

The Board also noted, during the investigation of this accident, that there is no standardized flight check requirement with regard to the visual scan procedures used by a flightcrew when the flight is operating in visual meteorological conditions (VMC). This subject has been investigated in several collision accidents and to date, no satisfactory system has been reported to the Board.

The Board continues to be concerned with the overall midair collision problem. As the Board has stated before, the midair collision hazard is one of the most urgent and serious problems confronting civil aviation in this decade.

While the Board recognizes the continuing emphasis that the FAA is providing to resolve the midair collision problem, the Board considers that an even greater effort is needed to resolve the issues and arrive at a solution which will reduce the risk of midair collisions, especially as it relates to the wide bodied jet fleet.

In view of the above, the National Transportation Safety Board recommends that the Administrator, Federal Aviation Administration:

1. Develop and publish standards for visual search techniques to be used by instructors and check pilots on all training, certification, and proficiency check flights when pilots are operating in VMC (Safety Recommendation A-73-27).
2. Establish a requirement for pilots to be trained in the techniques of time sharing between visual scanning for airborne targets and cockpit duties (Safety Recommendation A-73-28).
3. Require that all pilots and flightcrew members training, certification, and proficiency check forms contain a specific item on scanning and time sharing (Safety Recommendation A-73-29).
4. Require that all pilots and flightcrew members be graded in scanning and time sharing techniques when training, certification, and proficiency check flights are conducted under VMC (Safety Recommendation A-73-30).
5. Advise the Board of the status of the FAA's evaluation project of April 7, 1972, on aircraft conspicuity research and, if that project has not been completed, take action to complete the project on a priority basis (Safety Recommendation A-73-31).
6. Expedite the development and issuance of national standards for systems to provide protection from midair collisions so that the industry can proceed without further delay to develop and market economically viable hardware (Safety Recommendation A-73-32).

3. RECOMMENDATIONS

There is no approved, standardized method to train or grade pilots in the techniques of time sharing between scanning cockpit instruments and searching the surrounding airspace for other aircraft.

The Board believes that an audio-visual aid, developed by the Aircraft Owners and Pilots Association Air Safety Foundation Group could help pilots develop a better understanding of how to conduct a search for airborne targets and the necessity of improving their time sharing techniques. The presentation used in this aid does not dwell at length upon any recommended scanning technique, but it does draw the trainee's attention dramatically to the inherent difficulties involved in sighting other aircraft and, by so doing, it emphasizes the need for the attention and concentration required to improve the possibilities of visually sighting airborne targets.

On January 6, 1972, the Board made its third recommendation to the FAA concerning visual scan and time-sharing training. The FAA previously had proposed, in Notice of Proposed Rule Making (NPRM) No. 70-37, to develop a system to train pilots in methods to time-share visual outside searches and scanning of cockpit displays. The NPRM was withdrawn by the FAA on July 27, 1972, because a majority of the comments received from individuals and organizations within the aviation community did not favor the amendment. The Board then recommended that the FAA reconsider the withdrawal of the NPRM and that the rule making be reinstated. The FAA on November 28, 1972, advised the Board that the rule making had been premature and that additional research and development was required. They stated that such research and development was in progress and that if the results were fruitful, the rule making would be reinstated.

The Board, in Special Study Midair Collisions in U. S. Civil Aviation 1969 - 1970, June 7, 1972, recommended that the FAA require the daytime use of high-intensity white lights on all air carrier aircraft. The FAA responded on October 19, 1972, that "... An evaluation project was started on 7 April 1972 to pursue aircraft conspicuity research on a priority to substantiate rulemaking action on anticollision lights, strobe lights, and pilot warning instrument (PWI) application of the strobe lights" As we have previously noted, no determination could be made in this case regarding the use of the installed strobe lights on the CV-580. However, the Board continues to believe that the use of such lights in daytime operations would improve the conspicuity of aircraft and make them easier to detect by pilots of other aircraft.