

Repl. by 58C

AC NO: 90-58B

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ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

SUBJECT: VOR COURSE ERRORS RESULTING FROM 50kHz CHANNEL SELECTION

1. PURPOSE. This circular provides information concerning a potentially hazardous situation when a 200 channel receiver is inadvertently mistuned 50 kHz from the frequency of a 100 kHz ground station.
2. CANCELLATION. Advisory Circular 90-58A dated June 11, 1974.
3. BACKGROUND. The possibility of an erroneous course indication exists, at least for certain types of 200 channel airborne receivers, when the receiver is inadvertently mistuned 50 kHz from the ground station frequency. (THIS PROBLEM DOES NOT EXIST WITH 100 CHANNEL RECEIVERS.) This condition is due to radiation of harmonics of the 9960 modulation from the ground station. When such harmonics exist, they may be received and detected by the aircraft's navigation receiver. The indication produced can appear to be useable information. The ground station identification may be heard, the flag alarm hidden and a course indication displayed. The course indication will probably be near the 180 degree radial (from), or its reciprocal 360 degrees (to), and will not vary as the heading of the aircraft is changed with respect to the VOR ground station.
4. DISCUSSION. Several methods are being investigated to minimize the effects of mistuning airborne VOR equipments. A method that has been successful in greatly reducing the probability of off-channel course indication is the "ADJACENT CHANNEL SENSOR". This method involves detection of an off-frequency condition of 50 kHz from the desired VOR frequency and causes a flag to appear at the pilots indicator. This type of modification may be adaptable to various VOR receivers operating within the 50 kHz spacing environment and provides a flag warning to the pilot when an inadvertent mistuned frequency selection is made. Equipment users are urged to consult with the manufacturer of their equipment for the best possible method of modifications to existing equipment.

Initiated by: AFS-350