

A paper, The effectiveness of Personal Computer Aviation Devices (PCATDs), Flight Training Devices (FTDs), and an Airplane in Conducting Instrument Proficiency Checks, was presented by Henry L. Taylor, Donald A. Talleur, Esa M. Rantanen, and Tom W. Emanuel, Jr., at the Annual Midyear Symposium of APA Division 19 and 21 and the Potomac Chapter of the HFES, March 5, 2004, Ft. Belvoir, VA.

The Effectiveness of Personal Computer Aviation Training Devices (PCATDs) , Flight Training Devices (FTDs) and an Airplane in Conducting Instrument Proficiency Checks

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Abstract

To maintain instrument currency every six months instrument pilots must meet the recency of experience requirements of FAR 61.57(c) or (d). The simulated recent experience requirements may be conducted in an airplane or an approved flight training device (FTD). If an instrument pilot fails to meet recent experience requirements within the previous 12-month period, an instrument proficiency check (IPC) must be accomplished to regain instrument currency.

This project evaluates the effectiveness of a FAA approved PCATD and a FTD in conducting an IPC flight by comparing the performance of pilots receiving an IPC in an Elite Personal Computer Aviation Training Device (PCATD), a Frasca FTD or a Beechcraft airplane (IPC #1) with performance of an IPC in an airplane (IPC #2). This comparison between a PCATD and an airplane investigates the effectiveness of the PCATD in administering an IPC. Currently PCATDs are not approved for IPCs. The comparison between the FTD and the airplane investigates whether the current rule to permit IPCs in a FTD is warranted. Finally, the comparison of performance of pilots receiving IPC #1 in an airplane with IPC #2 in an airplane with a second Certified Flight Instructor, Instruments (CFII) investigates the reliability of IPCs conducted in an airplane.

This study involves 75 subjects (25 subjects in each group: FTD, PCATD and airplane). Each agreed to refrain from instrument flight (either in flight or in a ground-based device) between IPCs #1 and #2. Each flew a familiarization flight in the FTD, the PCATD and the airplane prior to being randomly assigned to one of the three groups (FTD, PCATD and airplane). Three instrument currency categories; 1) Current, 2) Within six months of currency, and 3) More than 12 months since current; were balanced among the groups. The results

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indicated that a number of the subjects failed IPC#1 (less than 50% passed). More subjects in all three groups passed IPC #2 than passed IPC#1. The results indicate that the PCATD group pass rates on IPC#2 were virtually identical to those for the FTD group and there was little difference between either the PCATD and FTD groups and the airplane group. There was also little difference between PCATD and FTD group when considering the change in performance between IPC#1 and IPC#2. However, both groups' change in performance did differ from that of the airplane group.