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# ADVISORY CIRCULAR

## DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

**SUBJECT:** VOR COURSE ERRORS RESULTING FROM 50 kHz CHANNEL SELECTION

1. **PURPOSE.** This circular provides information concerning a potentially hazardous situation when a VOR receiver is tuned 50 kHz from the ground station frequency.
2. **BACKGROUND.** The possibility of an erroneous course indication exists, at least for certain types of airborne receivers, when the receiver is tuned 50 kHz from the ground station frequency. This condition is due to radiation of harmonics of the 9960 modulation from the ground station. When such harmonics exists they may be received and detected by the aircraft's navigation receiver. The indication produced can appear to be usable course information. The 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 position of the aircraft is changed with respect to the VOR ground station.
3. **DISCUSSION.** A manufacturer of airborne VOR equipment is investigating methods of eliminating effects of the undesired signal by modification of the airborne receiving equipment. Results of this effort will be made public when it becomes available.
4. **PRECAUTIONS.** For the interim period, until implementation of 50 kHz ground channel assignments on 1 January 1973, certain operators have disabled the 50 kHz channel selection capability of their VOR receivers to preclude this problem from occurring. All pilots are cautioned to assure their VOR receivers are tuned to the proper frequency, by a visual check of the frequency selector, until this problem has been corrected.

  
JAMES F. RUDOLPH, DIRECTOR  
Flight Standards Service