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Eye scan pattern V.1

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We use this protocol and it's working

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Abstract

The purpose of this study is to evaluate the expertise of certified pilots vs. novice on visual behavior strategies and performances. This study focuses mainly on the visual strategies used in the transition from one instrument to another.
An eye-tracking study was conducted while pilots (n = 16) and novices (n = 16) performed a manual landing task. During this task, pilots performed twice three different randomized manual landing scenarios. Scenario 1 corresponded to a nominal manual landing. In the two others landings scenarios, pilots were asked to perform a supplementary monitoring task (double-task).The monitoring task consisted in read aloud the distance in nautical miles (Nm) between the aircraft and a designed radio beacon. The pilots were asked to call out the distance either every 0.5Nm (scenario 2) or every 0.2 Nm (scenario 3). Furthermore, the pilot had to comply some specific instructions related to the flight plan such as maintain a speed of 130 knots, a vertical speed between +500 ft/min and -800 ft/min, which corresponds to a usual landing according to Toulouse-Blagnac Airport. A Smart Eye system recorded eye movements of the pilots. The cockpit has been divided into several Areas Of Interest, corresponding to the flight instruments.
We are looking for invariants in pilots in the way to explore flight instruments that we do not expect to find in novices. In addition, we expect to find better flight performance among certified pilots. Finally, we expect that finding some patterns in scenario 1, still present among pilots in scenarios 2 and 3, we do not expect to find these results among novices.
A homemade algorithm was used to compare the patterns from two to eight consecutive AOIs between groups and between conditions.

Materials

MATERIALS

PEGASE Flight simulator

Smart eye system

Troubleshooting

1