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Human Error

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Human Error

Human error is a general term in aviation, referring to where people are responsible for accidents other than machine failures. It happens when the experts and licensed workers fail to consider the expected operating processes or make poor judgments (Miranda, 2018). Addressing the aspect is necessary, as most accidents occur due to human error. The literature describes HFACS as a method to classify human error as well as its reactive together with proactive aspect.

Dr. Scott together with Wiegmann developed the HFACS to understand the primary factors that cause accidents. The United States Air Force highly uses it during investigations and analysis of human factors in aviation. The model divides the factors into four categories: unsafe acts of operators, preconditions of hazardous actions, unreliable supervision, and organizational elements (Shappell & Wiegmann, 2000). Level one entails the dangerous acts divided into mistakes and violations. Mistakes, also called errors, refer to the unintentional practices based on skills, decision making, or perceptions. Examples of errors are failure to maximize attention and engaging in inappropriate processes. Violations, on the other hand, is where the person willingly disrespects the set rules and regulations. They could be routine or exceptional based in that the governing authority could be tolerating the problems or specific individuals.

HFACS's level two entails the preconditions for unsafe action categorized into environmental, operators, and personnel aspects (Shappell & Wiegmann, 2000). The environmental element could be the physical factors such as weather, altitude, lighting, toxins, or technological example the equipment and control designs, among others that could cause accidents. The condition of operators is the other division in level two divided into several sections. One of them is mental issues like stress and reduced motivation that make the employees concentrate less, leading to accidents. Physiological problems such as medical

conditions and hypoxia are also listed in this level and the mental and physical limitations that alter performance, for example, visual challenges and reaction time. The personnel factors, on the other hand, refer to crew management and personal readiness. Here, elements such as communication, teamwork, cooperation, rest requirements, and off duty responsibilities are considered.

Unsafe supervision is listed as the third level, where different areas are assessed, one of them being the inadequate supervision elements (Shappell & Wiegmann, 2000). At this juncture, the investigators evaluate if the leader offered guidance, training, and oversights that ensure the work is executed safely and as expected. The planning of unexpected operations is also assessed here, referring to the activities adjusted in time of problems such as risk management and operational tempo. Failure to rectify the known issue is also determined here, whereby the administration knew of a challenge but failed to take the necessary measures to ensure safety. Finally, level three assesses supervisory violation where the employees ignore the set rules and regulations. The organizational influences are the last level in the model, whereby resource management, the company's climate, and the operational processes are examined. Dividing the areas makes the model reliable in classifying human error and identifying the accidents' specific cause.

HFACS is both reactive and proactive based on its goals in assessing human error. One of its objectives is to determine the human factors that caused the accident. The researchers apply the above categories to choose which fits the accident, answering the question on the role of human error in the case (Judy et al., 2020). The model is also proactive because it helps identify trends. For example, the investigators collect historical data pointing out the mistakes done resulting in the accidents. The conclusions assist in the prevention of future cases. However, HFACS does not elaborate on why the failures occurred, and as a result, the four levels are applied to provide further information. Therefore,

the model is reactive because the specific causes of accidents are identified, and it is also proactive. Organizations can use past failures to develop strategies to curb future problems.

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