BATHROOM MEDICINE CABINET

By W. E. Hill



What's New in World of Air Transportation



AST week this department began printing replies of airmen flying the country's big commercial airplanes to a questionnaire circulated by The Tribune in an effort to sift widely varying reports about what, if anything, is wrong with transport flying in the United States.

This week the replies to the questionnaire are continued. Four remaining questions to which the master airmen responded are as follows:

1. Some air line operators have charged that the federal radio beams are unreliable, treacherous, and not to be trusted as aids to navigation. What have been your experiences with the beams?

2. Should the beams be removed from the airways, or should the number of radio beam transmitters be increased and the older stations modernized to increase their efficiency?

3. What improvements in radio, lights, or other types of flying aids will make flying safer?

4. Where, in your opinion, does the responsibility lie for last winter's series of air line crashes?

Attacks upon the reliability of the radio beams have been made by certain high officials in one of the country's "big four" of the transcontinental lines, and also by a senatorial investigating committee. Yet 871/2 per cent of the pilots questioned on this point said the radio range beam signals were valuable aids to navigation and were reliable "most of the

The remaining 12½ per cent said they considered radio beams as unreliable. They reported that when they were forced to fly through or above clouds, so that sight of the ground was impossible, they used the beams merely as auxiliary aids to dead reckoning flights by compass.

Here is what seems to be the best representative answer to the question of beam reliability:

. . .

"There are three separate problems involved, and you can't segregate them so simply. You must control the ship in three directions when flying through fog or cloud.

"You must follow the designated airway, staying on the right side, so you use the radio range signal directed along the route. Third, you must compute your ground speed and apply it to your dead-reckoning problems so that you can estimate your progress along the airway at any particular moment, so you can check on the range stations along the route as you pass over them, and also on the intersecting legs of off-course stations.

"Theoretically the problem is simple. It is so many miles from A to B, and if you fly at a definite speed you will be right there in so many hours and so many minutes, provided you make the proper correction in the direction you fly to allow for direction and velocity of the wind. That is a mathematical problem.

"And under ideal conditions a trip can be flown by dead reckoning with fairly accurate results. However, here is what actually happens: With low ceilings there are no reports on winds aloft, and your estimation of the wind is a guess.

"The only thing we are sure of is that it is still just so far from A to B. So we must depend on the radio range just as far as we believe it can be depended on. Of course, some stations are known to have swinging beams, so we would not rely upon them too far from the transmitting

"I believe these troubles can and will be overcome, so I would say that radio ranges ARE reliable if we know just how much to expect of them.

"There remains the problem of static, which is one of reception in the aircraft and affects all radio signals alike. I don't mean the ordinary run of static you find when you try to tune in London on your broadcast set, but the continuous roar which ensues when flying through rain or snow under certain conditions.

"Imagine yourself listening to a telephone and have someone turn on a pneumatic drill in the same roomwhat can you do?

"First, you might imagine that the person on the other end of the wire said a certain thing (or you guess that was the radio beam and you hope. to be letting down in a valley close to the airport, which in reality turns out to be a mountain).

"Second, you can just hang on till the noise stops and you can go ahead with your conversation, picking up where you left off. (This is fine if you don't run out of gas before the noise does stop.)

"Third, you might go to another room where you can hear something, and this is always a good thing to do if there is some place to go and you have enough gas to get there. Understand that this static doesn't happen in all kinds of precipitation, nor does it last for any certain length of time, which is probably the most dangerous port planes. This is a Douglas sleeper flown by American Airlines.

commercial flying (question No. 3). Virtually all of them listed the following needs: New type radio antennas for airplanes, these antennas to be shielded from snow, rain, and dust static; beam stations that are properly maintained and checked, with auxiliary transmitters and auxiliary power in case of failure; an increase in the number of beam stations both as alternates and as position check points for bad-weather flying; an efficient type radio compass or direction-finding loop as an additional aid to the men flying the beam; and improved systems of approach lighting at all principal airports.

To the final question most of the pilots made very brief answers. Most of them spoke thus:

"I do not think it would be fair to comment on this question, as no one is in possession of all the facts, and while most of these recent accidents happened on the west coast, still any one or all of them could have happened at any other point along the airways or at terminal stations."

However, a few pilots definitly said that the reasons for most of the crashes were errors on the part of the pilots involved. One man, speaking only of the United Air Lines and Western Air Express accidents near Los Angeles, said:

"Cockpit trouble caused the crashes [cockpit trouble being the pilot's way of referring to human error]. I started flying Newhall pass [scene of three of the crashes] in 1922. I landed the first airplane at Mills field [an airport near the pass] and am checked out on the Saugus-KBLA beam ap-



In the cockpit. This is where a pilot does his work. Every flight problem must be worked out with the aid of instruments and radio in the airliner "office."

thing about it, for it is so easy to become optimistic and trust that it won't last long, or that one can fly over it or out of it.

'Consequently, under these conditions no radio at present is reliable, and flights must be conducted or canceled with all the above in mind. However, there are indications that a new type of antenna can be developed to greatly reduce this particular haz-

The airmen were unamimous in their replies to question No. 2.

"Definitly no," "No, NO, NO," "Absolutely should not be removed," were a few of these. The best representative answer amplified the matter thus:

"At present there is no method of navigation that will compare with radio range flying, particularly on short hops. On many of the airway routes, particularly in the middle west, the stations are not over 100 miles apart, and beam stations at this distance, when properly maintained and checked, are extremely accurate."

The ideas of the pilots were much alike when they considered what ifnprovements would increase safety of

proach to Union air terminal, so I know something about conditions

"I don't believe the United or Western Air pilots made a conscientious effort to make a standard beam approach; rather they tried to bust through on ground contact."

Another pilot writes thus: "Eliminate the possibility of structural failure.

"Now consider cockpit trouble; it seems that in nearly every recent accident fatal to the pilots the department of air commerce has laid the blame to cockpit trouble. This fact has been pointed to in a manner intending to ridicule the investigating board, and yet you can readily see that any pilot who flies all kinds of weather without regard for the limitations of his equipment is bound to pile up sooner or later."

A third pilot says: "The approach to Los Angeles is okay providing you are one hell of a good pilot and never make a mistake.

I wonder if anyone is that good." And there you have it. These are the expressions of the pilots.