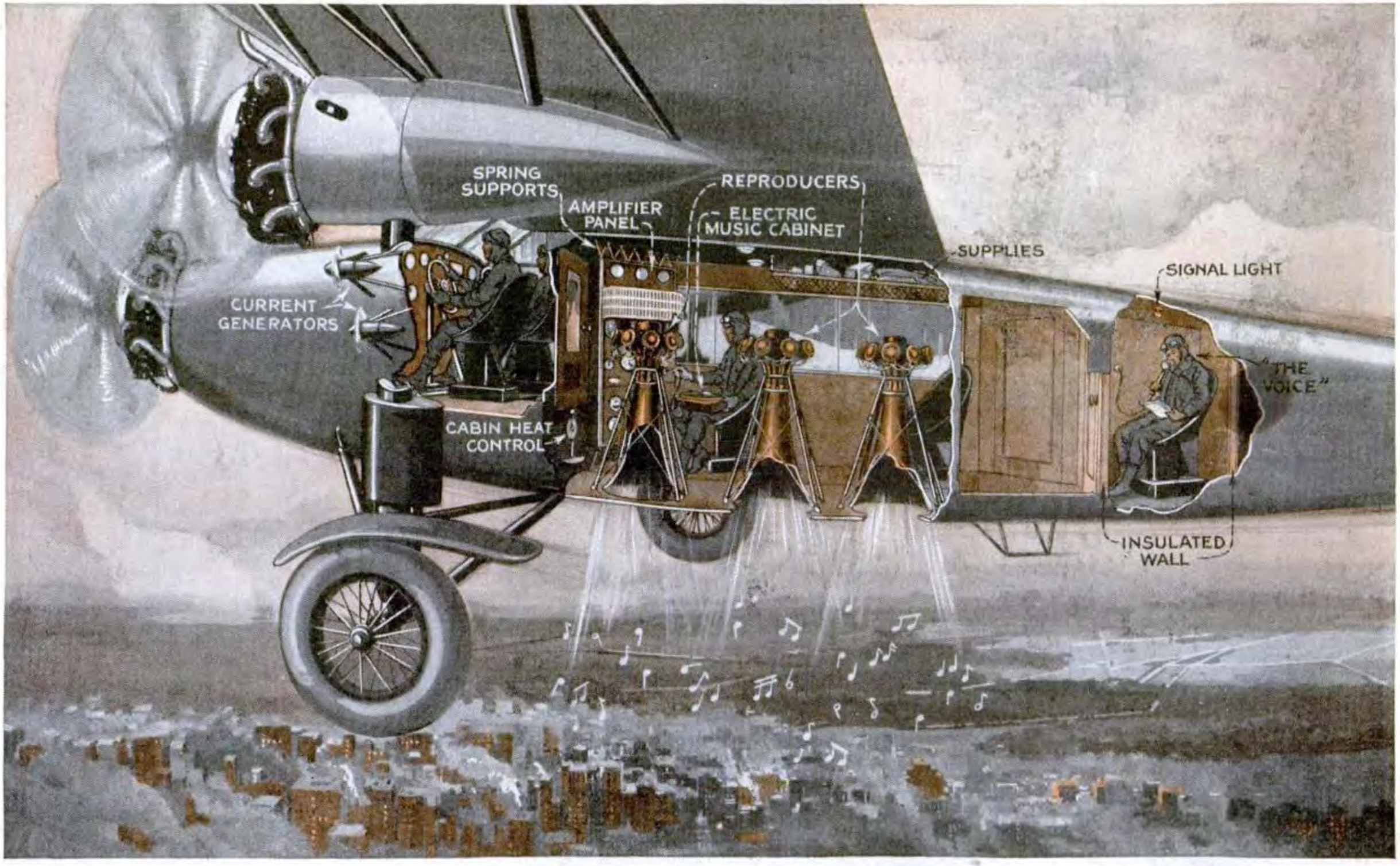


Photo Diagram of the "Voice of the Sky," a Powerful Tri-Motored Airplane Equipped with Giant Speakers That Can Make Its Announcer Heard on the Ground Far Below; a Portable Talking Machine Held in the Operator's Lap Provides Music

With an Enormously Extended Lower Wing, This Big Ship Has Carried a Neon Sign over Several Cities; **Note the Cluster of Inspection Mirrors Projecting beneath the Fuselage**

Flying Electric Billboards and Talking Airplanes Introduce Novelty in Outdoor Advertising

By PAUL D. PADDOCK

IT WAS two degrees below zero and he was in the middle of the street, but the man stopped to listen to a voice that seemed to be coming from the sky.

"Don't let your car freeze," it said cheerily.

The voice was coming from the sky! From a height of 3,000 feet, it was booming down, echoing in the streets, entering homes and closed cars, warning the motorist to repel the cold. The town crier of the twentieth century, the "Voice of the Sky" was aloft.

This marvelous five-mile voice—it actually has been heard that far and farther—is already familiar to millions but few know how a man can speak so clearly and so loudly from a roaring, tri-motored airplane, half a mile in the air and speeding along faster than the fastest train. Take the extra seat in the cabin and watch what goes on.

You are in a combination studio, laboratory, generating and broadcasting station, but the voice is not sent by radio. The startled citizens of the city below you, are hearing sound waves directly from the human throat except that the tones have been tremendously amplified. The seats on the left side of the cabin have been removed and, in their place, are three huge horns. Their bulging mouths open out on the underside of the fuselage. On top of each of these horns, are nine of the most powerful sound-reproducing units in the world, making twenty-seven in all. Each is pouring out the voice from the amplifying set, which is at the right of the door that leads to the pilot's compartment. Cooped up in a tiny booth, thickly insulated against the roar of the motors, is the actual source of the mighty voice, a young man, calmly speaking into a microphone. His words travel along

the little wire from the "mike," pass down through the amplifying set, into the reproducers and emerge from the big horns. By the time they leave, they have been magnified in the ratio of 1,600,000 to one. That is another way of saying that the voice of the one man has become greater than the combined shout of a huge army. The single speaker could drown out a stadiumful of college rooters. These sound vibrations are so powerful that, in ground tests, butterflies and other insects flying close to the horns were killed, small birds became stupefied and human beings became nauseated after a short exposure at close range. Such effects, of course, could not be produced from a moving airplane or at the lofty altitude at which you are riding.

Pilot Lew Gower eased the three whirring motors and the majestic Fokker with its six-ton load of gasoline, men and machinery, dipped from a graceful left bank and leveled off. He signaled "ready" by a downward jerk of his right arm to G. W. McCauley, crew chief and inventor of some of the plane's interesting equipment, who was seated before the control panel of the amplifying set. The panel is swung from special spring supports to deaden the shocks and vibrations. Electric current is generated by four little snub-bladed propellers, two tiny blurs on either side of the plane. These units are among the most amazing parts of the entire ship. They are driven by the wind and are so regulated that they spin at exactly so many revolutions per minute, no matter how fast the wind may be blowing or how rapidly the plane may be traveling after it has gained the speed that gives the propellers their proper momentum. The secret of their remarkable performance is an arrangement of weights and balances that give the propellers a slight twist if the speed should increase, regulating the pitch of the blades so that they cannot turn too fast.

Close-Up of the Inspection Mirrors; the Control Cabin of the Neon-Light Plane, and the Light Tubes on the Lower Wing

The Tri-Motored Bomber Rebuilt with an Enormous Lower Wing, to Carry the Neon Sign, and a Close-Up of the Glass Tubes

McCauley lifts a portable electric cabinet upon his knees, adjusts an electric record and sets the needle, which is held in a patented clasp that keeps it in the record grooves no matter at what angle the ship may sway and regardless of any bumps or vibrations. If necessary, this strange music box could be placed upside down on the ceiling and played without allowing the needle to fall from its path. The unit is plugged into the amplifier panel and the sprightly strains of a jazz orchestra go ringing down through the frosty air. Next, a short, sharp bugle call from a record. Then McCauley pulls out the music-box plug, tickles a small switch, and a little light flashes in the "padded cell" at the rear of the cabin, where Bert McGrath, who provides the actual voice and who probably has talked directly to more persons than any other living man, is seated at the microphone. "Hello," his voice booms out. "This is the 'Voice of the Sky.'" The tones fill the cabin, rivaling the drone from the three busy motors, although only a tiny fraction of the sounds' volume reaches the interior. The deeper notes cause the floor of the fuselage to vibrate. The effect is as though the plane were sliding over rough ground.

The voice continues for fifty seconds, when Gower gives another signal. The plane has sped from one end of a city suburb to the other. Now it is to turn back, just as a farmer turns his plow, for another "furrow" of sound. McCauley touches the switch to signal McGrath to stop talking, for the voice is not broadcast on the turns, the chief reason being that, when the ship banks, the horns are at an angle that would send the sound out into space instead of down upon the ground where it is wanted. The earth below seems to dip and wheel slowly about as the plane sends one wing deep down over the city, the other high into the blue of the open sky, seems to hesitate for an instant, and then settles down for another even flight over the wondering land below.

Again the signal from Gower that he is above "location" and has slackened speed slightly for a rate of sixty miles or so, as this pace is required in order that the messages may be heard more clearly. In twelve minutes, every section of the suburb has been covered. McCauley gives another signal, and now McGrath steps out of the broadcasting room to get a breath of fresh air and to stir about a bit during the cross-country dash for the next

Another Kind of Aerial Advertising; Painting a Word across the Sky in a Trail of Chemical Smoke

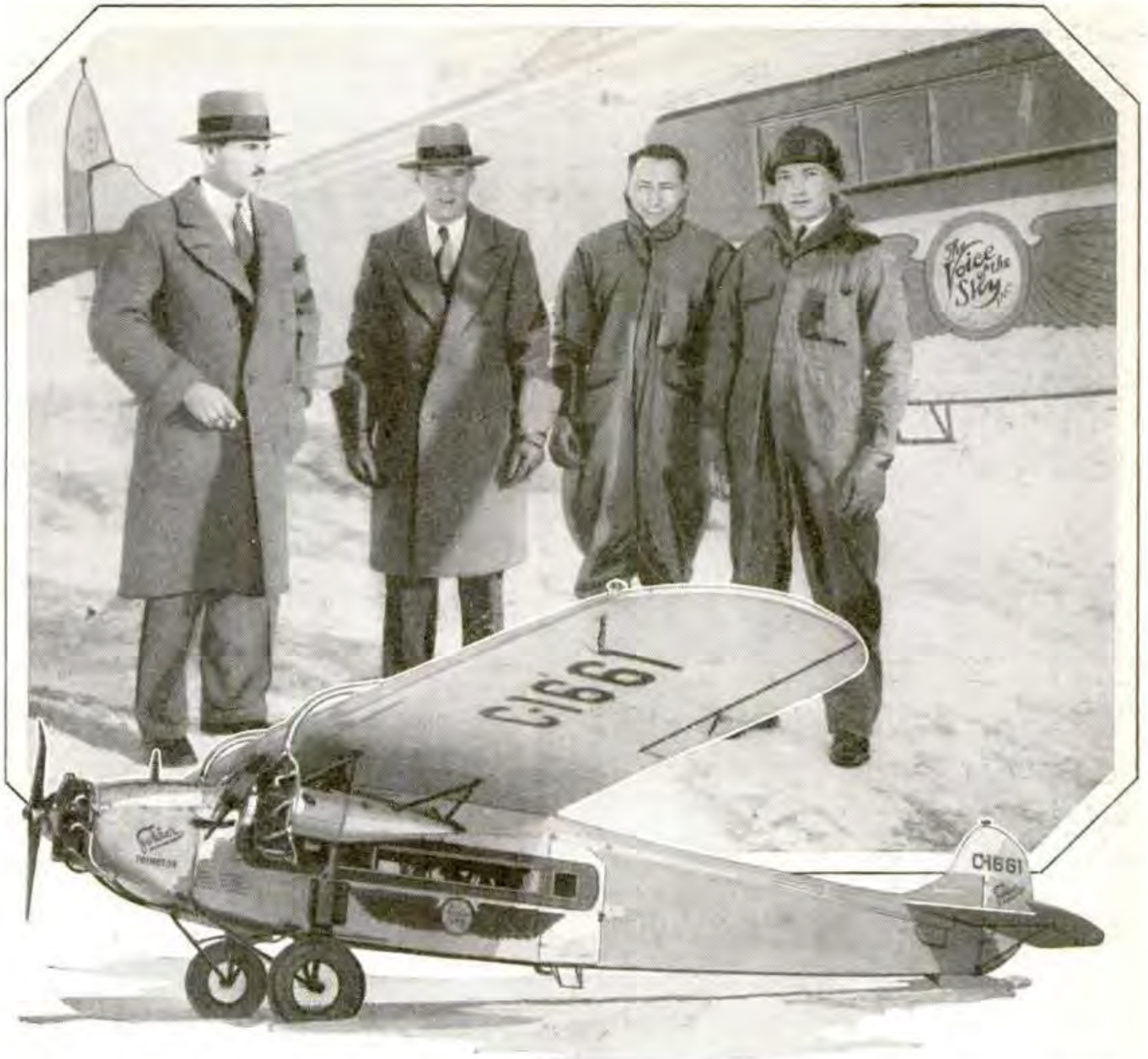
town. While shut in the booth, he cannot see out, for the compartment is tightly closed to exclude every sound but his voice from the sensitive microphone.

For twenty-two minutes, the plane soars over another city while the mysterious voice continues. Skaters halt on the ponds and stare up to listen, their faces tiny blurs against the ice. People come running out of their houses. Another dash across silent farm lands and the golden glaze of sun upon icy snow, and the voice is over a village. Like a huge, persistent bee, the big plane buzzes back and forth. Then away again for a dash at ninety miles an hour to the next audience. McCauley has made a minor repair of the microphone and has relieved Gower at the controls for a few moments while the set was not working. This is a versatile crew. All its members are flyers, inventors and skilled trouble shooters as well.

As the sun slips into a cloud bank and the night lights begin to wink among the cluttered sky-scrapers of the big city, the voice is silenced for the day and the Fokker snorts home to the warm and welcome hangar. At 5:15, exactly four hours and sixteen minutes since the ship hopped off, the big propellers stop on the landing-field runway. In those few hours, the voice has spoken to at least 1,000,000 persons, the plane has winged through 300 miles of zero air, and ten cities have been visited. Not a bad afternoon's work, although covering as many as thirty towns in a single day is not uncommon for this electric-lunged crier of the skies.

The plane, now in the hands of Mechanic H. E. Wendt, who usually accompanies the ship but remained at the hangar this time to make cowling for the motors, is one of three equipped to sing, play and speak from the skies. Years of research and a fortune are back of the apparatus that has made the sky voice possible. There was the problem of amplification. How to adjust the big air-cooled tubes and other delicate parts of the set. How to rig the generating system that supplies 2,500 watts of current at the necessary voltage and amperage to give the required results. How to build those small miracles, the generating propellers, so that they would keep a constant speed, regardless of wind conditions. Before the wind-power apparatus was used, an air-cooled engine was employed inside the cabin with a big scoop at the side to permit an inrush of fresh air. But the motor was a risk, it produced unpleasant fumes and did not perform as dependably as the tiny propellers.

The future possibilities of this idea are



The Operating Crew of the "Voice of the Sky" Standing beside Their Ship, and, Inset, the Three-Motored Fokker; the Loud Speakers Project through a Hole in the Cabin Floor

just beginning to be seen. In time of flood or fire, it could be utilized for warning whole communities. An entire army could be directed from the sky. Commanding officers could speak in code that the enemy would not understand.

The "Voice" was hauled into the hangar just as the three big motors of its friendly competitor in this new age of advertising from the skies, a huge biplane, equipped with neon gas tubes that automatically flash three different legends in glowing color from the underside of its lower ninety-four foot wing, were being warmed up for its brilliant journey over Chicago by night. This ship, although voiceless, is an interesting complement to the town crier that cruises the sky by day. The idea of using neon gas lighting from an airplane for advertising purposes, has been developed by Roland Rholfs who pilots the huge ship, a remodeled army bomber. Wind-driven propellers generate 8,000 volts of alternating current to operate the tubes which are protected with specially devised shock absorbers to prevent breakage at landings. The plane is equipped with a system of special lights and flares to be used in emergency descents or should the landing field lights fail. It had 450 feet of glass tubing that spelled three different signs to herald the name of two well-known makes of automobiles. According to Albert H. Miller, who watches results after a trip of the "Voice," sales of a popular brand of cigarets increased nearly fifty per cent everywhere in territory recently covered.