Sources of Psychological Stress on Student Pilots during Flight Training

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Abstract

The final goal of this study is to find out the potential sources of psychological stress of student pilots during training. Since the changes in stress can be made to ensure a smoother training progress. In this case, the questionnaire was designed to mainly focus on human factors. More detailed questions about the communication and performance of student pilots and instructors are asked. In terms of format design, two kinds of questions including multiple choice questions and ranking questions are applied. Multiple choice questions are used to identify the sources of stress and the ranking question at last can help determine which source of stress if more severe than another.

Methodology

Survey Questionnaire

Source of Stress

<table>
<thead>
<tr>
<th>Human Factor</th>
<th>Environment</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication: speed, accent, time, terminology</td>
<td>Aircraft: age, model, noise, maneuverability</td>
<td>Weather: time of a day, time of year</td>
</tr>
<tr>
<td>Professional Performance: material, engagement, preparation</td>
<td>Flight Type: solo, double, check ride</td>
<td>Body wellness, emotion status, school work, financial status</td>
</tr>
<tr>
<td>Personal Relationship: positive, neutral, negative</td>
<td>Non-flight Issue</td>
<td></td>
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</table>

The term "stress", as it is currently used was created by Selye (1976), who defined it as "the nonspecific response of the body to any demand for change". In the Oxford Dictionaries (2010), stress is defined as "a state of mental or emotional strain or tension resulting from adverse or demanding circumstances". The UK Health and Safety Executive (HSE) (n.d.) defines stress as "the adverse reaction people have to excessive pressure or other types of demands placed on them". According to Federal Aviation Administration (FAA) (2012) definition, stress is "the sum of biological reaction to any adverse stimulus physical, mental emotional, internal or external that tends to disturb the body’s natural balance".

Types of Stress:

Generally, there are three kinds of methods to classify the stress. In the first way, the stress is classified into three basic forms: acute stress, episodic acute stress and chronic stress (Müller & Rothstein, 1994). However, American Psychological Association (APA) (2012) state that stress can be classified into acute stress and chronic stress. Contrary to popular belief that all stress is negative, the third classification (Mills, Reiss & Dombeck, 2008), separates the stress into either good (eustress) stress or bad (distress) stress.

Stress and Performance:

The empirical Yerkes–Dodson law (Cohen, 2011) is a relationship between arousal and performance, originally developed by psychologists Yerkes and Dodson (1908). The law dictates that performance increases with arousal of physiology or mentality, but stops at a point. When levels of arousal become too high, the performance decreases.

Stress in College Students:

Many studies have been conducted to find out what individuals perceive as stress and what mediums they use to mitigate it. One group of individuals who often experience stress are college students. Several studies have been done with college students to understand their stress causes and the method they use to mitigate stress. According to the investigation done by Wu (2008), it was found that the main causes of stress were worrying about careers and activities, as well as facing the fast pace of life due to modern technology.

Stress in Aviation:

In aviation, the occurrences of most accidents are in the sequence of mistakes made, like a domino effect. Stress is the finger that pushes the first domino into the rest. To ensure safety in the aviation industry, at least one of these dominoes must be removed in order to avoid an accident. For pilots, they are subjected to different amounts of stress at all phases of flight and how they react when subjected to stress will ultimately make or break a safe and successful flight (Aviation Knowledge, 2012).