Human Performance as the Key Issue in Aviation Safety

Abstract:

The article “Human Factors: The Last Frontier of Aviation” by Alan Hobbs, addresses the issue of the perception th at as technology stabilizes in the aviation industry, the human factor becomes more responsible for air accidents, and the cause for concern in aviation safety. Hobbs uses air safety records of early aviation history in the period 1921 to 1932 to provide the results that dispel this “last frontier” perspective of the human factor in aviation safety in a conv incing manner. The results show that human factors have been as important in early aviation history as they are in m odern times, and there has been no enhancement of this relevance with the stabilization of technology. This means th at human factors will remain relevant in aviation safety through all its different stages.

Introduction:

The article selected for critical evaluation is a study done by Alan Hobbs, of the Department of Psychology, San Jos e University. It was published in the International Journal of Aviation Psychology, and published under the title of “ Human Factors: The Last Frontier of Aviation”. In this succinct and informative article Hobbs uses evaluations of ai rcraft accidents between 1921 and 1932, as well as accident data from First World War, to establish that human fact ors have always been a key issue aviation safety even in the early days of aviation history in comparison to airworthi ness of aircraft. In his conclusion, the author expects technology to have a changing influence in many aspects of hu man endeavor, but does not expect it to diminish the importance of human performance in aviation safety.

Discussion:

A comparison of human factors and machine factors as contributing to accidents in the history of aviation suggest t hat over time technology becomes more reliable and less of a contributory factor in aviation safety incidents, leading to the increased incidence of human error as the cause of accidents. According to the author such a perspective of th e human factor in accidents has led to this being called the “last frontier” of aviation safety. This observation is supp orted by other literature on the subject (Aurino, 2000). Such a feature of human factors in safety issues is not restrict ed to the aviation industry only, but is witnessed in range of other industry settings like, nuclear, aerospace and man ufacturing industries. The author provides good support for this claim in terms of work of other authors.

Hobbs attempts to disprove the perspective of increasing human factors in aviation safety, through establishing its i mportance even from very early times of aviation history. For this purpose he relies on the records maintained by the Australian federal government since the implementation of the Air Navigation Act of 1920. As a result the Australia n Transport Safety Bureau (ATSB) has maintained a record of civil aviation accidents going back to 1921, which off ers ample data to compare with current sample of modern-day accident reports to establish the veracity of the “last fr ontier” perspective of human factors in aviation safety.

Hobbs uses one hundred air accidents records from among those maintained by ATSB in the period 1921 to 1932. T he choice of this period is adequate in that it deals with almost a decade of aviation history at a time when it was yet to fully establish itself (Batteau, 2001). In other words he uses the earliest suitable data that is available. The only fa ult that can be found is that the study relies purely on data from a single regional source, which has implication on it s universal application. To offset this limitation the author justifies the findings, as it is in keeping with the statistics from First World War and American aviation statistics.

For a proper evaluation the author divided the contributory factors to air safety into six categories, consisting of pilo t, airframe, engine, terrain, other personnel, and weather. Contributory factors relevant to modern-day accidents wer e got from statistical reports on fatal aviation accidents available with the Bureau of Air Safety Investigation.

Good to excellent levels of interrater agreement were found for five of the relevant contributory factors, which were pilot, other personnel, airframe, weather and engine. Only terrain was found to lack this quality among the contribut ory factors. In the opinion of the author terrain was not an accident factor on which the study was to focus, and as a r esult this drawback had no significant impact on the findings of the study. Examination of the analysis of the data sh ows that by far the largest contributory factor for air accidents was the human factor (68%). All other contributory fa ctors did make a contribution to air accidents, but even in combination was far outweighed by the human factor.

These results do not support the “last frontier” perspective of the human factor in aviation safety. At a time in aviati on history, when aviation was still in what could be considered its infancy, human factors far outweighed any machi ne oriented contributory factors in aviation safety. If the “last frontier” perspective of the human factor in aviation sa fety was true, then at this period in aviation history machine oriented contributory factors should have been more rel evant than human factors.

The results of this study compare well with the statistics of the First World War on the sides of both the British and the German aircraft losses. The results also compare well with the American civil aviation safety statistics. These he althy comparisons increase the relevance of the findings of the author in this study. The author does acknowledge th

at in those times there was a practice of assigning a single contributory factor as the cause of the air safety incident, even when there were multiple contributory factors involved. This may have led to more air safety incidents being at tributed to human factors, when other contributory factors were involved. In addition the author acknowledges that " pilot errors" as attributed in those times would have reflected additional wider systems deficiencies pertinent to that period of aviation history in handling characteristics of the aircraft, the quality of training, and the challenges of oper ating from airfield with just about basic features. Despite these factors the author finds that findings of the study indi cate that the human factors have remained the most significant aviation safety factor even in the period of early aviat ion history (Hobbs, 2004).

Conclusion:

The author Hobbs through a well planned and executed study negates the "last frontier" perspective of the human fa ctor in aviation safety by proving that the human factor was as relevant in the early history of air safety, as it is relev ant in the air safety history of the present. This leads to the author concluding that the human factor will remain the most relevant factor to air safety, even with challenges that technology may continue to bring.

Literary References

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