, you remember, we saw our pilot studying a weather map.

We look at the pilot's map and find it covers the eastern part of the country extending not quite to the Mississippi river. The map is a regular jumble of figures, and arrows, and symbols of this and that kind. To us, it looks much like a Chinese puzzle. But, to the pilot or the airway official, that map gives a complete and clear picture of flying weather throughout the entire eastern United States. He sees lines, called isobars, passing through places having the same barometric pressure; he looks at the figures, and arrows, and symbols at Buffalo, New York, and reads, "Ceiling, unlimited -- sky, scattered clouds -- visibility, only 5 miles because of smoke -- temperature, 42 degrees -- dew point reading six degrees below the temperature -- wind, blowing from south at 11 miles an hour." The pilot or official sees the same kind of weather information at other towns and cities throughout the East.

But just how recent is that information? Is that map a day or so old?

No sir! The airmen get those maps while the weather facts are still sizzling hot. You may think I'm exaggerating a bit. But just listen to W. R. Gregg's account of the way those maps are prepared and distributed. Gregg is in charge of the aerological division of the Weather Bureau. The men in the Weather Bureau gather their facts about the weather and make those maps up in manuscript form. They turn those maps over to the airways division of the Department of Commerce to get out to the airlines. Those maps go out from Cleveland for the East -- and from Kansas City for the Mid-West -- and from Oakland for the West, every four hours.

Gregg tells me the weather men gather facts about weather conditions, and make the manuscript maps, and through the Commerce division teletype system get printed maps in the hands of pilots and officials along the airways -- all in less than an hour's time. All in less than an hour, mind you.

Just to illustrate the speed with which the weather maps are made and distributed, let's trace through the story of the map we saw in the hands of the pilot on our plane from New York to Chicago.

Weather observers throughout the entire East took records on the condition of the sky, and the visibility, and temperature, and wind direction, and so on, and flashed those records to Cleveland by radio, teletype, and telegraph. The weather men in Cleveland wrote those records in on a map. Within 14 minutes after the weather men had finished their map, copies of that map were in the hands of the men on our big airways throughout the East. When our New York-to-Chicagopilot picked up that map at our last regular stop, he had a picture less than an hour old of weather conditions from the tip of Florida to Maine, and from the Atlantic inland almost to the Mississippi.

But how can we send a map from Cleveland to, say, Atlanta, Georgia, some three or four hundred miles away -- all in less than a quarter of an hour?

That is done by the teletype system -- the same system our big press associations now use in sending news from their district news centers to newspapers throughout the country.

The operator in the district offices of the press associations sits down before a machine something on the order of a typewriter. His machine is connected by telegraph wire with other machines -- other machines also much like big typewriters -- in newspaper offices in dozens of other towns and cities. When the operator in the district office hits the letter "A" on his machine, every machine on that circuit strikes the letter "A". If the district operator writes, "Train wreck kills 100 persons," every teletype machine on that circuit writes the same thing. By the time the district operator finishes "typing out" his story, every newspaper on the circuit has exactly the same story in typewritten form.

The men who send out the aviation weather maps follow exactly the same system -- only they send maps instead of news -- and their machines are a little different from the teletype machines in newspaper offices.

The operator at Cleveland, or Kansas City, or Oakland, sits down at his teletype machine with a copy of the map the weather men prepared for him. His machine is connected by telegraph wire with other teletype machines along the main airways. Both the district operator's machine and the teletype machines out along the airways have blank maps stuck in them much the same as you stick a sheet of writing paper in a typewriter. The maps show the outlines of the states and some of our main towns and cities. The district operator now begins to type in on that map the picture of weather conditions.

But how can you type a map?

Well, you remember, I told you those weather maps are covered with queer-looking jumbles of letters, and figures, and dashes, and circles, and arrows. Each of those letters, and figures, and circles, and so on stands for a certain thing -- the condition of the sky, and temperature, and visibility, and other facts of interest to aviators. Those various figures and symbols appear on the keyboard of the teletype machine instead of the letters and figures you find on an ordinary typewriter. So, when the district operator wants to show a rain, or fog, or clouds at St. Louis, he types in a certain combination of letters, figures, and symbols on the map in his machine to show that particular weather condition. While he is typing on his machine in the district office, all the rest of the teletype machines on the circuit are typing exactly the same thing and at exactly the same place on the map.

The district operator at Cleveland, or Kansas City, or Oakland, may type in right opposite Chicago on his map, "U -- a plain circle -- 10 -- 42 -- minus 6 -- an arrow pointing north -- 11." In plain English, that means, "At Chicago, the ceiling is unlimited -- the sky clear -- visibility 10 miles -- temperature 42 -- dew point reading, 6 degrees less than the temperature -- and wind blowing from south at rate of 11 miles an hour." He types the same kind of information beside other key towns and cities on his map.

By the time the district operator finishes typing in weather information on the map in his machine, every airport on his circuit has a map giving exactly the same information. The men at the airports use these maps in dispatching planes and give copies of the maps to their pilots.

Before the days of the teletype, the airmen got weather maps only every 12 hours. Twelve hours is a mighty long stretch when it comes to flying weather. The weather can change a great deal in that time. At 8 o'clock this morning, the weather might be as fair as could be. By 8 o'clock this evening, we might be having a violent storm. But the air men no longer have to wait 12 hours for their maps. Thanks to teletype, they get new maps every four hours.

Gregg tells me the teletype system now covers 13,000 miles of airways and serves 74 stations.

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ANNOUNCEMENT: And that's the story of the teletype system for sending aviation weather maps to pilots and officials along our important airways. The Weather Man brings you another Chat from the United States Weather Bureau at this same time two weeks from today.

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# **National Oceanic and Atmospheric Administration**

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