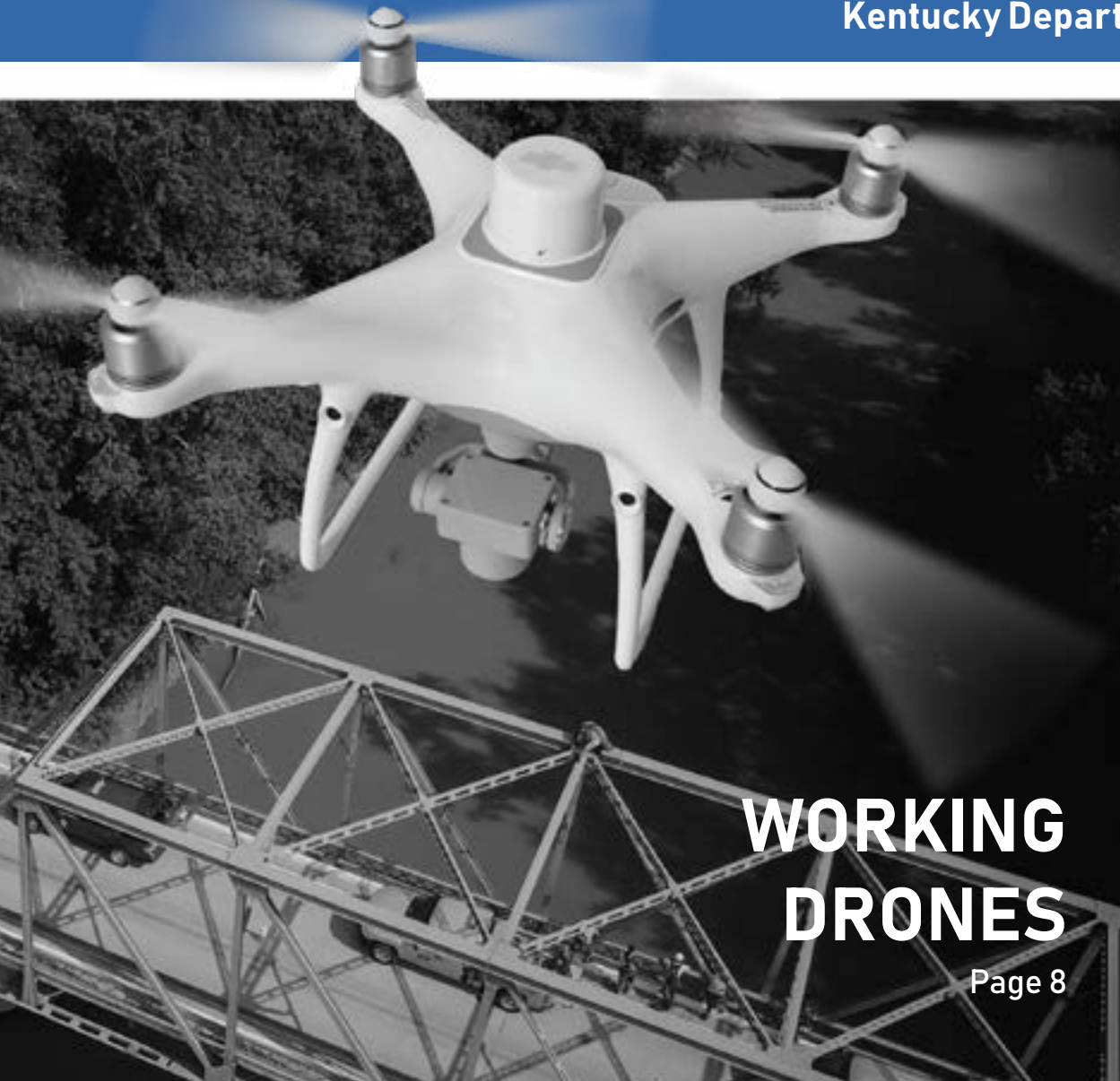


THE RUNWAY



Kentucky Department of Aviation



WORKING DRONES

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KYTC takes off with drones

Small Unmanned Aircraft Systems (sUAS), commonly referred to as “drones,” are changing the way transportation works. KYTC is launching a more aggressive effort to use this technology to increase efficiency, reduce costs, and provide better results while creating a safer environment.

Recently, KYTC drones assisted with the inspection of the Brent Spence Bridge after a crash occurred on Nov. 11 resulting in an intense blaze that damaged the bridge. See [page 8](#). Drones assist in many other transportation activities on [page 8](#). And don't forget Drone Safety Awareness week on [page 9](#).



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LETTER FROM THE COMMISSIONER

Hello to all of our friends in aviation!

As always, I hope this newsletter finds you healthy and doing well. It's time for another aviation update. I will start by saying thank you to everyone for your continued efforts to maintain and improve our airports. Airports are essential infrastructure, and all aspects of flight operations are vital to sustaining our economy and supporting our transportation needs of today and in the future.

You have all done well in keeping the flying community safe by following healthy-at-work requirements. Even with the additional responsibilities of cleaning and social distancing, our general aviation (GA) airports are flourishing during this challenging time. Airports are reporting fuel sales that exceed last year's numbers; certified flight instructors are seeing unprecedented numbers of people who want to learn to fly, and waiting lists for T-hangars continue to grow.

This is great news! We all need to do our part to make our airports the best they can be to support this growth and serve our communities. One of KDA's most important roles is helping our GA airports with funding for vital maintenance, safety & security, and facility enhancement projects.

In our last newsletter, we advised that we are taking a conservative approach to our statewide project list for this year as we measure the effects of COVID response on our budget. We are now four months into FY21, and with actual revenue data in hand. Our planned projects are at approximately 65 percent of our pre-COVID projected budget, which equates to just over \$11.5 million. If revenue continues at its current pace, that number could increase to a little over 80 percent.

We use our latest pavement condition study, state inspection results, and input from airport boards to prioritize projects. We also work closely with the FAA to deconflict projects and advocate for funding on behalf of airports

and our statewide system plan. While we have a robust list of needs, I want to remind everyone that airport boards must keep us informed about airport issues as needs change. This communication is even more important in our current social environment, especially since we could not come together for this year's annual conference.

Our pavement and safety projects will be funded first. We will work our way down the list and adjust for bid prices and revenue over the next few months. Your enthusiasm for your airport and patience in anticipation of state-funded projects are greatly appreciated. This is a team effort between our airport boards, elected officials, the FAA, outstanding consulting firms, the Kentucky Aviation Association, and us in KDA. We've got the best aviation team in America!

Aviation is still Rocking in Kentucky!

Best wishes to you and yours,

Todd X. Bloch
Commissioner
Kentucky Dept.
of Aviation





SPECIAL THANKS TO LOCAL AIRPORT BOARDS

Do you know how the local airports are owned and operated? Here is a brief overview of how your airport works. Under Kentucky law, public-use airports are owned by either county, city, or a combination of the two entities. An airport board operates an airport once it is constructed and opens. County Judge-Executive, Mayor or both working together appoint the board members. The board, in turn, is responsible for airport management, ground maintenance, the safety of runways, taxiways, and approaches, and oversees the entire operation's finances.

Board members may come from various backgrounds and bring valuable experience, skills, or passion for building the community's economic development. One thing all board members have in common is that they are volunteers. They are not paid a penny for all of the time and services they provide to the community. Without them, the airports could not function and would eventually cease to exist.

Airport boards are the backbone of every GA airport. Sadly, many GA airports across the country have closed due to a weak or nonexistent airport board. There are many hurdles in maintaining a local GA airport. The biggest hurdle is running the

operation while balancing the budget with almost a zero margin of profit. The passion for aviation and the airport board's creativity keeps the airports alive day in and day out.

Airports provide a vital environment for young aspiring aviators, technicians, administrators, and supporting operations. They also serve as an economic gateway --a doorway for the surrounding communities and counties. Airports serve as the doorway for business investment in cities and counties across Kentucky --all made possible by the selfless dedication of airport boards to keeping local airports alive and thriving.

The Kentucky Department of Aviation's entire staff would like to take this opportunity to sincerely express our appreciation and gratitude to all airport board members who unselfishly volunteer your time and talents to serve on our airport boards. We can't overstate the significance of your leadership, teamwork, decisions, and actions. Kentucky is the only state transportation industry entirely dependent on donations of their community members' time and effort to make everything work. You are the reason for Kentucky's aviation success stories. Thank you for everything that you do!

ENGINEERING & CONSTRUCTION



Petromat application

The Engineering Branch of KDA has been busy this summer in the oversight of 55 state-funded airport construction projects. Many of these projects were scheduled to be completed by the publication of this newsletter. Quality is our goal with every job. Quality design and construction that provides for a long-lasting and low maintenance product is what we are striving for at KDA. Over the past year, we have experimented with some new ideas to design longevity into our pavement projects.

One of the innovative ideas we recently tried was incorporating Kevlar fibers in the asphalt interlayer of our pavement project at Taylor County Airport in Campbellsville. While the initial costs are higher, the intention is that the integrated fibers will provide more strength through the mix. Over time, we expect that we will see less cracking and less moisture ingress, minimizing the effects of freezing and heaving during seasonal changes. This process will ultimately save the Commonwealth money on future rehabilitation costs.

Another product that being tested is Calvert City Airport (Kentucky Dam Village). We are evaluating is incorporating geosynthetic fabric underlayment for the runway pavement. This product, from

Propex, is Petromat, an engineered paving fabric laid down prior to the asphalt overlay and to act as a moisture barrier and stress absorbing interlayer beneath the relatively flexible asphalt pavement. It adds cost, but Petromat layer is expected to significantly extend the pavement's life before repairs and any future runway reconstruction are needed.

More about the study on page 5.

Also being evaluated is use of an injectable polyurethane foam beneath the pavement to combat runway and taxiway dips. See the images on page 5.

This process was under the runway pavement at Ohio County and Hazard airports. A high-density polyurethane foam polymer is injected through small holes drilled directly through the pavement to depths predetermined by site analysis.

The injected polymer then flows into voids and weak zones within the soil. The expanding polymer fills gaps through a controlled chemical reaction. It solidifies into a stable, environmentally inert, non-toxic, water-resistant material that provides years of substrate stabilization.



KDA Engineering Branch Manager.

Jake Dahl is here to help you get your project from concept to construction. You can reach him at 502-564-0248 or email him at jake.dahl@ky.gov.

This injection method of pavement leveling is significantly cheaper than a full-depth reconstruction of the runway or taxiway. It is an excellent option when dealing with isolated dips in relatively smaller areas of the pavement.



KY DAM STATE PARK AIRPORT CASE STUDY

KDA is testing some new pavement at KY Dam State Airport. Smaller airports with a lower usage can demonstrate cracking without the necessary traffic pressure to mend the asphalt concrete in the summer. KY Dam was showing this type of cracking.

Airport pavements experience harsh exposure to the elements. Their wide and flat layout is vulnerable to moisture that weakens the pavement support layers.

KDA is testing the durability of a new environmentally friendly, trusted, and sustainable paving fabric. Petromat Enviro by Propex is the only paving fabric engineered to be easily milled and recycled when it comes time to repave. One part of the runway was paved using this material and the other part was paved using the traditional method. Installation of more than 22,000 square yards of Enviro laid successfully in less than two days, followed by 1.5 inches of asphalt concrete overlay.

Enviro is a paving fabric interlayer that mitigates fatigue and reflective cracking through stress absorption and strengthens pavement support layers by waterproofing the pavement. It features the strength properties of AASHTO M288, contains no fiberglass, and installs directly onto a milled surface without a leveling course.

“It will be interesting to see the comparison after 10 years between the two runways.” says Brad Schwandt, Deputy Commissioner of KDA.

AIRPORT NEWS



GROUNDBREAKING AT BARKLEY

Big news for Paducah!

Governor Andy Beshear virtually joined airport representatives and local and state officials for a groundbreaking event in Paducah to mark the start of construction of the new terminal complex at Barkley Regional Airport. The new complex will house a commercial terminal and provide space for industrial and commercial development in areas adjacent to the site both on and off the airfield.

The new terminal will improve access, enhance the customer service experience, and encourage future growth in western Kentucky.

This first phase of what is estimated to be a \$42 million project includes dirt work, bringing utilities to the site, relocating an automated weather station on the airport and construction of both a new access road for the terminal and a new aircraft apron.

Read more: <http://bit.ly/BarkleyAirportEvent>



UPDATE ON GALLATIN AIRPORT

Gallatin Airport had a groundbreaking last October. Construction has proceeded, and grading is expected to be completed by the end of the year. The KDA team is working on getting the airport functioning as soon as possible.



AIRPORT INSPECTIONS



State Airport inspections are on a schedule that revolves around the federal fiscal year of October through September. The 2021 inspection cycle started on Oct. 1 with the airports in Zone 1. Zones 2 and 3 are scheduled for November and December.

The inspection team duo of Joe and Terry are back in the field performing safe and thorough inspections across western Kentucky. Joe and Terry saw significant improvements in airport grounds, around hangars and other building areas. An aesthetically pleasing and well-maintained facility puts newer visitors at ease about our attention to detail. It gives them confidence in the things they cannot see, such as fuel quality, pavement integrity, runway debris awareness, etc. As Joe always says, "You don't get a second chance at making a good first impression."

While airports across Kentucky may differ in topography and aircraft types, we see commonalities of improvement opportunities between the airports on our inspections. Shared observations provide learning opportunities for all of our family of airports. The annual KDA Airport Inspection is an opportunity to showcase the hard work that the airports and their communities have invested throughout the year.

View the inspection results at transportation.ky.gov/Aviation/Pages/Inspections-Fall-2020.aspx

Based on the chart below, airports can have an estimate on when our inspectors will show up each year.

2020-2021 INSPECTIONS			
Zone 1	Zone 2	Zone 3	Zone 4
October	November	December	April
Cadiz	Dawson Springs	Elizabethtown	Bardstown
Fulton	Greenville	Falls of Rough	Campbellsville
Gilbertsville	Henderson	Hardinsburg	Columbia
Marion	Hopkinsville	Hartford	Glasgow
Mayfield	Madisonville	Leitchfield	Jamestown
Murray	Russellville	Lewisport	Springfield
Princeton	Sturgis		Tompkinsville

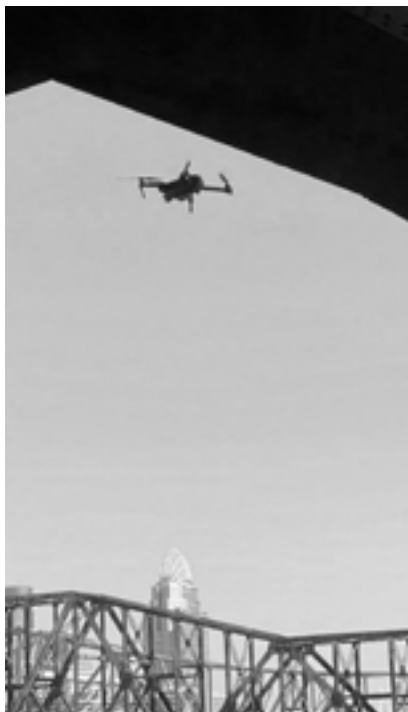
Zone 5	Zone 6	Zone 7	Zone 8
May	June	July	August
Danville	Cynthiana	Ashland	Harlan
Monticello	Falmouth	Hazard	London
Pine Knot	Flemingsburg	Jackson	Middlesboro
Richmond	Frankfort	Morehead	
Somerset	Georgetown	Pikeville	
Williamsburg	LOU - Bowman	Prestonsburg	
	Mt. Sterling	West Liberty	
	Stanton		



DYNAMIC INSPECTOR DUO

Joe Carter and Terry Hancock are responsible for the KDA Airport Inspection Branch. If you have any questions, contact Joe at 502-564-4713 and Terry at 502-564-0371.

SMALL UNMANNED AIRCRAFT SYSTEMS (sUAS)



USING DRONES AT BRENT SPENCE BRIDGE

Brent Spence Bridge was heavily damaged when two commercial motor vehicles crashed and burned in the early hours of Nov. 11. Drones were brought in to aid inspection efforts before inspectors could access the bridge due to the large amounts of debris.

KYTC's primary drone pilots are James Edmunds, Chief Bridge Inspector, and Katherine Caldwell, Asset Manager. KYTC was joined by teams from Palmer Engineering, Michael Baker International and Burgess & Niple.

The drones enabled inspectors to safely capture footage and images of damage. They provide up-close imaging as well as full views of the bridge and its truss alignment.

Their nimble nature provides a quick view of areas that are difficult to access. Drones' fast reconnaissance allows inspectors to focus their efforts on critical areas.

Use of drones will continue during repairs.

KYTC USE OF DRONES

Unmanned Aircraft Systems or "Drones" continually find new applications in state government. Drones are used for inspections, mapping, and incident management. They are proving to be a safe and efficient way of collecting data. KDA established a multi-agency drone user group in 2016 that has grown from 5 to 50 regular attendees.



UNDER THE CANOPY

Ashley Graves in District 3 preparing for a challenging job mapping a bridge in Todd Co. Trees can pose a problem for mapping missions requiring the pilot to maneuver around and under the tree canopy.



Digital recreation of runway area

BUILDING RUNWAYS

KDA is investigating the application of drones for runway inspections and maintenance. Runway issues such as this slide at the Gene Snyder Airport, in Falmouth, can be accurately mapped using drones.



OTHER AGENCIES

The KYTC District 8 drone team of Luke Turner and Justin Wilson has been very active flying projects around the state and assisting KSP with drone applications for Highway Incident Management.



NATIONAL DRONE SAFETY AWARENESS WEEK

NOV. 16-22, 2020

The Federal Aviation Administration (FAA) annual National Drone Safety Awareness Week is Nov. 16–22, 2020. The FAA is committed to ensuring the safety of the National Airspace System as we continue to integrate drones and other new technologies.

Each day will highlight different safety messages.

Monday: LEARN – What do you need to know before you fly?

Tuesday: IMPROVE – How can you improve your flying skills?

Wednesday: PASSION TO PROFESSION – How to go from recreational flyer to commercial drone pilot.

Thursday: START A PROGRAM – Learn about starting a public safety program.

Friday: IN THE CLASSROOM – How can you use drones in STEM education?

Saturday and Sunday: HAVING FUN – Why do you fly?

Want to join an event? Search the list of National Drone Safety Awareness Week events in hosted by the UAS Safety Team.

Visit www.faa.gov/uas/resources/events_calendar/drone_safety_awareness/ for more.

New for students! Have your artistic depiction of a drone-related theme displayed in the Virtual Student Art Gallery. Review the [Submission Themes and Guidelines](#).

New for photographers! Submit your best photo taken by a drone or a photo with a drone to the National Drone Safety Awareness Week Photo Challenge. [Review Submission Guidelines](#) and follow Instagram @faa to see if your photo is nominated for voting.

Be sure to use the #DroneWeek hashtag in your social media posts, and follow @FAADroneZone on [Twitter](#) and [Facebook](#).

Drone@Home!

We may be stuck at home because of COVID-19, but that doesn't mean we can't have fun with our drones! Remember to always fly according to FAA laws and regulations.

Visit the activities page for information and links:

www.faa.gov/uas/resources/events_calendar/drone_safety_awareness/drone_at_home/

- NEW! National Drone Safety Awareness Week Photo Challenge
- Take the FAA Drone@Home Challenge
- Drone Scavenger Hunt
- Skill Drills
- Join a Local Flying Club
- Review Flying Tips
- Watch Drone Racing
- Create a Video Greeting with Your Drone
- Study to Become a Remote Pilot
- Need A Drone-Related Lesson Plan for Your Students? Check out the AIAA's K-12 Everyday Drones Lesson Plans
- Learn How Drones Are Being Used in Agriculture
- Solve the UAS Crossword Puzzle
- Solve the UAS Word Search
- Check out the Smithsonian National Air & Space Museum's story on drones

Drone@Home for Kids:

- NEW! Submit a Poster to our Virtual Gallery
- Wind Speed by Making an Anemometer
- Make a Hoop Glider
- Principle of Thrust by Making a Foamie Flyer
- AIAA's K-12 Everyday Drones Lesson Plans



Robert Cammack and Adam Humphrey of Kentucky's Energy and Environment Cabinet, use a drone to estimate the volume of water in a mining pond.



UAS ENGINEER

Glenn Anderson is the contact for Kentucky's UAS program. If you have questions, contact him at Glenn.Anderson@ky.gov



FUTURE OF DRONES

While KDA doesn't provide any funding for Mars' UAS missions, it is fun and interesting to see NASA's experimental use of a dual rotor drone on the latest Mars mission that launched in July and is scheduled to land on Mars in February 2021. It will be the first powered flight on any planet beyond earth. We're keeping an eye to the sky for this historic moment.

Watch the countdown to Mars.

The FAA's website is the official source of UAS information and registration. UAS regulations are constantly evolving and it's important for pilots to stay up to date with the current regulations:



www.FAA.gov/uas/



FAAdronezone.faa.gov

Register your aircraft using this website if it weighs more than 0.55 lbs. (250 grams) and less than 55 lbs. (25 kg).

CALENDAR & EVENTS

EVENT NEWS

COVID has impacted aviation in several ways. This year saw many of our big fly-ins postponed. A number of our pilot groups were able to attend small monthly fly-ins at places like Bardstown, Mayfield, Mount Sterling and Rough River. Activities are forced indoors as we approach winter. Gatherings are not considered safe as COVID cases continue to increase.

Our Flight Operations Department at the KDA has been busy supporting other agencies and departments with flights for:

- Forestry Department biologists assessing the health of our beautiful forests.
- Fish and Wildlife biologists monitoring Kentucky's eagle, geese, turkey, and bear populations.
- Kentucky State Police and Kentucky National Guard flights in the Federal Counter Drug missions.
- Department of Mine Reclamation with Surface Mine Inspection flights.
- Our state airports' pre-and post-construction inspections.

These flights provide needed revenue for the state and serve to support many important national-level initiatives. These activities resulted in 334 hours of flight time for KDA this summer. This is a 3.7% increase over the same period in 2019.

Please keep us informed when we are finally able to enjoy aviation events at our airports and clubs. Let us know about your airport's events and fly-ins, and we will post them on our website calendar.

Happy Flying!



**Keep current with
upcoming events at
[transportation.ky.gov/Aviation/
Pages/news.aspx](https://transportation.ky.gov/Aviation/Pages/news.aspx)**

**Watch for Drone Safety
Awareness Week**

GOT ANY AVIATION NEWS OR EVENTS?

We want to help you get the word out! Keep us informed on any aviation news and events across the state. Send submissions to Michael Riensche at Michael.Riensche@ky.gov.



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