

Quiz: RI.11-12.7

Read the passages. Then answer the questions.

Excerpt from “The Early History of the Airplane”
Orville and Wilbur Wright (author of excerpt is Orville)

Orville and Wilbur are describing their 1903 flyer that they flew in Kitty Hawk, North Carolina.

- 1 For two reasons we decided to use two propellers. In the first place we could, by the use of two propellers, secure a reaction against a greater quantity of air, and at the same time use a larger pitch angle than was possible with one propeller; and in the second place by having the propellers turn in opposite directions, the gyroscopic action of one would neutralize that of the other. The method we adopted of driving the propellers in opposite directions by means of chains is now too well known to need description here. We decided to place the motor to one side of the man, so that in case of a plunge headfirst, the motor could not fall upon him. In our gliding experiments we had had a number of experiences in which we had landed upon one wing, but the crushing of the wing had absorbed the shock, so that we were not uneasy about the motor in case of a landing of that kind. To provide against the machine rolling over forward in landing, we designed skids like sled runners, extending out in front of the main surfaces. Otherwise the general construction and operation of the machine was to be similar to that of the 1902 glider . . .
- 2 Before leaving for our camp at Kitty Hawk we tested the chain drive for the propellers in our shop at Dayton, and found it satisfactory. We found, however, that our first propeller shafts, which were constructed of heavy gauge steel tubing, were not strong enough to stand the shocks received from a gasoline motor with light fly wheel, although they would have been able to transmit three or four times the power uniformly applied. We therefore built a new set of shafts of heavier tubing, which we tested and thought to be abundantly strong. . .
- 3 During the night of December 16, 1903, a strong cold wind blew from the north. When we arose on the morning of the 17th, the puddles of water, which had been standing about camp since the recent rains, were covered with ice. The wind had a velocity of 10 to 12 meters per second (22 to 27 miles an hour). We thought it would die down before long, and so remained indoors the early part of the morning. But when ten o'clock arrived, and the wind was as brisk as ever, we decided that we had better get the machine out and attempt a flight. We hung out the signal for the men of the life saving station. We thought that by facing the flyer into a strong wind, there ought to be no trouble in launching it from the level ground about camp. We realized the difficulties of flying in so high a wind, but estimated that the added dangers in flight would be partly compensated for by the slower speed in landing.
- 4 We laid the track on a smooth stretch of ground about one hundred feet north of the new building. The biting cold wind made work difficult, and we had to warm up frequently in our living room, where we had a good fire in an improvised stove made of a large carbide can. By the time all was ready, J. T. Daniels, W. S. Dough and A. D. Etheridge, members of the Kill Devil Life Saving Station; W. C. Brinkley, of Manteo, and Johnny Moore, a boy from Nag's Head, had arrived.

