



STARK POSITION FINDER

Capt. Horace Stark, inventor, with Pilots Sam Griesner and Murl Estes, examining the new device for determining position

AERONAUTICS

## Position Finders Developed To Tell Pilot Where He Is

### Devices Take Complicated Figuring Out of Navigation By Translating Compass Bearings Into Map Location

ANOTHER of those air safety gadgets that make a pilot's cockpit as complicated as an income tax return but will make the plane as safe as a buggy ride and a lot more comfortable is being introduced to the industry.

It is the Stark Position Finder. It tells the pilot where he is and takes another element of complicated figuring and guesswork out of the science of flying. The first commercial models have been turned over to pilots of a leading airline at Washington Airport. A similar instrument has also just been developed by Glenn E. Markt of American Airlines.

#### Bearings

Invented by Capt. Horace Stark, Pennsylvania-Central Airlines pilot, the new instrument enables a pilot to translate radio compass bearings in a jiffy into his position on a map.

The position finder consists essentially

of a translucent map representing on a circle eight inches in diameter territory 520 miles across—an area large enough to cover ground lying 250 miles each side of the airway along which the plane is supposed to be flying.

Below the map are two translucent screens ruled with spaced parallel lines. The three plates can be turned.

If the pilot wishes to note where he is, he takes a bearing on a given radio station by means of his radio compass. He then turns one ruled plate until the lines are pointed in the same direction as the radio station. He repeats the procedure taking a bearing on a different station and using the other ruled screen. The line on one plate which points to the radio station to which it is adjusted will intersect the corresponding line on the other plate at the point where the plane is located.

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## Automatic Position Finder Is Developed in England

AN experimental model of a position finder which automatically tells an airplane pilot where he is at a given moment with only a small error has been successfully demonstrated at Hamble, it is reported in London.

The device, still very much in the process of development, consists of a pair of automatic direction finders, each tuned to a different radio station. Each is linked to a needle swinging on a point representing the station to which it is tuned; hence each needle points toward the plane. The point where the needles cross is the point where the plane is located. The two needles are, of course, located on a map of the region over which the plane is traveling.

Successful development of this device will mark another of the major safety advances in aviation that seems promised by instruments demonstrated within the last few weeks. Not only would it be another insurance against being lost, but it would be useful in medium-sized transport and military planes which cannot carry a separate navigator.

Collaborating in the development are O. G. E. Roberts of the Straight Corporation and J. A. McGillivray, chief wireless instructor of Air Service Training.

#### Direction Finder

An automatic direction finder, an instrument distinct from the position finder, which in itself is a guarantee of not getting lost, has been independently developed and demonstrated in the United States by the Sperry Gyroscope Company and the Radio Corporation of America.

This new scheme merely takes two automatic direction finders and operates on the well-known principle that the lines from the plane to the stations must intersect at the plane. By superimposing the lines on a map, in the form of needles that respond continuously to changes in the plane's position, the pilot can be kept informed of where he is.

Refinements in construction of the direction finders and in other parts of the equipment may mean some day that much of the laborious work of calculating one's position will be unnecessary. It should also make ground speed determination, still one of the not-so-easy-to-figure aeronautical facts, easier to determine.

The present equipment is still subject