

4.12 HUMAN FACTORS CONSIDERATIONS TO BE USED BY CERTIFICATION TEST PILOTS IN THE FAA APPROVAL OF CERTAIN ELECTRONIC SYSTEMS IN VARIOUS AIRCRAFT - GEORGE KASEOTE AND GEORGE LYDDANE

FAA Test Pilots

The Aircraft Certification Service approves many type of Flight Management Systems (FMS), Navigation Systems, Radios, etc. at the request of an applicant for a Type Certificate or a Supplemental Type Certificate for various aircraft. The tests for these systems are conducted by twelve different offices and over forty different individual test pilots; however, there is very little guidance or standardization relative to human factors issued for those individuals to approve a particular item

The Type Inspection Authorization (TIA), is a document that outlines various tests (among other things) that the test pilot should conduct in order to approve an installation of a piece of electronic equipment. The TIA generally has a "boiler-plate" item that loosely says "Evaluate the controllability and accessibility of the (FMS)". That leaves a large area for individual interpretation. For example, one specific certified FMS requires 164 key punches to program one IFR approach. Some pilots may feel that is too many key strokes and requires much too much time. That time spent programming a system is time spent away from other activities involved with the overall conduct and safety of the flight.

There should be studies and data available from the Human Factors community that could be used to issue guidance for standardization throughout the Certification Service as to a reasonable number of key strokes required for a function, the amount of time that is reasonable for various functions, the shape of knobs and dials, etc.

Another consideration that requires study is the annunciators required to certificate a particular item.

These are some of the things that we would like addressed in this workshop.