

PERCEPTION OF STRESS AMONG AVIATION FLIGHT STUDENTS

By

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I dedicate this research to my parents and my best friend.

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ABSTRACT

There have been many studies related to stress among college students and the purpose of this research was to determine what causes stress among the student pilots enrolled in the Middle Tennessee State University (MTSU) flight program, also to find out what students think could be some possible ways to reduce their stress, and to compare the results with a previous study conducted by South Illinois University. The survey designed by Robertson and Ruiz (2010) was administered to MTSU students so that a comparison could be done between MTSU and SIU, as SIU used the same survey form. Results of the study showed that flight students are exposed to similar stress at both universities, but some of the factors that cause stress are different between MTSU and SIU students.

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CHAPTER I- INTRODUCTION

The life of a pilot is often considered to be prestigious, adventurous and exciting. Stress is something that comes along with all the perks in a pilot's life and student pilots are no exception. As student pilots start their career in flying, life can become stressful, and it can be difficult to handle this stress. Some of the areas in which a pilot has the occasion to face high levels of stress are: the great responsibility for the safety of many passengers, operating an aircraft overnight, flying in bad weather, flying in a high density traffic area, temporarily getting off course, equipment malfunctions and conflicts with other crew members or air traffic control (Baltic Aviation Academy, 2014). Stress can be caused by any factor present in the environment. It is very hard to say what triggers stress but each individual has different reasons. According to Human Factors and Aviation Medicine, "the flight environment includes stressors such as noise, vibration, decreased barometric pressure, and accelerative forces that can cause stress among pilots and crewmembers. Fatigue and altered sleep-wake cycles also may be factors, especially for crewmembers on flights that span several times zones," (Flight Safety Foundation Editorial Staff, 2006, p.1).

Everybody experiences stress and college student are no exception. Every student experiences stress in the course of a semester. There are predictable times when stress levels can be higher than others, often caused by academic commitments and financial pressures (Misra & McKean, 2000). If a student perceives the stress negatively or the stress becomes extreme, a student's academic performance can suffer or they can experience adverse health effects (Misra & McKean, 2000). There have been many

studies related to stress among students and to add to this body of knowledge, the purpose of this study is to determine what causes stress among the student pilots enrolled in the Middle Tennessee State University flight program, to find out what students think could be some ways to reduce their stress, and to compare the results with a previous study conducted by South Illinois University.

Stress is given a lot importance, especially in this technological era. It is very important to understand the concept of stress before identifying the types, causes and mitigation strategies associated with stress and how stress effects college students, especially students who are training to be pilots.

Definition of Stress

Stress can be perceived differently by different people, and different fields define stress in various ways. For example a mechanical engineer may define stress as, “the effect of some action on a body that produces strain, and is usually measured in pounds per square inch;” a linguist may define stress as, “relative force with which a sound or syllable is spoken;” while to a physician, stress may be, “damage to the body;” (Driskell, Hughes & Salas, 2013, p. 4). The type of stress discussed in this paper as a state of mental or emotional strain or tension resulting from adverse or very demanding circumstances (Driskell, Hughes & Salas, 2013).

Stress can also be “a condition or feeling experienced when a person perceives that demands exceed the personal and social resources the individual is able to mobilize,”(Robertson & Ruiz, 2010, p. 115). Stress can be considered as a physiological or psychological reaction to a known threat when this threat requires some action that

needs to be taken (Robertson & Ruiz, 2010). Stress has been perceived differently by different researchers. According to Michie, stress is “conceived of as pressure from the environment, then as strain within person,” (Michie, 2002, p. 67)” Stress can also be considered as the relationship between a circumstance and an individual (Michie, 2002, p. 67). Further according to Michie, stress is

“the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressures of the situation. Thus, stress is more likely in some situations than others and in some individuals than others. Stress can be undermine the achievement of goal, both for individuals and for organizations,” (2002, p. 67).

But again stress can be conceptualized and defined differently by individuals.

According to Michie stress can be defined as:

“A stressful event is any change in the environment that typically induces a high degree of unpleasant emotion and affects normal patterns of information processing,” (2002, p. 50).

Somewhat similar to Michie, focused on environmental demands exceeding a person’s capacities, but with a greater focus in the outcome of the situation:

“A potential for stress when an environmental situation is perceived as presenting a demand which threatens to exceed the person’s capabilities and resources for meeting it, under conditions where he expects a substantial differential in the rewards and costs from meeting the

demand versus not meeting it,” (Michie, 2002, p. 67).

It is very interesting to note that while stress is perceived differently by individuals, a common theme among all the above mentioned definitions is that stress reduces the effectiveness of work. When an individual performs under stress, the quality of work is affected. Because stress affects individuals it is important to understand the different types of stress.

Types of Stress

Stress is typically defined in two categories, short term (acute) and long term (chronic). Acute stress is experienced for a short period of time and is usually caused by a traumatic event. Acute stress is sometimes considered as beneficial and can create motivation (Bailey, 2008). Bailey further provides an example where a student is approaching a deadline, which is causing the student stress. The stress that is caused due to this deadline is considered good because it is temporary and hence helps the student to focus and complete their task before the given time. A student being stressed during an examination is a very common depiction. Some of the symptoms by which stress is identified include headache, shortness of breath, and dizziness. A certain amount of acute stress can be seen among everyone and student pilots are no exception. There have been studies that show that students who have just started their flying lessons suffer from more acute stress than pilots who have a commercial pilot license (Chong, 2001). Other reasons that can cause acute stress among pilots are delayed flights, long duty schedules and inflight emergencies. Situations such as delayed flights not only cause stress but also affect the pilot's performance and can result in pilot error (Chong, 2001). Chronic stress,

on the other hand, is described as a stress that a person suffers for a long time due to a situation that has not been resolved. This is sometimes seen in students, but not as often as acute stress. Chronic stress experienced over a long term can effect human health and create conditions such as heart disease or stomach ulcers (Chong, 2001).

Stress can be further broken down into three different types of stress, within the acute and chronic categories. These types of stress include physical, psychological and psychosocial. Physical stress can be caused by several reasons. Physical stress can be caused due to the environment such as noise, vibration, temperature, not enough oxygen and also by exertion (Robertson & Ruiz, 2010). Psychological stress is associated with feelings and emotions. Sometimes this kind of stress can be caused due to psychological illness. Every individual reacts to this kind of stress differently, depending on their mental state. According to Robertson & Ruiz (2010),

“Psychological stress involves attitudes, feelings and our reaction to anything that we perceive as a threat. Flying could be an example, as one person may react to flying in a calm manner, whereas another may become stressed with the idea,” (p. 116).

Psychological stress is what an individual feels when they are under pressure. It is also important in analysis to observe how an individual handles the stress. For example, when someone gets a D on an exam they may feel like failures and become unmotivated. The stress that an individual feels when they receive a D in an exam is psychological stress (Williams, n.d).

Psychosocial stress is caused when an individual feels that there has been an attack on their social status or esteem (Scott, 2014). According to Scott, “Psychosocial stress is the result of a cognitive appraisal of what is at stake and what can be done about it. More simply put, psychosocial stress results when we look at a perceived threat in our lives (real or even imagined), and discern that it may require resources we do not have,” (2014, p. 1). There are certain hormones that are released during psychological/psychosocial stress and one of them is cortisol, which can be helpful because it increases the efficiency and the amount of work that can be done by an individual by using the available energy that the body has. But it can be harmful if it continues for a long time because it suppresses the immune system (Scott, 2014). According to Robertson and Ruiz (2010), “Psychosocial stress involves relationships with people. This type of stress could involve conflicts with family or friends or a perceived threat to identity or self-image,” (p. 116).

This stress can be helpful for the short term but this same stress can be harmful if it is there for a long term. According to Kirschner,

“Psychological stress and its damaging effects is quite an individual matter. Without knowing what is involved personally for individuals and particular collectivities, and the particular contexts in which they operate, we will be handicapped in our understanding and in our efforts to ameliorate or prevent stress in the workplace,” (2011, p. 5).

Every human being experiences stress but usually stress is not seen in a positive respect. Stress, like a coin, has two sides to it. It can be positive in some case as well as

negative in some situations. According to Robertson and Ruiz (2010) “while early research suggested that all stress was negative, it is now understood that a stressful situation can be from a negative or a positive experience,” (2010, p. 2). Positive stress is also called eustress and negative stress is also called distress, according to Robertson and Ruiz. Eustress is when an individual feels good and it helps individuals by increasing mental awareness and focus. It helps in promoting cognitive and behavioral performance. Distress is a feeling that is not good. According to Selye, it is an unpleasant, negative, painful and not enjoyable sensation which results in anxiety, fear, worry and agitation and all this can lead to poor productivity in terms of work. Individuals can suffer from poor decision making, loss of situational awareness, make errors in judgment, become confused, be unable to cope with increases in workload, and last but not the least experience absenteeism at work due to stress (Selye, 2012).

Causes of Stress

Depending on the type of stress, human behavior can be affected. For example, when an individual is suffering from acute stress, there could be changes in feelings such as anxiety, depression, irritability, increased fatigue and decreased thinking ability. According to Salas, Driskell and Hughes, stress can be caused by different reasons such as physiological changes, emotional reactions, and motivational losses. Within physiological changes, heartbeat, labored breathing and trembling can cause stress. Within the emotional realm fear, anxiety, and frustration can cause stress. Stress can also be seen in physical symptoms such as palpitations, nausea, and headaches, according to Michie (2002). Michie states, “If stress persists, there are changes in neuroendocrine,

cardiovascular, autonomic and immunological functioning, leading to mental and physical ill health,” (2002, p. 67). According to Michie, situations that are “unpredictable or uncontrollable, uncertain, ambiguous or unfamiliar, or involving conflict, loss or performance expectations,” (2002, p. 67) can cause stress. Stress can be temporary and can be seen in situations such as taking examinations, work deadlines, family emergencies, and travelling long distances.

Stress is usually experienced for a short period of time. But it has been observed through research and experiments that individuals can suffer from long term stress. This can cause harm to the body and hence steps should be taken to reduce stress. Selye (2012), an expert in stress, found that bad stress (distress) is stress humans should try to avoid, as this stress can be harmful for human health in the long run. Under stress, individuals can lack confidence which can result in actions that are not sharp.

According to Cohen (1980), when a person experiences stress for a long time, the individual feels drained, their resistance to stress breaks down, and exhaustion results. According to Cohen “Although man is highly adaptable and can therefore achieve adjustments to extremely undesirable conditions, such adjustments often have indirect effects that are deleterious,” (Cohen, 1980, p. 82). In experiments conducted by Glass and Singer, participants were given situations with stressors, to enable the researchers to measure the impact of stress on their performance. In the experiment, individuals were asked to proofread documents. Sudden outbursts of noise were introduced when the individuals were proofreading, and it was noted that their frustration level was higher

than those individuals who were not exposed to the noise during the experiment (Cohen, 1980).

Effective Methods of Dealing with Stress

The human body acts as a mechanism in itself to deal with stress. In a study conducted by Yale University, it was concluded that high stress led to unhealthy behavior. To overcome stress, there are protective mechanisms in the human body, to allow people to cope with stress. These protective mechanisms are called alarm reaction and adaptation. When either of these mechanisms do not work, stress is experienced. The alarm reaction is experienced when a person faces a threat and their muscles tense up and there is rapid breathing and heartbeat. The usual human tendency is to handle a threat by fighting or by avoiding the problem. In this modern world, the threats tend to be more psychological than physical. For example, there is a tendency of human beings to use verbal attacks in situations where they are threatened, but the correct way to deal with this is not to fight, but to utilize assertive communication (Michie, 2002).

Another mechanism that is very important to fight stress is adaptation. If there is a deficiency of this mechanism there is usually a breakdown from physical wear and tear and mental exhaustion. In an example provided by Michie, when someone lives close to a railroad, the sound a train might startle the individual initially, but over the time the person becomes used to the noise. This is possible only because our body can adapt to the environment, due to the adaptation mechanism (Michie, 2002).

Sometimes releasing stress can be simple but sometimes it can be tricky, especially if the individual is suffering from a mental or any other health condition.

According to Kirschner (2011), while certain coping skills have been conceptualized as being effective in certain situations, elements other than the type of situation can affect an individual's choice of coping skills. Some individual characteristics that can affect the choice of coping skills include personality, gender, and cultural background.

Stress in College Students

There have been many studies 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. There have been specific studies done with students to understand what their concept of stress is, what causes stress and what they use to mitigate stress.

According to Wu (2000), when a survey was conducted in 2008, it was found that eight in ten college students suffer from mild to severe stress. This was an indicated increase in stress of 20 percent since 2003. The main reason for this stress was determined to be changing lifestyles and attitudes in students. Another reason included a fast paced life style, and due to modern technology.

According to the study conducted by Wu (2008), it was found that the most common reactions to stress among college students were fear, anxiety, worry, anger, guilt, grief, or depression. It was also found that this stress was caused by frustration, self-imposed stress, and pressure. There are also bad habits that students become involved in when they are stressed. Some of these include drinking, drugs, and smoking. Though most students try to deal with stress in a healthy way, some do it the wrong way (Misra & McKean, 2000).

Misra & McKean (2000) conducted a research study with 249 undergraduate students, comparing the relation between academic stress, anxiety, time management and leisure satisfaction. Their study discusses the causes of stress that were observed among the 249 students, and what helped them overcome this stress. This study was conducted at a midwestern university. The average age of the students was 21 years, and the sample size contained more females (74.6%) and the majority of the students were sophomores. To measure the perception of stress, and methods that students use to reduce stress, a questionnaire was developed and distributed to the students. Misra and McKean developed their survey based on Gadzella's Student-life Stress Inventory (Misra & McKean, 2000). The questionnaire was designed using a Likert response scale. This scale measures five categories associated with stress, with the categories being physiological, emotional, behavioral, and cognitive. A time management based questionnaire was also distributed to students to analyze if there was a relation between stress and time management. For analysis, a student t-test and ANOVA was used. According to the statistical analysis it was concluded that students feel stress due to educational pressure and stress imposed by the students themselves. According to Misra and McKean, "Students, in general, experienced higher stress due to pressure and self-imposed stress as compared to changes, conflict, and frustration. Emotional and cognitive reactions to stressors occurred more frequently, and behavioral and physiological reactions to stressors were reported less often" (Misra & McKean, 2000, p. 1).

Further it was found that stress among college students can be developed due to a number of reasons including academic, financial need, time and health related issues

(2000). Among students stress is perceived as negative or positive. When stress is perceived negatively, it can cause physical or psychological impairment. Some of the methods recommended by the study that were found to be helpful in reducing stress were effective time management, social support, and positive reappraisal (Misra & McKean, 2000). Effective time management is definitely considered as one important method by which stress can be reduced. In this study it was found that freshmen and sophomores were exposed to more stress than juniors and seniors. The main reason for stress among the first and the second year college students was the lack of socialization. Advising, counseling, and special programs could help students deal with stress.

In another study, Ross, Niebling and Heckret (1999) did an experiment with 100 students from a midwestern university, which included 20 males and 80 females being given a survey questionnaire to determine what the factors students thought were stress. This study was based on the Student Stress Scale (Ross, Niebling, Hecket, 1999) and Taylor Manifest Anxiety Scale (Ross, Niebling, Hecket, 1999). The questionnaire had 4 different sections to determine stress:

- Interpersonal Source of Stress: Stress caused due to fights, problems with relationships or stress related to some kind of relationship
- Intrapersonal Source of Stress: Stress caused by changes in eating or sleeping habits or any kind of internal sources
- Academic Source of Stress: Stress caused due to academic requirements such as exams, classroom workload, and similar events

- Environmental Source of Stress: Stress caused due to the environment that was not related to academics, such as problems with a computer or car.

After the survey was conducted it was found that the most common causes of stress were changes in sleeping habits, vacation/breaks, change in eating habits, new responsibilities, and increased class workload (Ross, Niebling & Hecket, 1999). Another factor that was observed that caused stress was financial difficulties. In both the Misra, McKean and Ross, and Niebling and Hecket studies, it was found that the students who are more prone to stress are freshman college students. Overall, students deal with potential stress due to job searches, class loads and other related factors.

Stress Relief

There are a number of ways to relieve stress including some simple techniques. According to Kirschner (2011), some of the stress coping methods are active (or problem focused), emotion-focused, and avoidant. Active coping strategies are more focused towards the problem and solve the problem directly. This strategy recognizes the stress directly and helps in making the situation better. Emotional focused coping strategies helps reduce stress by expressing feelings via prayer, talking to peers or family and by seeking help. An avoidant coping strategy is where the individual avoids the stress and does not cope with the stress. Example of this strategy are people using drugs, daydreaming, and sleeping (Kirschner, 2011).

Stress Management is a healthier way to relieve stress. According to Robinson (2015), stress management can be defined “as a way to cope with stress, help you reduce its harmful effects, and prevent stress from spiraling out of control again in the future”

(p.1). There are different methods that are used in stress management, including exercise, being socially active, adapting to the stressor, avoiding unnecessary stress, accepting things that cannot be changed and making time for fun and relaxation (Robison, 2015).

Exercise helps in reducing and preventing stress. Any form of physical activity helps reduce stress, anger, tension and frustration. Physical activity helps release endorphins which helps in reducing worries and also works as a mood booster. Social interaction is another very effective way to reduce stress. “Social engagement is the quickest, most efficient way to rein in stress and avoid overreacting to internal or external events that you perceive as threatening. There is nothing more calming to your nervous system than communicating with another human being who makes you feel safe and understood,” “(Robison, 2015, p. 1). To reduce stress it is very important to open up and interact with people. This acts as a mood booster. Another useful method to reduce stress is to adapt to the stressful situation. For example, if one is stuck in a traffic jam, instead of fuming and cursing at the traffic light, one can try and enjoy the alone time or listen to a favorite song. This will decrease stress significantly. It is important that the individual adapt to the environment.

Taking time for fun and relaxation is another effective method to reduce stress. Some effective ways of reducing stress is by listening to music, talking to friends, reading a good book, watching a TV show and travelling. Maintaining a healthy lifestyle is a key element to reducing stress. Some other effective methods to reduce stress are time management, organizational skills and proper lifestyle.

Stress in Pilots

Every pilot deals with stress, but when the stress is overwhelming there could be mistakes made that could lead to accidents. There are many reasons that accidents and incidents take place in the aviation industry. One of the reasons identified as a cause of accidents and incidents is stress. According to Dr. Hans Seyle, “In order to maintain safety in aviation, at least one of these dominos must be removed to avoid a dreadful accident. This is where all of human factor studies and hard work can come into play. Depending on what particular job a person is performing in aviation, they must take steps to avoid undue stress,” (2012, p. 1). Pilots must learn to deal with and try to reduce stress. Although pilots placed in highly stressful situations have an increased chance of making errors, they can use coping skills to lower their stress level and reduce the likelihood of errors (Seyle, 2012).

There are several experiments that have been conducted to see what causes stress for pilots and what their perception of stress is. An experiment was conducted where individuals were asked to multitask and were assigned duties in a line operation, and it was observed that when an individual was more stressed they made more mistakes compared to individuals who were less stressed. According to Human Factors and Aviation Medicine, “24 three-member flight crews performed line operations, including emergency operations, in a Boeing 737 simulator; afterward, they were tested for perceived stress. The crews that committed the fewest errors reported experiencing less stress than crews that committed more errors,” (Flight Safety Foundation Editorial staff, 2006, p. 1).

When pilots are flying, stress could be a cause of accidents. According to research done by Robertson and Ruiz (2010), in 2006, the Flight Safety Foundation conducted an experiment with 700 naval aviators who were involved in accidents. It was found that the main reason 381 of these pilots were involved in an accidents was because they could not cope with stress. Pilots who were involved in accidents that were not their fault had stress related problems, but not as much as the pilots who were directly involved in causing the accidents.

There are number of techniques that can be used to avoid stress among pilots, according to Gorak (2009). These include planning relaxation time in a busy schedule, maintaining a program of physical fitness, learning to manage time more effectively, taking a self-assessment to help set realistic goals, avoiding stressful situations and encounters and always reviewing plans, using a checklist, and cross-checking the instruments (Gorak, 2009).

Sometimes a stress control training session can help in reducing stress among student pilots. According to a report by the Air Force Research Laboratory in Ohio, studies were carried out to determine whether specialized stress-control training sessions, introduced during the acquisition of simulator-based flight skills, enhanced a pilot's performance during subsequent stressful flight operations in an actual aircraft. The research helped prove that such sessions do help pilots cope with their stress and fly better (Misra & McKean, 2000).

Inside the cockpit pilots can be exposed to a lot of stress. Some the methods mentioned to control stress by the Flight Safety Foundation are:

- Preparation: The crew and the pilot should be familiar with techniques and should be prepared to solve any situation in a proficient manner.
- Anticipation: Pilots should always anticipate the situation and possible threats so that they can deal with them appropriately.
- Planning: Anticipation is followed by planning. Pilots should always have tentative plan ready for the scenario. This helps with the preparation.
- Communication: It is very important that there is proper communication between both the pilots and the cabin crew. It is important that all the plans for the flight are known by the entire flight crew.
- Use of Resources: Making use of available resources is very important. Air Traffic Controllers are one of the best resources during flight. They can help provide available options to the crew when they are in a difficult situation.
- Crew Resource Management: This is a technique that is available to the crew which helps reduce stress by reducing errors through talking to people and sharing experiences and also by planning ahead.
- Time Management: It is very important to utilize time management. Pilots should think ahead and not leave tasks for the last minute. This not only reduces stress but also helps ensure safety during the flight (Flight Safety Foundation, 2006, p. 1).

Flight Student Stress

An initial examination of flight students' stress was conducted by Robertson and Ruiz in 2010. In this study, 76 male and 7 female flight students surveyed. Students

ranged from first year college students to seniors. The greatest percentages of respondents were from the pre- solo primary training course. There were also students from post-solo, instrument training, and commercial training, and there were respondents who did not indicate which flight course they were enrolled in.

According to the results obtained, the aspect of aviation training that students feel are the most stressful are check rides and financial factors. Some other factors that they also included were written exams, flight course workload, check ride scheduling and time management. Also, when students were asked how stress affected their performance, it was found that 15 students indicated that stress affected them negatively and 35 believed that stress affected them positively. Twenty four indicated that the effect depended on the stressor whereas three respondents said that stress had no effect on their flight performance. When asked about their coping techniques to overcome stress, students indicated that they listened to music, talked to friends or family, engaged in outdoor activity, watched television, or slept. The least likely things the students did to reduce stress were smoke, write in a journal, meditate, do yoga or abuse drugs. The students were also asked if they thought their coping techniques were constructive and 55 students indicated that they believed their stress coping strategies were constructive, nine students indicated that they did not believe they were constructive and 16 students said it depended on the situation. Students were also asked if their academic department could help in some way to reduce stress and the majority of these comments revolved around financial concerns, the stress of check rides, and the need for study groups. Some students also had concerns about course completion and aircraft availability.

Statement of the Problem

There have been many studies related to stress among college students and to add to this body of knowledge, the purpose of this research was to determine what causes stress among the student pilots enrolled in the Middle Tennessee State University flight program, to find out what students think could be some possible ways to reduce their stress, and to compare the results with the previous study discussed above which was conducted by South Illinois University.

The specific research questions to be addressed in this study include:

1. What aspects of a collegiate aviation training program do students find to be most stressful?
2. How do aviation students believe stressors affect their flight performance?
3. What coping techniques do flight students employ to deal with these stressors?
4. In what way do the flight students feel the program, department, and university could help them with their stress level?
5. What effect, if any, does flight course level have on perceptions of stress levels among students?

CHAPTER II- METHODOLOGY

This research was done to evaluate and analyze what stressors Middle Tennessee State University (MTSU) flight students experience and how they deal with stress. A survey methodology was used for this study, utilizing the same questions used by Robertson and Ruiz in the Southern Illinois University flight student study discussed previously. This was necessary to be able to compare the data between MTSU flight students and SIU flight students. This study was approved by the MTSU IRB, protocol # 14-113, see Appendix A.

Participants

The target group for this study were the students enrolled and actively flying in the professional pilot curriculum at MTSU. This included students enrolled in private, instrument, commercial, CFI, and multiengine training. To gather data, 65 students from these different flight courses mentioned above participated in this study. This study included 50 male students and 8 female students.

Instruments

The survey utilized (see Appendix B) was based on same questionnaire that was used by Robertson and Ruiz in their study, so that comparisons could be made with the survey results. The questionnaire was based on a five point Likert Scale and an option was given to students to input their thoughts on their perceptions of stress in their own words. This survey was divided into three parts. The first part included a number of stressors that college students might face, and participants evaluated each stressor using a Likert Scale format where 1 was indicated to be no stress and 5 was indicated be high

stress. This section also asked students what they believed affected their flight performance and what could be done by the Aerospace department or the university to help them reduce their stress.

The second part of the survey was designed to analyze the techniques student use to relieve stress. This section was in yes or no question format. There were options provided for relieving stress and students were given the option to select an option from the list provided. The ability for students to provide their own choice of method of stress relief was also provided.

The third section of the survey was designed to collect demographic data such as age, gender, the flight course the participant was enrolled in, the number of lessons the student had completed, their year in school, and their estimated flight time. This data was to assist in identification of differences in stress related to gender, age, flight time, or flight course. The survey was designed so that it would be completely anonymous so that students could freely give their opinion without concern. For research purposes, each submitted survey was identified by a serial number from 1 to 65.

Procedure

Permission was requested from the MTSU Chief Flight Instructor to conduct the survey in the mid semester group meeting required of each MTSU flight student every semester. The survey was done in a classroom environment and was conducted at the beginning of these sessions. Each semester, four mid semester sessions were held across two days (one in the morning and one in the afternoon of each day) to accommodate student schedules, and all active flight students were required to attend one session.

Students were briefed about the survey and were told the reason for conducting the study, as required by IRB procedures. Students were also briefed that the study was being conducted for research purposes only and that it would not be used against them in any fashion by their professors, and that it would not affect their grades. Students were then provided with consent forms to sign to participate in the study. They were advised that their participation was completely voluntary and that they could leave the classroom any time they wished. Everyone choose to participate.

The survey was conducted in paper format since the students were in a classroom that did not allow individual student computer access. The survey was distributed in the beginning of the session and students were given approximately 15 minutes to complete the survey. Once they were done the survey paper was collected and serial numbers were allocated to the returned survey forms.

CHAPTER III- ANALYSIS

There were a total of 65 people who completed the survey and their ages ranged from 19 years to 38 years old, with a median of 21 years and a mean of 22.24 years (see Table 1). Of these 65 students, 1 was a freshman, 12 were sophomores, 22 were juniors, 17 were seniors and 4 were 5 years or more into college. Out of the 65 students, 56 students indicated their year in college and 9 did not respond. There were 51 male, 7 female and 7 students who did not indicate their gender (see Table 2). There were 11 (16.9%) students enrolled in private pilot training, 16 (24.6%) students enrolled in instrument training, 17 (26.2%) in commercial training, 7 (10.8%) students enrolled in CFI training, 5 (7.7%) students enrolled in multiengine training and 9 that did not indicate the course in which they were enrolled (see Table 3).

Table 1

Age of Participants

Mean	22.24
Median	21.00
Std. Deviation	2.748
Minimum	19
Maximum	38

Table 2

Gender of Participants

	Frequency	Percent
Male	51	78.5
Female	7	10.8
Total	58	89.2
Didn't Respond	7	10.8
Total	65	100.0

Table 3

Flight Course – Participants were enrolled in

	Frequency	Percent
Private	11	16.9
Instrument	16	24.6
Commercial	17	26.2
CFI	7	10.8
Multiengine	5	7.7
No Response	9	13.8
Total	65	100

Statistical Analysis Approach

Univariate and bivariate statistical analyses were conducted in this study.

Univariate (single variable) statistical analysis was conducted for the variables age, gender, flight course, stress causing factors, and stress relieving factors. Bivariate (two variables) statistical analysis was also conducted to study whether the methods of stress relief were constructive or not. For conducting the bivariate statistical analysis, cross-tabulation as well as Person's Chi-square test was conducted. Analysis based on cross-tabulation was chosen for this study as it is an appropriate method for the study of categorical variables. In this study, all the stress relievers were categorical variables. Specifically, each of the stress relievers are divided into two categories: yes and no. Similarly, the variable constructive has been divided into three categories: no, yes, and depends. To construct a cross-tabulation, the variables with their categories have been kept in the rows and the columns. The data given in all the cells of a cross-tabulation are the observed cell frequencies for each of the categorical variables. The observed cell frequencies are the actual number of cases falling in different cells of the table. The Pearson's Chi-Square test of independence was used to test the hypothesis of the two

categorical variables are independent from each other or not. Specifically, this is used to test the hypothesis that the row and column variables are independent. The statistical significance was determined at $p < 0.05$. A p-value less than 0.05 indicates that the two categorical variables are not independent and there is a relationship between the two categorical variables. The Pearson's chi square test statistic can be computed by the following formula:

$$\chi^2 = \text{sum of } \frac{(\text{observed frequency} - \text{expected frequency})^2}{\text{expected frequency}}$$

The expected cell frequencies are the number of cases that should fall in each cell if there was no relationship between the two categorical variables. The expected cell frequencies were calculated by multiplying the total of the row by the total of the column to which the cell belongs and then dividing by the total number of the sample size. A smaller chi-square value indicates that the two categorical variables are independent of each other, indicated by the associated p-value being more than 0.05. On the other hand, if the associated p-value of the Chi-square statistic is less than 0.05, then it indicates that there is statically significant relationship between the two categorical variables.

Student Evaluation of Stressors

Just as with the SIU study, 28 stressors were provided to the participating students and they were to select the level of stress the factors induced. Participants were given a Likert Scale where 1 was no stress, 2 was low stress, 3 was moderate stress, 4 was a little more than moderate stress and 5 was high stress. The result for each item evaluated can be seen in Table 4. It was found from the study that the factor that caused most stress was Checkride ($M = 3.72$), Money ($M = 3.2$), and Written Exam ($M = 3.02$). There were

other factors that were moderately stressful, with means greater than 2.5, included Course Workload (M= 2.9) and Course Schedule (M= 2.89). The analysis done by Robertson and Ruiz found the two most stressful factors faced by the SIU students were Checkrides (M=3.76) and money (M= 3.76). Students at SIU also considered written exams (M = 2.92), Course Workload (M = 2.86), Checkride Scheduling (M = 2.67), and Time management (M = 2.5) as moderately stressful. When comparing the results of both studies it can be seen that the students identified some stressors in common such as money and checkrides being the highest stress faced by college flight students and course workload being identified as a moderate stress.

Table 4

Stress Causing Factor MTSU

	N	Mean	Std. Deviation
CFI Available	65	1.98	1.192
CFI Personality	65	1.80	1.202
CFI Capability	65	1.71	1.042
Flight/Schedule	65	2.09	1.128
AC Availability	65	2.03	1.104
Course Workload	65	2.91	1.027
Checkride	65	3.72	1.125
Checkride- Scheduling	65	2.89	1.336
Money	65	3.12	1.463
Transportation	65	1.42	.827
Family	65	2.05	1.192
Peer Pressure	65	2.11	1.214
One on One Instruct.	65	1.58	.827
Flying AC	65	1.85	.972
Flying Sim	64	1.58	.832
Certification Pwrk	63	1.75	.933
Completion- Agreements	54	1.54	.862
Housing	64	1.67	.944
Flight Training- Expectation	65	2.22	1.053
Registration	65	1.88	1.068
Program Policies	65	1.65	.759
Support Staff	65	1.42	.583
ATC	65	2.32	1.120
Time Management	65	2.40	1.058
Work	65	2.23	1.222
Social Readjustment	65	1.65	.874
Responsibility to Operating Equipment	65	1.80	.905
Written Exams	65	3.02	1.125

Effect of Stress on Performance

In the survey the students were asked if they thought that stressors they faced as an aviation student had a positive or negative effect on their flight performance, and 37 (56.9%) said that they had a positive effect (see Table 5). In the comment section later in the survey the students mentioned that stress helped them focus and reach their goals in time. Stress seemed to motivate the students to work harder. There were 10 students (15.4%) that said stress effected them negatively. They mentioned that stress made them nervous and this led them to not focus on the job at hand. They said their performance during flying is affected when they are stressed and they tend to make mistakes. There were 13 (20%) students who said that how it effects them depends on the situation. There was 1 (1.5%) student who said that stress had no effect on them.

When this study was done at SIU it was found that 35 (42.2%) said that stress had a positive effect, 15 (18.1%) thought it had a negative effect, 24 (28.9%) thought that the effect depended on the stressor, 1 (1.2%) were unsure and 3(3.6%) thought that stress had no effect on them.

When compared, both universities' students thought that stress affects them positively in flight situations (see Table 6).

Table 5

Effects of Stress MTSU

	Frequency	Percent
Negative	10	15.4
Positive	37	56.9
Depends	13	20.0
Unsure	1	1.5
No Effect	1	1.5
Total	62	95.4

Table 6

Effects of Stress SIU

	Frequency	Percent
Negative	15	18.1
Positive	35	42.2
Depends	24	28.9
Unsure	1	1.2
No Effect	3	3.6
Total	78	94.0

Techniques of Dealing with Stress

A total of 22 stress relief options were given to the students, and they were to select “yes” or “no” regarding whether they used each of the stressor relievers listed. For analysis, cross tabulation was done between those factors considered constructive and the variables (the stress relievers) and a Chi- Square test indicated that the stress relievers that were significant ($<.05$) or close to significant were nothing whose chi- square is 6.27 and p value is .043 (see table 8 and 9), exercising whose chi-square value is 10.97 and p value is .004 (see table 10 and 11), talking with friends and family whose chi-square value is 9.70 and p value is .008 (see table 12 and 13), outdoor activities whose chi-square is 9.30 and p value is .010 (see table 14 and 15), under eating whose chi-square is

5.72 and p value is .057 (see table 16 and 17), and overeating whose chi-square is 6.19 and p value is .045 (see table 18 and 19) . Thus, it appears that when MTSU students are stressed they do nothing, exercise, talk to friends and family members, do outdoor activities, under eat or over eat. The things that MTSU students were least likely to utilize to deal with stress included listen to music, watch television, and yoga. In the study done at SIU the same 22 options were provided to students and it was found that students listened to music, talked to friends and family, participated in outdoor activities and watched television. The things that they were least likely do to deal with stress were smoke, mediate, yoga or drug abuse.

When the two universities were compared it was found that the students have different preferences, meaning different activities to relieve stress. There were two activities that both students preferred were talking with family and friends and during outdoor activities.

Overall, students at MTSU thought that the methods that they choose to relieve stress were constructive. About 38 (58.5%) thought that they were constructive, 11 (16.9%) thought that it was based on the situation and 6 (9.2%) thought that this were not constructive (see Table 7)

Table 7

Constructive

	Frequency	Percent
No	6	9.2
Yes	38	58.5
Depends	11	16.9
Total	55	84.6

Table 8

Crosstab- Nothing

		Constructive			Total
		No	Yes	Depends	
Nothing	No	0	19	6	25
	yes	6	18	4	28
Total		6	37	10	53

Table 9

Chi-Square Test- Nothing

	Value	Df	p Value
Pearson Chi-Square	6.27	2	.043
Number of Valid Cases	53		

Table 10

Crosstab- Exercise

		Constructive			Total
		No	Yes	Depends	
Exercise	No	4	4	2	10
	Yes	2	34	9	45
Total		6	38	11	55

Table 11

Chi-Square Test- Exercise

	Value	Df	p Value
Pearson Chi-Square	10.97	2	.004
Number of Valid Cases	55		

Table 12

Crosstab- Talking with Family and Friends

		Constructive			Total
		No	Yes	Depends	
TalkFF	No	4	5	2	11
	Yes	2	33	9	44
Total		6	38	11	55

Table 13

Chi-Square Test- Talking with Family and Friends

	Value	D f	p Value
Pearson Chi-Square	9.70	2	.008
Number of Valid Cases	55		

Table 14

Crosstab- Outdoors

		Constructive			Total
		No	Yes	Depends	
Outdoors	No	3	2	2	7
	Yes	3	36	9	48
Total		6	38	11	55

Table 15

Chi-Square Test- Outdoors

	Value	D f	p Value
Pearson Chi-Square	9.30	2	.010
Number of Valid Cases	55		

Table 16

Crosstab- Under Eating

		Constructive			Total
		No	Yes	Depends	
Undereat	No	6	34	7	47
	Yes	0	4	4	8
Total		6	38	11	55

Table 17

Chi-Square Test- Under Eating

	Value	Df	p Value
Pearson Chi-Square	5.72	2	.057
Number of Valid Cases	55		

Table 18

Crosstab- Over Eating

		Constructive			Total
		No	Yes	Depends	
Overeat	No	6	31	6	43
	Yes	0	6	5	11
Total		6	37	11	54

Table 19

Chi-Square Test- Over Eating

	Value	Df	p Value
Pearson Chi-Square	6.19	2	.045
Number of Valid Cases	54		

Department or University Assistance with Stress

In the survey, students at MTSU were asked an open ended question about whether the university or the department could do anything different to help students with stress and 23 (35.4%) students responded by saying that there was nothing the department or university could do. In fact most of the students were very happy with the program and the way it was managed. There were 8 students (12.3%) who said that financial aid was an issue. They needed more money to cover their flying and lab expenses, 5 (7.7%) said that if aircraft were available more frequently their stress would be reduced, 4 (6.2%) said that there are very few instructors available to them or there are large groups of students assigned to one instructor (see Table 20). They would like to have more instructors and more one on one time with their instructor. There were 22 students who did not respond to this question. When compared to SIU, MTSU students had very similar comments. According to their survey, some of the ways SIU students thought that their stress could be reduced were by providing more financial aid, by more aircraft availability, by increasing the number of instructors, and by encouraging the formation of study groups.

Table 20

How Department/University Can Help

	Frequency	Percent
Financial Aid	8	12.3
Aircraft	5	7.7
Flight Instructor	4	6.2
Resources	1	1.5
Communication	1	1.5
Other	1	1.5
Total	65	100.0

CHAPTER IV-DISCUSSION

The main purpose of this study was to determine the factors that cause stress among MTSU flight students who are undergoing flight training. Another purpose of the study was to find out what different methods are used by these flight students to mitigate stress. A comparison of stress factors and the techniques used to avoid stress was performed using students of Middle Tennessee State University and Southern Illinois State University to observe if there were any trends. An analysis of the study research questions follows

The Aspects of a Collegiate Aviation Training Program that Students Find to be Most Stressful.

When the data analysis was performed it was found that MTSU student thought money and checkrides caused the highest stress for them. Students also thought that their course workload and course schedule was a factor that caused them stress. There were other options provided to students which one would assume causes stress, such as transportation, family expectations, flying airplanes, and work, but none of these had any significance when the analysis was performed.

How Aviation Students Believe Stressors Affect their Flight Performance.

The majority of the students thought that stress was a positive influence in their life. They considered stress helpful in reaching their goals. Students also believed that stress helped them stay focused. Students thought that stress helped them balance their work and helped attain their career. Some students thought stress had a negative impact. These students thought that stress affected their flying performance. Due to stress, these

students made more mistakes and could not focus on the job of flying the aircraft or in their studies. A minority of the students thought that the way stress affected them depended on a case by case basis. Sometimes stress was positive and sometimes negative.

Coping Techniques Flight Students Employ to Deal with Stressors

There are different ways of coping with stress. There were a number of options given to the students such as yoga, exercising, alcohol, smoking, drug and so on. Different students have different perspectives but during the study it was found that flight students at MTSU coped with stress by exercising, talking to friends and family, doing outdoor activities, over eating and by under eating. During research it was found that over eating is one of the most common methods of reducing stress and this survey provided proof that over eating is indeed sometimes used to help reduce stress. During research it was also found that outdoor activities and exercising helped students relax and stay focus. The study does show that outdoor activities help student relieve stress. Other methods that students thought helped them was under eating and talking with friends and family. Some students found that not eating enough helped them relieve their stress. Talking with friends and family helped them discuss problems, issues, and stress they were dealing with which helped them reduce stress.

How Flight Students Feel the Program, Department, and University Could Help them with their Stress Level.

The students thought that the department/university was doing a good job overall of helping them with their stress. Since students thought that money was a financial constraint, they wanted some sort of support from the department. They wanted the

department to provide the students with additional resources and also provide them with additional scholarships. Students also thought that there were not enough instructors and aircraft. They wanted more availability of aircraft for them to practice, which would help them in their flying course and reduce their stress.

During the study it was found that students from both universities faced similar issues and used similar techniques to relieve stress. The most stressful item that students indicated were funding their education and their flight training program. Students at both universities found it hard to arrange financial matters. Students at MTSU specifically indicated they would like the department to come up with additional scholarships.

Another factor that causes a large amount of stress in flight students are taking their checkrides. During their checkrides students feel the pressure to do well and this causes them stress. This stress can be reduced by making additional aircraft and flight instructor available. This will help student practice more and give them an opportunity to ask question to instructor so that they can confident when students are doing their checkrides. A few students felt that they do not have enough aircraft when they want to practice, and a few students felt that the school did not have enough flight instructors. To reduce stress, students would like to have more instructors and more interaction with that instructor.

Another factor that caused stress was course workload. Students at MTSU feel the amount of course work that they have in addition to flying causes them stress. To avoid stress some students would like to have more interaction with their professors. Overall students are happy with the program that the department offers. Students take their own initiative apart from the help they request from the department to relieve stress by

exercising, talking to friends and family, under eating and over eating. Items such as alcohol were the least indicated stress reliever used by students.

The majority of the students from both universities believed that stress has a positive effect on their career. Students believe that stress helps them work harder, focus and reach their goal. Even though they are sometimes stressed during flying it helps them perform better and do better each time they fly.

Limitations

Some of the limitations is that when using a survey, which was utilized in this study, there is the possibility of omission of replies altogether to certain questions. This was experienced in this study, as some of the students did not respond to some of the questionnaire items. One of the major limitations of the questionnaire survey is that it is difficult to assess whether the students' responses to various items represent the true response of individual students. Due to time limit and also because it was conducted in the beginning of each class it will be hard to determine if the responses from students were honest. Even though students were told in the beginning of the class that the study is confidential, some students may not have trusted that and may not have been honest about their answer. Statistical analysis could not be carried out in this study to see the effect of stressors and stress relievers based on gender as the number of females represented only 10.8 % (7 females) out of total number of students (65 students) who participated in this study. Another limitation was data could only be collected from MTSU students and not from different schools. The study should be replicated using a large number of schools and participants, so the results can be made more dependable

and reliable.

The way the questionnaire was designed it was not possible to do statistical significance through Cross table and Chi-Square test for the results that were evaluated in percentage.

Recommendations

Based on the results of this study one recommendation would be to offer students counseling about their financial concerns. Different communication methods should be used to make the student aware of the funding and scholarship opportunities available. Perhaps additional effort to make incoming students aware of the financial burden that comes with the flight training may be useful. It may also help if sessions were organized with students who have already graduated or who are seniors in the program, so that younger students will benefit from their experience. For checkride preparation forming small groups and organizing question and answer session may prove helpful. Also, students should be encouraged to interact more with their advisor in regards to their course load and any issues that they may be facing during their training. It would be beneficial to perhaps offer a one credit course to introduce students to the flight program and have the different speakers and advisors come to the class and talk to the students. This would give the students the opportunity to interact with different advisors and have time to decide their career done. Students should also be encouraged to enroll in extracurricular activities to help them reduce stress. Students should also be encouraged to be organized and prioritize as planning ahead of time, and submitting assignments on time can help reduce stress. Students should try to follow the syllabus offered by college.

Additional Research

This study should be conducted on a larger population. As mentioned by Robertson and Ruiz, it would be beneficial to conduct studies to see if stress affects genders differently. Additional work could also be conducted to see if the genders have different methods of coping with stress. Another potential study would be to conduct a flight in a simulated environment with stress induced to see how students react to it and if there are any negative effects on the flight performance. Students could be exposed to extreme situations such as stalls, spins and unusual altitude and determine how students react to stress in flight in a simulated environment. This could also be done during the checkride where the students are asked to do stalls, spins and unusual altitude and asked to recover from it. A survey could be given to the instructor during the checkride to assess the stress level the student is experiencing and after the checkride the same survey is given to the student to see if the above mentioned scenario caused stress. Another potential study that could be done would compare aviation students who do not fly with flight students. A similar survey could be utilized to see what both group of students thought their main source of stress are, and the methods they use to mitigate this stress. It would be interesting to see if both groups identified the same factors that caused stress. The way questionnaire survey was designed, it was not possible to infer that course workload and course schedule was a statistically significant factor that caused them stress by doing Chi Square Test. Results can only be derived from mean and standard deviation. As a future scope of work, the questionnaire survey should be modified so that statistical significant test can be instead of mean and standard deviation.

Also some variable such as financial aid, course workload, and course schedule had to be evaluated in percentage and not Chi-Square. For future if a Chi-Square Test has to be done a control setting is required where a group of students are given financial aid and other group is not and then a questionnaire on stress should be provided to the students to evaluate stress and Chi- Square should be used to evaluate the results.

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APPENDICES

APPENDIX A: IRB APPROVAL

October 17, 2013



Amrita Bhattacharya, Wendy Beckman
Department of Aerospace
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Protocol Title: "Perception of Stress Among College Aviation Student"

Protocol Number: 14-113

Dear Investigator(s),

The exemption is pursuant to 45 CFR 46.101(b) (2). This is because the research being conducted involves the use of educational tests, survey procedures, interview procedures, or observation of public behavior.

You will need to submit an end-of-project report to the Compliance Office upon completion of your research. Complete research means that you have finished collecting data and you are ready to submit your thesis and/or publish your findings. Should you not finish your research within the three (3) year period, you must submit a Progress Report and request a continuation prior to the expiration date. Please allow time for review or requested revisions. Your study expires on **October 17, 2016**.

Any change to the protocol must be submitted to the IRB before implementing this change.

According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to provide a certificate of training to the Office of Compliance. **If you add researchers to an approved project, please forward an updated list of researchers and their certificates of training to the Office of Compliance before they begin to work on the project. Once your research is completed, please send us a copy of the final report questionnaire to the Office of Compliance.** This form can be located at www.mtsu.edu/irb on the forms page.

Also, all research materials must be retained by the PI or **faculty advisor (if the PI is a student)** for at least three (3) years after study completion. Should you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,

Andrew W. Jones
Compliance Office

APPENDIX B: SURVEY FORM

Stressors

Please rate each of the listed stressors using the following scale to describe the magnitude of the stress they cause.

1 = No stress, 3 = Moderate stress, 5 = Severe stress

• Flight Instructor availability	1	2	3	4	5
• Flight Instructor personality	1	2	3	4	5
• Flight Instructor capability	1	2	3	4	5
• Flight / Scheduling	1	2	3	4	5
• Aircraft Availability	1	2	3	4	5
• Flight Course Workload	1	2	3	4	5
• Checkrides/ Practical Tests	1	2	3	4	5
• Checkride Scheduling	1	2	3	4	5
• Financial Resources	1	2	3	4	5
• Transportation to/from Airport	1	2	3	4	5
• Family Expectations	1	2	3	4	5
• Peer Performance / Pressure	1	2	3	4	5
• One on One Instruction	1	2	3	4	5
• Flying the Airplane	1	2	3	4	5
• Flying the Simulators	1	2	3	4	5
• Certification Paperwork	1	2	3	4	5
• Completion Agreements(If Applicable)	1	2	3	4	5
• Housing	1	2	3	4	5
• Flight Training Expectations	1	2	3	4	5
• Advisement and Registration	1	2	3	4	5
• Program Policies	1	2	3	4	5
• Support Staff	1	2	3	4	5
• ATC Interaction	1	2	3	4	5
• Time Management	1	2	3	4	5

• Work	1	2	3	4	5
• Social Readjustment(To college)	1	2	3	4	5
• Responsibility of Operating Equipment	1	2	3	4	5
• Written Exams	1	2	3	4	5
• Other _____	1	2	3	4	5
• Other _____	1	2	3	4	5

Do you think that the stressors you face as an Aviation Flight Student have a positive or negative effect on your flight performance? Explain.

Is there any way that the program/department/university could help alleviate any of these stressors? If so, how?

Stress Relief

What do you do to relieve stress? Please circle the Y for Yes or N for No in response to the following list of activities.

• Nothing	Y	N
• Exercise	Y	N
• Meditation	Y	N
• Yoga	Y	N
• Smoke	Y	N
• Breathing Techniques	Y	N
• Under-eat	Y	N
• Muscle Relaxation	Y	N
• Go shopping	Y	N
• Massage Therapy	Y	N
• Drug Abuse	Y	N
• Talk to Friends or Family	Y	N
• Read a Book	Y	N
• Write in a Journal	Y	N
• Drink Alcohol Excessively	Y	N
• Listen to Music	Y	N
• Watch T.V.	Y	N
• Play Video Games	Y	N
• Engage in Outdoor Activity	Y	N
• Make a List	Y	N
• Sleep	Y	N
• Over Eat	Y	N
• Other _____		
• Other _____		

Would you consider the methods you choose to relieve stress to be constructive?

Please provide the following demographic information.

Age _____ Gender _____ Current Flight Course _____

Lessons Completed _____ Estimated Flight Time _____ Year in School _____