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Photo By: Grace Byers

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Used Aircraft
Marketplace

AT-10 Wichita
(41-27322)

Garmin brings flight deck
technology and tools

Parts & Service
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Imagine flying a night time approach and suddenly the runway lights disappear into the tall grass. About 20 years ago this happened to Steve Byers at a rural Pennsylvania airport. If the airport had Airfield Mat Systems' airport mats, then this frightening and dangerous moment would not have happened. **Aviation safety** is one of the key reasons why Steve Byers is so **dedicated** to supplying the aviation industry with the solutions that Airfield Mat Systems offers.

Byers is an instrument rated private pilot that owns a 1956 Cessna 172, as well as a Piper Comanche 400, and frequents many airports with lighting systems in the grass shoulders of the runways and taxiways.



Whether on approach or just taxiing around the airport, lights that have their beams blocked by tall grass can be a real concern to pilots. Or an even worse scenario is if the lawn mowing personnel simply mow

over that tall grass not realizing there is a light in there. These are just two scenarios that Byers helps airports avoid with Airfield Mat Systems' products.

Even during his flight training days, Byers learned about other pitfalls of many airport's runway light systems. He had heard that "these lights have a tendency to get knocked down when landscape personnel mow too closely to them, often leaving a large chunk of grass, or after mowing, areas of the airport need to be closed to allow weed whacking or herbicide spraying." This ultimately poses a sizable safety concern to the general aviation community and extra work for airport maintenance personnel, not to mention herbicide spraying is often a ground stearate which has a "who knows what effect" on the people spraying it.

A SOLUTION TO A BIG PROBLEM

Armed with this knowledge, a



personal experience, and a background in creating successful businesses, Byers realized that providing a solution to these problems was a great fit for him and his love for general aviation.



He soon learned that the problems of broken infrastructure assets or unkempt vegetation that covered lights, leaving "blind spots" for pilots, typically arise from inadequate vegetation control

around the light fixture's base.

After spending time doing research and product development, as well as drawing upon his experience as a lawn care entrepreneur in high school, Byers realized that for mowing time to be reduced and the least amount of grass to remain, a high-quality mat in the shape of a football needed to surround the runway lights. Ultimately, this led to his company's flagship product, the patented Football Mat, of which is constructed out of durable synthetic rubber compounds.

FOOTBALL MATS, AN INTUITIVE SOLUTION

Most problems can be solved by careful observation and development. As observation will show, when someone mows adjacent to the runway, the



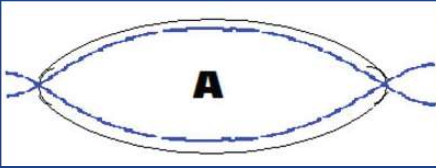
natural mowing path is an elongated elliptical shape surrounding the lights, rather than a perfect circle around each one. Prior to the Football Mats' invention, the only industry "solution" was small, circular mats. The main problem with these mats is the effective area they cover is not considerable, nor do they provide an efficient mechanical advantage for the material of product used.

Referencing the corresponding illustration, the result of a standard circle mat's use is extra grass that will need tended to either by a weed whacker or pesticides, and a tendency of becoming dislodged or buckled by repeated, sharp mower turns upon them. These problems do not exist with the Football Mat, as the mower is able to naturally take a path along the mat that allows for adequate mowing coverage and a larger surface area that covers the grass. This solution lessens time spent mowing around runway lights, which in turn save the airport money, as well as improves overall airport safety.

Byers' company, Airfield Mat Systems, has a detailed savings calculator on their website that airports can use to better understand their "Total Savings" and "Averted Risk Exposure" that they

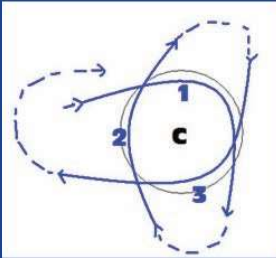
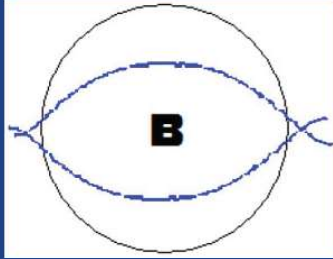
A = Recommended
B&C = Less Desirable

Mowers weave around the perimeter of a light as they proceed along a directional path down the runway or taxiway. The blue line depicts the path of a mower decks edge as it passes by a light



The football or elongated shaped mat complements this mowing path giving the mower perimeter a length of 7 feet and a width of 4 feet around the light.

The same path reduced to match a round mat shows that a mower decks perimeter utilizes a much smaller ratio of the mat. In the case of a 4ft diameter mat the mats effectiveness of the mowing perimeter is reduced from 7 to 4 feet length-wise and 4 to 2 feet in width. In the case of smaller mats such as a 26 inch mat the effectiveness of the mat is reduced to inches not feet.



Mower operators often find themselves taking a more frustrating approach to round mats resulting in a pattern called orbiting. This often results in mower wheels taking sharp turns on the mat and the mower is more likely to buckle or dislodge the mat.

can expect to receive by incorporating Football Mats into their infrastructure.

For example, an airport with twenty lights is expected to save roughly thousands per year, which equates to a breakeven point at the second year for the product in this scenario. Overall, this is tens of thousands in cost savings over a ten-year period for the airport and the "priceless" aspect of preventing lights from being hidden in the grass and resulting possible accident chains.

Perhaps most impressive about the mats, aside from their solutions-based design and proven track record within the industry, is their durability and secure fit to the ground. Each mat, made from recycled materials, has a life expectancy of well beyond twenty years and is anchored by the unique Echo Advisory Anchoring System. This anchoring technique features zero-profile anchors, which allow for mowing equipment overlap and prevents mats from becoming dislodged.

As a testament to the anchoring system's fortitude, mats have withstood prolonged exposure to both a hurricane and prop wash from a V-22 Osprey. Dramatic pictures on the company's



website show nearby damage from the 2005 Hurricane Wilma, which knocked down two hangars that were no less than a few hundred feet away. The Football Mat, though, secured to the ground by the company's carefully designed anchors, doesn't appear to have moved an inch.

A FAMILY-OWNED BUSINESS AND ITS COMPETITION

Even though there is no other product that even comes close to the mechanical and economical advantage the Football Mat system provides, many have seen small round mats promoted by an early competitor. However, the man who supplied many of these lesser and inadequate mats has recently passed away. Byers is blessed to know that when

retirement comes many years down the road, his business already is implementing a succession plan.

Caleb Byers, Steve's fourteen-year-old son, literally grew up around general aviation and the family business. Perhaps the most interesting link between the now teenager and the Football Mats is that his father was absent during his birth. On March 3, 2006, Steve was at a trade show in Hershey Pennsylvania demonstrating the product to potential buyers and distributors. This is something that Steve jokes about now, as he thinks that it must have been destiny for his son to be intertwined in the business' story-even from his first breath.

The young man has since become a fixture alongside his father and has assisted with all the businesses' activities, from product design to



manufacturing to installation. He has taken special interest in visiting airports and customers to promote the products; from

Alaska to Telluride and throughout Florida. Caleb has even designed the



Football Mats that are part of optional scenery in flight simulators-including one for the X10 airport, based upon a 2017 project using solar lights.

Steve goes on to note that although his company is small, "there has never been a project, customer commitment, or other custom considerations that we have not been able to fulfill." He, and his son, take great pride in being 100% available to service every customer and distributor need so the well-designed product saves as much money and keeps as many people as safe as possible.

The company's customers are also at a unique advantage when it comes to funding opportunities related to women owned businesses, as Airfield Mat Systems is fully owned by Cherie Byers (Steve's wife).



PLANNING AND FUNDING:

The mats can fall into several funding categories, sometimes the general maintenance budgets but most often through Airport Improvement Program (AIP) funding. Whether it be runway, taxiway, or just lighting improvements, much of the planning process revolves around the engineering design of these improvements. Byers notes that airport designers and engineers “can make these mats an integral part of the airport improvements and funded program.” He goes on to say that “the benefits and savings far out weight the costs. Airports often find the financial justification through grants or other funding avenues when the design and supply chain are educated about their product’s design and benefits. Steve notes “Airfield Mat Systems is there to assist them in overcoming hurdles to purchase the product.”

When it comes to integrating the mats into a capital improvement program, “It is important to get the designers and engineers on board early,” and Byers adds that “the lighting companies don’t always like the idea of not getting repeat sales from broken lights.” Airfield Mat Systems works with designers and their goals in order to understand what they need in the airfield mat arena. This ensures that the airport adequately reduces their risk exposure, as well as saves costs and man hours spent replacing broken airfield lights.

Additionally, the company can review the airport’s maintenance budgets and illustrate how adding the Football Mats via a year to year rollout can accomplish the cost savings. Byers states that the process of getting his Football Mats installed at airports across the country is “worth it all, for the personal safety benefits the lighting-related concerns for pilots.”

For instructional videos, product pricing quotes, a savings calculator, and contact information, please visit www.airfieldmatsystems.com ■



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