

“AUTOMATION ADDICTION – THE UNINTENDED CONSEQUENCES OF AUTOMATION ADDICTION FOR AVIATION SAFETY”

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ABSTRACT

The human is the weakest link in the safety chain BUT, this must be seen against the backdrop that man was not designed to fly. The fickleness of human judgement, the under-developed psychomotor skills to handle an aircraft about all axes, cognitive dissonance and inconsistent decision making, have all contributed to accident statistics worldwide.

The conscious decision by aircraft designers to embody innovative aerospace engineering technologies through automation and increased regulation, contributed to effectively remove the human from the control and decision making loop in flying large commercial jets and in the process, resulted in radical improvements to aviation safety. Sadly, despite such technological improvements, the human ‘operator-in-the-loop’ was left behind and relegated to the role of a systems monitor and systems manager without the equivalent increase in knowledge and training.

The consequence thereof has been the psychological addiction to automation in which pilot’s handling skills and the ability of pilots to fully comprehend the effect of technological failures, albeit very rare, have regressed to such an extent, that automation addiction is now classified as the newest threat to commercial aircraft operations.

Has this threat been identified and recognised as a technology paradox by aerospace engineers and pilots alike? Have design engineers understood the chasm between innovative engineering and the fickleness of man-machine interface? Have the test pilots and aerospace engineers understood the requirement to modulate the introduction of new technologies? Has the aerospace industry understood the need to accelerate pilot training regimens to deal with the pace of technology growth?