

RECOMMENDATIONS

The use of erroneous takeoff performance data is a safety issue of general concern and not specific to any aircraft type. The European Union Aviation Safety Agency (EASA) expects aircraft software and systems to provide hard barriers against erroneous data entry in the future. In 2020, the Dutch Safety Board recommended EASA to develop requirements for onboard systems. However, technical solutions will take some time to be developed and implemented in regulation. In order to speed up the availability of technical and software onboard systems the aviation industry needs to develop technical solutions to prevent the use of erroneous takeoff data. This investigation concludes that Embraer's performance application tool can be improved such that misselections are less likely to occur or more easily detected. Embraer started development of these improvements which are expected to be implemented in 2024. Therefore, the Dutch Safety Board does not make a recommendation on this issue and encourages Embraer to continue developing improvements for the performance application tool. The investigation also shows that Embraer has no plans to develop onboard systems that provide hard barriers against erroneous data entry, whereas some other manufacturers do. Therefore, the Dutch Safety Board makes the following recommendation:

To Embraer:

1. To start the development of an independent onboard system that detects gross input errors in the process of takeoff performance calculations and/or alerts the flight crew of abnormal low accelerations for the actual aeroplane configuration as well as insufficient runway length available.