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Effectiveness of TSA Regulations in General Aviation

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EFFECTIVENESS OF TSA REGULATIONS IN GENERAL AVIATION

For

The Lee Honors College

Western Michigan University

Kalamazoo, Michigan

By

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Introduction

General aviation (GA) security is one the industry's most prominent topics. Despite the weaknesses in the GA sector that could lead to a destructive event, John Sammon states in his 2009 statement before the House of Representatives, "the vast majority of the GA community is responsible and concerned about safety," as he dismisses the threat. Although this may be true about most of those involved in GA, it is common knowledge that some people wish to cause harm. With a direct and indirect economic impact exceeding \$102 billion annually (Advisory Committee, 2003) and many lives at stake, concerns of this matter cannot be ignored or taken lightly.

Definition of Key Words

AOA: Aircraft Operating Area

AFSP: Alien Flight Student Program

ASAC: Aviation Safety Advisory Committee Working Group (consists of representatives from the Aircraft Owners & Pilots Association, Airports Consultants Council, American Association of Airport Executives, Experimental Aircraft Association, Helicopter Association International, National Air Transportation Association, National Association of State Aviation Officials, National Business Aviation Association, and the United States Parachute Association.)

DHS: Department of Homeland Security

FAA: Federal Aviation Administration

FBI: Federal Bureau of Investigation

FBO: Fixed Based Operator

GA: General Aviation

GAO: United States Government Accountability Office

ICE: U.S. Immigrations and Customs Enforcement

LASP: Large Aircraft Security Program

NBAA: National Business Aviation Association

NPRM: Notice of Proposed Rulemaking

PCSSP: Private Charter Standard Security Program

SMS: Safety Management Systems

SeMS: Security Management Systems

TFSSP: Twelve Five Standard Security Program

TSA: Transportation Security Administration

Defining General Aviation

All civil aviation, excluding scheduled passenger service and the military, is included under the GA category, accounting for about 77% of all air traffic in the US and ranging from ultra-light aircraft for one person to maxi jets (Advisory Committee, 2003). There are about two hundred thousand GA aircraft that operate at more than nineteen thousand facilities (GAO, 2012).

Perspectives in General Aviation

GA security is a highly discussed topic because it is difficult to reconcile the opinions of all parties involved to create a safe, affordable way to conveniently fly. Viewpoints held by regulatory agencies, pilots, passengers, and industry stakeholders add to the controversy. Some of the reasons passengers utilize private aircraft is the convenience offered to them and the current safety record. GA businesses wish to prevent a security incident at their fixed based

operator (FBO), corporate hangar, or flight school, but do not want to hinder the convenience or incur large implementation costs for a security system. Industry stakeholders have enhanced security through developing guidelines, which they believe are more comprehensive than regulation at the state or federal level given the wide variety of operations within the industry. These industry stakeholders undergo compliance inspections, through which the Transportation Security Administration (TSA) obtains information to develop new security regulations (GAO, 2012).

The resolution process must begin by examining the sector as a whole, identifying its weaknesses, and determining its current security state. What improvements need to be made by the pilots, corporate flight departments, and general aviation businesses, if any? Are current rules and processes working or does the TSA need to create and enforce stricter regulations? According to the Aviation Safety Advisory Committee (ASAC), “a flexible, common-sense approach to GA airport security is mandatory if the industry is to retain its economic vitality and prosper.”

Problem Statement

Are regulations in the GA industry efficient when one considers stakeholder perspectives, current regulation, and proposed rules, and if not, how can the process be modified to eliminate weaknesses?

Literature Review

Identifying a Threat

There have been multiple examples where security in the GA sector has been compromised. In 2010, an angered pilot crashed his single engine plane into an Internal Revenue Service building in Austin, Texas. The fiery suicide that killed two and injured thirteen caused multiple explosions, but the Police Chief at the time refused to call the act terrorism. In 1998, a flight instructor climbed a fence at Embry-Riddle to obtain unauthorized access to one of the school's aircraft, which he used to commit a fiery suicide. Upon being questioned about if Embry-Riddle was going to change their security policy, the school's spokeswoman responded, "If someone is determined to get through and steal a plane, then they can do it" (Smith, 1998). Wildlife intruders, such as birds, deer, and coyote, are often also found on airfields and pose a hazard to aircraft. If a large animal can achieve access to a secure area, what is stopping a person with harmful intentions?

These incidents aside, there have been no terrorist attacks conducted using GA aircraft in the US, according to the TSA. The threat to security presented by GA is limited and mostly hypothetical; and the steps stakeholders, operators, owners, and managers have taken to enhance security are positive and effective (OIG, 2009). It was concluded that "the small size, lack of fuel capacity, and minimal destructive power of most GA aircraft make them unattractive to terrorists, and thereby, reduce the possibility of threat associated with their misuse" (GAO, 2004). On the other hand, the Federal Bureau of Investigation (FBI) has identified terrorists that have considered using GA to cause harm to others, stating, "major vulnerabilities still exist" in the portion of the 9/11 Commission Report concerning GA (GAO, 2012). The TSA has taken the statements of fellow government agencies further by determining that larger GA aircraft may be

able to cause significant damage to buildings and other structures if used to conduct an attack (GAO, 2012). Sammon revealed the threat is not based upon what damage the aircraft can cause. Rather, he says, GA aircraft could be used to introduce dangerous articles into the airside of commercial airports, rather than being utilized as a weapon. Sammon (2009) poses a strong point in his statement. When most think of GA security, they imagine an aircraft being the tool utilized to cause harm, probably because of how the September 11 terrorist attacks were conducted. However, it would be easy for a terrorist to load dangerous persons or materials into his or her aircraft at a non-secure airport and fly to a secure one. Upon landing, the threat would be introduced to the secure area upon his or her arrival with little or no obstruction.

State of the Industry

The TSA eventually developed an assessment program for threats and vulnerabilities at GA airports and a plan to carry out its implementation. With the help of several airport operators, a picture of overall strengths and weaknesses in the industry was painted (GAO, 2011). These assessments, conducted at only a handful of airports, were very costly and it was impractical to have them be performed industry-wide. From April 2010 to May 2011, the Government Accountability Office (GAO) performed security assessments at selected airports, and published a report discussing their findings. The investigators visited thirteen airports after giving advanced notice based on several TSA-determined risk factors and observed what security measures were in place. They were assessing measures against the TSA's 2004 Voluntary Security Guidelines, among other criteria, and focused on outer airport perimeter and curbside-to-planeside security. Documentation of all unauthorized access incidents requested by the GAO, however, reports were not available in all cases. Three incidents involved unauthorized access to airport grounds, not aircraft. At one airport, two planes were taken without access and recovered later. Three of

the assessed airports had implemented all security measures GAO assessed. This is because they offer commercial service at those airports and, therefore, are subject to TSA regulation. Twelve of the airports had fencing or natural barriers as suggested by TSA, but six were considered inadequate since they had bushes or trees that could obstruct surveillance or allow easy access over the fence. All thirteen airports had hangar lighting, but the ten non-commercial serving airports did not have perimeter lighting. Lighting is of great importance because it acts as a physical and psychological deterrent. The ten GA-only airports had varying, but inconsistent intrusion monitoring, ranging from CCTV to onsite law enforcement (GAO, 2011).

Current State of Regulation

The regulatory bodies that have a major role in the modification of aviation regulation are the TSA and the Federal Aviation Administration (FAA). The TSA has exercises authority over the travelling public in the US while they work to protect the nation's transportation systems to ensure freedom of movement for people and commerce. They have the power to create rules to preserve safe transportation and enforce them as necessary. The FAA is the governing body over aviation in the US, and has the powers to regulate and oversee all aspects of it as they work to provide the safest, most efficient aerospace system in the world. The FAA exercises their jurisdiction through the issuance of Federal Aviation Regulations (FARs). There are FARs to cover all aspects of the aviation industry. The TSA and the FAA have a rulemaking process that begins with a Notice of Proposed Rulemaking (NPRM) that allows for public comments before the rule becomes effective. This thesis focuses on the TSA instead of the FAA because the TSA's mission is to ensure the safe, efficient flow of transportation where the FAA regulates all aspects of aviation, security being only one subject.

Although the attacks taking place on September 11, 2001 were carried out upon American commercial air carriers, all aspects of the aviation industry were changed. The public was more skeptical about flying, and regulations increased. These federal mandates affected pilots, commercial operators and businesses, and airports and airspaces (Advisory Committee, 2003). Despite this, the TSA does not directly regulate many aspects of GA, but rather acts as an overseeing body by implementing requirements, providing guidance, enforcing regulations, and offering some funding. Responsibility for securing GA rests with airport owners, operators, and users because of the size and diversity of the GA industry and competing needs of the commercial sector. Airport operators are encouraged by the TSA to perform self-administered risk assessment based on measurement tools that consider location, number of based aircraft, runway length, and number of annual operations. Then, operators can decide whether to implement countermeasures such as fencing, perimeter controls, aircraft locks, hangars, CCTV, lighting, and access control systems (GAO, 2011). Are these assessments taking place, and if so, are the improvements being made?

Airports and airspaces.

Airspace restrictions and limited aircraft operations have been placed at various US locations including certain areas where intelligence officials believe there is a need for heightened security sensitivity. These include the Flight Restricted Zone of the President while he or she travels, nuclear facilities, and stadiums where sporting events are occurring. These restrictions also protect the Air Defense Identification Zone, a thirty nautical mile ring around Washington DC. According to Carafano (2007), this regulation has proved more of a burden than asset because of its high cost of \$11 million per year, pilot inconvenience, and little security benefit. He believes it should be eliminated. Flights to and from Ronald Reagan Washington

National Airport must adhere to specific security measures including background checks for crew members and passengers, and baggage screening (GAO, 2011). While changes to GA security policy are being made federally, these hindering restrictions implemented immediately after September 11 do not get revised. The FAA has not recently revalidated the need for flight restrictions that limit access to airspace for indefinite periods of time or reviewed how it could negatively affect the GA industry (GAO, 2004)

A hotline, known more commonly as Airport Watch, is constantly available for pilots and others involved in the aviation industry to call if they need to report suspicious activity at an airport. This program, supported by the Aircraft Owners and Pilots Association, encourages reporting aircraft with unusual modifications, pilots appearing to be under the control of others, unfamiliar loitering persons around airports, suspicious aircraft lease or rental request, and threats (GAO, 2011). The Airport watch program has prevented theft and break-ins at airports in Kansas, Missouri, Ohio, Georgia, Arkansas, and Minnesota (Carafano, 2007).

Pilots and students.

The TSA and FAA hold the right to immediately suspend, revoke, or refuse to issue pilots their airmen certificate if the TSA determines they pose a threat to transportation security based on information held by the TSA and other security agencies. The Department of Transportation has replaced its paper-based airmen certificate and issued a security-enhanced plastic card difficult to counterfeit due to the holograms and graphics. The FAA requires this card to be carried along with government-issued photo identification when operating an aircraft.

It is not as easy for pilots to obtain a certificate now that regulations have been put into place. Foreign nationals seeking their US certificate on the basis of a foreign pilot certificate require background checks. The US Department of Justice will also conduct comprehensive

background checks for non-US citizens who wish to flight train in aircraft weighing over twelve thousand five hundred pounds. As an extra security measure, FAA legislation mandates flight school employees to be trained in “suspicious circumstances and activities” of enrolled or attending students and provides recommendations to prevent the unauthorized use of a rented aircraft (GAO, 2012).

Private operators.

Two regulations are currently in effect for aircraft operators: the Private Charter Standard Security Program (PCSSP) and the Twelve Five Standard Security Program (TFSSP). All aircraft subject to PCSSP or TFSSP must prepare a TSA-approved written security program describing procedures to comply with requirements and ensure the program is available for inspection upon request (GAO, 2012). PCSSP is applicable to aircraft emplaning or deplaning from a sterile area which have a maximum takeoff weight more than one hundred thousand three hundred and nine pounds or greater than sixty one seats. These rules mandate the implementation of a full security program, including passenger screening through metal detectors and x-ray screening for carry on and checked bags conducted by a hired passenger and baggage screening workforce. TFSSP requires aircraft weighing over twelve thousand five hundred pounds maximum takeoff weight to adopt a security program requiring certain precautions, such checking passenger names against the No-Fly and Selectee Lists, designating security coordinators, and having crewmembers undergo security threat assessments.

One chief pilot explains to Thurber (2007) his daily process for complying with TFSSP. Each morning, he downloads the no-fly list from the TSA website to verify his passengers are not on the list (if they are, he must report them to the TSA). He repeats this process for each leg of his trip. When his passengers arrive, he verifies their identity by checking their government-

issued ID. All paperwork is kept on file for one year. The TSA reiterates that matching passengers to watch lists is important because it can prevent those who are believed to pose a risk from boarding an aircraft and potentially gaining control of it to use as a weapon or cause harm. Only about 15% of all GA aircraft are subject to these requirements, according to joint estimated by the Department of Homeland Security and FBI. The remaining 85% (all aircraft under twelve thousand five hundred pounds) are not subject to security regulations. In their thesis, Cason, Lu, and Schreckengast (2011) surmise how it is important that both PCSSP and TFSSP need to be thoroughly and collaboratively conducted by air carriers, airports, and FBOs, but first, low-cost advanced security measures securing airports must be in place. Among the systems mentioned are entrance control and surveillance systems. If they were mandatory, the trio states, unapproved personnel would be restricted and screened before entrance to the secured area. A strong physical security system, or one that prevents unauthorized access to the Aircraft Operating Area (AOA), deters, detects, delays, and denies intruders (GAO, 2011).

Current Controversies

Flight schools.

It was important for regulatory agencies to address rules for flight schools since they have been used in the past for instruction leading to an attack. The terrorists on September 11, 2001 learned to fly at GA flight schools in Florida, Arizona, and Minnesota (GAO, 2012). In 2012, the GAO published a document discussing the weaknesses that still exist concerning flight training of foreign nationals, despite post-September 11 increased regulations. The TSA's Alien Flight Student Program (AFSP) establishes standards for training foreign flight student candidates, requiring submission of biographical information and fingerprints for each student. This

information is used by the TSA to conduct a security threat assessment, which checks a student's criminal history, immigration status, and crosschecks to terrorism-related databases. The GAO highlighted that the AFSP process is not designed to determine whether a flight student is in the country legally, therefore, a foreigner can be approved through AFSP for flight training after illegally entering the country. For example, an Immigrations and Customs Enforcement (ICE) investigation of a flight school in March 2010 led to the arrest of six foreign national students who had passed the AFSP but entered the country illegally (GAO, 2012). More than twenty five thousand foreign nationals applied for FAA airman certificates between January 2006 and September 2011, indicating they had completed flight training; however, computerized matching determined that a number of foreign nationals did not match those within the TSA's database, raising concern that these foreigners may not have been vetted in the AFSP process (GAO, 2012). This risk could be lowered with a joint TSA and ICE plan to match names of foreign flight students to immigration databases with specific steps, time frames and desired outcomes (GAO, 2012).

Large aircraft security program.

In October 2008, a revolutionary NPRM the Large Aircraft Security Program (LASP), applies security measures designed for commercial carriers to private aircraft (NBAA, 2011). This highly debated NPRM has resulted in five public hearings within the US, drawn thousands of public comments, and even extended the public comment period further than usual (Sammon, 2009). LASP affects any part ninety one flight with a maximum takeoff weight of more than twelve thousand five hundred pounds, requiring a TSA-approved security plan, third party audit six months after TSA approval and every two years thereafter, an in-house security coordinator equipped with initial and recurrent training, FBI and TSA cleared flight crew, and preflight

checks of all passengers against watch lists performed by a third party. Three hundred and fifteen airports would be required to implement a security program (Thurber, 2011). Some operators oppose the rules for the most part as unnecessary, costly, and logistically difficult to implement or enforce (Thurber, 2011). The TSA defends; however, many GA aircraft are of the same size and weight of commercial operators and could be used for terrorist acts. This portion of the industry could be vulnerable, because except for limited security requirements, there are no required security programs for many operators (Thurber, 2011)

One of these organizations, the NBAA (2011) is not fully in support of the NPRM, and has presented their concerns and reasoning to the FAA. The claim that LASP would apply to some smaller aircraft, “about the size of an SUV,” and recommend that the regulation’s weight threshold should be “carefully reviewed and adjusted to reflect a data-driven, risk-based approach.” They also brought to attention how the regulation would include a list of around eighty items that cannot be carried onboard a GA aircraft. This draws the association’s attention because “the mandate mimics a requirement on commercial airlines,” and they recommend that requirements are specific to each segment’s unique operations and vulnerabilities. For example, they do not believe that a private aircraft with a small group of known individuals in a closely connected group should not be subject to the same measures as a commercial aircraft with a large amount of unknown individuals. They argue that many of these items are necessary to the business needs of the aircraft operator, such as maintenance tools. Business travelers would not have access to things during flight, such as sales products, that they would need to prepare for their presentation. Additionally, it is difficult for the NBAA to understand why the LASP would require a non-commercial operator to carry a federal air marshal when required by the TSA when all background checks and watch-list requirements have been completed and the company that

owns the plane is familiar with its passengers. Lastly, the NPRM includes a mandate for a third-party audit to measure a private operator's security compliance, allowing them access to sensitive and proprietary information and operations. The NBAA would be willing to work directly with the TSA in the auditing process, but does not see the need for a third-party when surveillance and federal oversight are inherently governmental functions.

Thurber (2011) discusses the statistical differences that would occur should LASP become regulation. There are currently six thousand seven hundred and forty nine operators complying with TFSSP and seventy-seven complying with PCSSP. There would be ten thousand operators added if LASP were to become regulation. This would cost the TSA \$133.5 to \$139.8 million dollars to implement over ten years. The industry would have to spend \$1.4 billion over the next ten years in order to comply. An operator's annual cost would increase \$12, 259 to \$28,356 (or about \$44 per flight).

Findings

It is vital that a proactive approach is taken to GA safety. Safety management systems (SMS) and security management systems (SeMS) are recently becoming a standard in daily aviation operations. By adapting and integrating modern risk management and safety assurance concepts into a repeatable business processes; it represents the next step in the evolution of aviation safety. The formalized process identifies potential issues and ensures a plan is put into place to effectively manage the hazard. While efforts are made to identify and address threats before they occur, it is still important that operators have implemented a contingency plan in the case of emergency to minimize the effects that could occur if terrorism affected a business or operator.

Carafano offers an approach to improve the current system in his 2007 publication. He has some interesting suggestions, but others can be dismissed as unreasonable. He first stated that a Trusted Pilot Program would be vital in preventing GA from shutting down completely in the event of another terrorist attack like that of 9/11. This program would ensure a pilot is always granted access to the air in order to respond to emergencies. His belief in the vitality of this program is understandable, as shutting down all airspace is not efficient, especially in cases of emergency responders and aviation medical transport. It is impractical, however, as it is difficult to determine criteria of a "trusted" pilot. He continues that interoperable databases between government agencies and private sectors and full utilization of new technology would streamline GA security processes. While this could make the industry more efficient, some of the government's information is classified, and privacy issues concerning electronic information are a guaranteed problem.

He believes reasonable roles need to be established, stating, "Security activities should be dictated by a comprehensive assessment of risks. Washington is responsible for preventing terrorist acts through intelligence gathering, early warning, and counterterrorism efforts. The private sector is responsible for taking reasonable anti-terrorism precautions in much the same way as society expects it to take reasonable safety and environmental precautions." This is Carafano's strongest suggestion. There should be a clear separation, but he does not mention where responsibility for regulation creation and enforcement should lie. This should be the government's obligation, as the private sector would not be able to agree upon one standardized rule, and cannot fully hold itself accountable.

Lastly, he suggests a layered approach to security would offer different protection at different times, which would be worthwhile. On the ground, threatening persons would be

prevented from flight or access to hangars, flight schools, and airports. In addition, border security should be integrated into GA to prevent the wrong passengers from entering the aircraft. In the air, Congress should bolster the Department of Homeland Security (DHS), Coast Guard, and local law enforcement air assets to patrol for threats from GA aircraft. A program that works for business jets won't work for single engines, so regulations need to be tailored to different types of aircraft, airfields, and aviation services. For cost effectiveness, this layered approach would be applied and enforced industry-wide.

In their 2012 report, the GAO states the TSA has taken measures to enhance communication and interaction with GA stakeholders, resulting in a safer industry. Workshops were held with industry groups and business to discuss GA security issues and resulted in protocols reflected in many best-of-industry practices, some of which can be seen in the ASAC recommendations. They restrict terrorist ability to pilot, purchase, lease, steal, or overtake control of a large GA aircraft (Sammon, 2009). While it is productive to discuss the issues on hand, it is not enough to create ideas and “recommend” them; they need to be acted upon.

Airport operators have also taken several steps such as installing fencing and increasing police patrols (GAO, 2004). Fencing, at a minimum, should be a necessity at all airports. Even then, it would be easy for someone to climb the fence, so security enforcement would be beneficial. It is not enough to have a few security measures in place at selected airports. To improve these current processes, the GAO (2004) recommends the TSA develop a plan for implementing a risk management approach and the FAA establishes a documented process including milestones, time frames, and estimates of staffing and funding to assist in reviewing and revalidating flight restrictions. As ideal as these plans to increase security sound, resources

such as manpower and equipment are limited. DHS noted a lack of funding would be a challenge at most airports (GAO, 2011).

Conclusion

In the GA sector, this issue is so highly debated because of the many clashing opinions on the matter. Stakeholders want to be safe, but in a low-cost way that still fosters the convenience private travel allows. Regardless, security responsibility still rests upon the shoulders of GA industry operators. Although an attack using a GA aircraft is possible, it is unlikely. The inconsistency of security levels at airports leaves creates a dangerously large weakness. Non-secure airports have no fenced areas or security considerations, however aircraft that depart from unsecured areas can arrive unquestioned at secure facilities. The larger threat is the introduction of contraband items into secured areas. It is important that those who are not authorized to be in safety sensitive areas are prevented from entering. If regulation modifications were to occur, different regulations would have to be catered to different sizes of aircraft. Because of the diversity of the GA sector, one regulation does not fit all. It is difficult to enforce all regulations for every flight, and more regulations would require increased equipment and manpower, resulting in a larger cost. The controversial LASP, which suggests heavier regulations for the largest GA aircraft, is heavily debated and even opposed by some organizations, so why would the GA community easily accept more regulation?

The resolution to the problem is derived from observing the weaknesses of the current system. Considering all factors, are regulations efficient in the GA industry? Research suggests increasing TSA regulations is not practical. Rather, the regulations already in place should be enforced sector-wide and recommendations should become actions. To create, recommend, suggest, and plan is not enough, action needs to be taken. Increased enforcement is a step that

must be taken; rule breakers must be caught faced with penalties. A minimum standard of security needs to be established for all airports; fenced AOAs, perimeter lighting, locked hangars should be the most basic considerations. It would cost too much for increased regulations, and in turn could harm small charter businesses. The largest changes need to derive from changing attitudes of those involved in the sector; the changes do not need to derive from the government. Pilots, FBOs, flight schools, airport owners, and other industry stakeholders should make security a high priority and recognize the existing threat. These triumphs of the Airport Watch program should be noted and expanded upon, because when the public is aware of their responsibility and empowered to make a difference, they will act upon it. Proactive attitudes of aviation professionals would help to keep regulations to a minimum and preserve the convenience offered by GA.

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