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ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

SUBJECT: EN ROUTE CONFLICT ALERT (CA)

1. PURPOSE. This Advisory Circular describes the capabilities and limitations of the Conflict Alert function that is operational in the En Route NAS Stage A program.
 2. DISCUSSION.
 - a. As the number of aircraft services by ATC increased, the FAA realized that a need existed to provide the controller with an additional method for detecting potential conflicts between aircraft. To provide this, an automatic conflict detection and alert function was incorporated into the en route ATC systems computer. This new function is called Conflict Alert. Conflict Alert is a computer software program that detects potential conflicts defined by two parameters; horizontal separation (5 miles) and altitude separation (1,000 feet, 2,000 feet above flight level, 290 and 500 feet for VFR on top). Conflict prediction is accomplished by projecting a current aircraft track position into the future (2 minutes). This future position is the result of a three dimensional tracker which uses information from long range radar and Mode C altitude reports from aircraft transponders or pilot reported altitudes entered into the computer by controllers. Whenever the airspace, associated with an aircraft track, touches the airspace associated with another aircraft track, a flashing alert is generated on the controller's display which identifies the situation and aircraft involved.
 - b. To be eligible for sensing by the Conflict Alert program, an aircraft **MUST BE TRACKED** by an ARTCC. When an aircraft is tracked in the NAS computer, the identified radar target is associated with information about that flight and a data tag is displayed automatically with the target. The tracking function keeps the data tag on the target as the flight progresses along its route. This includes VFR flights which are being tracked and provided ATC services by an ARTCC.
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c. Pilot responsibility is not altered by the Conflict Alert program nor is there any special radio terminology required. If a flight is detected in a potential conflict, the pilot will receive a safety advisory or, in the case of an IFR flight, a clearance from ATC. Because verbal altitude reports from non-Mode C aircraft are required, a timely response to controller request for altitude reports is essential so that new data can be entered to insure accurate prediction of aircraft position.

d. The computer at the 20 centers where Conflict Alert is in operation is a high speed reliable system; however, its resources are not limitless. Because of this, programs like Conflict Alert must share time with other ATC processes. Therefore, the computer cannot inspect every track continuously. However, once a possible conflict is detected, continuous processing is performed until the situation is resolved. Long range radar has a relatively slow scan rate and because radar tracking and predicted positions are based on history, there is an inherent lag. Consequently, if aircraft make rapid or abrupt maneuvers, a conflict situation can go undetected.

e. There are several areas in which the use of Conflict Alert is not operationally feasible. This includes certain control sectors that are adjacent to terminal radar approach control facilities, where separation criteria of less than 5 miles is being applied, certain control sectors which routinely service military operations which involve extensive aircraft maneuvers, and very busy sectors where data entry can fall behind. Because these conditions can create unwanted alerts, controllers may suppress the Conflict Alert function for individual aircraft or for his sector.

f. Conflict Alert cannot replace good operating practices and is designed to provide air traffic controllers with additional information to assist them in providing air traffic services. There is no operational program or procedure in current use that will replace the "see and avoid" practice from the cockpit. The use of Conflict Alert in no way relieves the pilot of his responsibility for the safe operation of his aircraft as prescribed in the Federal Aviation Regulations.


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