King Air

A MAGAZINE FOR THE OWNER/PILOT OF KING AIR AIRCRAFT

DECEMBER 2021 • VOLUME 15, NUMBER 12• $6.50

A Special Lift

Special Olympics Airlift recruits King Air operators

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COVER PHOTO

Courtesy of Textron Aviation

Be a Part of Something Great

King Air operators invited to help form largest peacetime airlift for Special Olympics athletes

by MeLinda Schnyder

With the help of Beechcraft King Air operators, Textron Aviation hopes to form the largest peacetime airlift with at least 200 aircraft flying to Orlando Executive Airport on June 4, 2022.

That would mean a Textron Aviation aircraft taking off or landing every two minutes, taking Special Olympics athletes and coaches from their home bases to Orlando, Florida, where they will compete in the 2022 Special Olympics USA Games.

It's a reachable goal with the help of Beechcraft owners. In 1999 and again in 2006, Cessna Aircraft Company topped 200 aircraft when organizing what was then called the Citation Special Olympics Airlift. The June 2022 airlift will be the first since Cessna and Beechcraft became Textron Aviation and organizers are recruiting Beechcraft King Air, Premier and Beechjet models as well as Hawker aircraft alongside Cessna Citation business jets.

"We're excited to welcome those folks in the family to participate for the first time," Steve Sperley, vice president of sales for Textron Aviation, said. "We're going big this year with a goal of more than 200 Doves, and if we get anywhere close to our goal we think we can reclaim the title of the largest peacetime airlift in the world."

Dove is the call sign assigned to each registered aircraft so that the FAA can identify and prioritize all aircraft flying in the airlift.

Textron Aviation aircraft will transport Special Olympics athletes and their coaches to and from the USA games, this year located in Orlando, Florida. Many athletes have never flown on an airplane before which makes attending the games that more special.

The Need

"Traveling to Orlando for the 2022 Special Olympics USA Games may be the first time some of our athletes ever leave their hometown, let alone fly on an airplane," Tony Wyllie, regional president of Special Olympics North America, said in a news release announcing the airlift. "The travel experience provided by Textron Aviation and its customers will be the ultimate bookends for one unforgettable week."

Special Olympics uses year-round sports training and athletic competition to help children and adults with intellectual disabilities discover new strengths and abilities, skills and success while championing for a more inclusive world.

All expenses – from facilities during training to meals and lodging during competition – are paid for by Special Olympics in hopes that no one is left on the sideline due to an inability to pay. Travel is one of the largest expenses for state programs sending athletes to the USA Games, which take place every four years in different locations throughout the country.

The tradition of the airlift started in 1985, when Wichita, Kansas-headquartered Cessna informally transported the Special Olympics Kansas delegation in two Cessna

History of the Special Olympics Airlift

The 2022 Special Olympics Airlift will be the eighth coordinated by Cessna Aircraft Company and now Textron Aviation. Since 1987, customers and industry partners have combined to provide transportation for nearly 10,000 athletes and coaches from across the United States to Special Olympics World Games and USA Games.

Here's a look at the event's history:

1985: Cessna transported the Special Olympics Kansas delegation in two Cessna Citation business jets to the International Winter Games in Salt Lake City, Utah

1987: First official Citation Special Olympics Airlift: 132 aircraft flew athletes to the International Summer Games in South Bend, Indiana

1991: Second Citation Special Olympics Airlift, 180 aircraft flew athletes to the International Summer Games in St. Paul/Minneapolis, Minnesota

1995: Third Citation Special Olympics Airlift, 197 aircraft flew athletes to the International Summer Games in Hartford, Connecticut

1999: Fourth Citation Special Olympics Airlift, 260 aircraft flew athletes to the International Summer Games in Raleigh-Durham, North Carolina

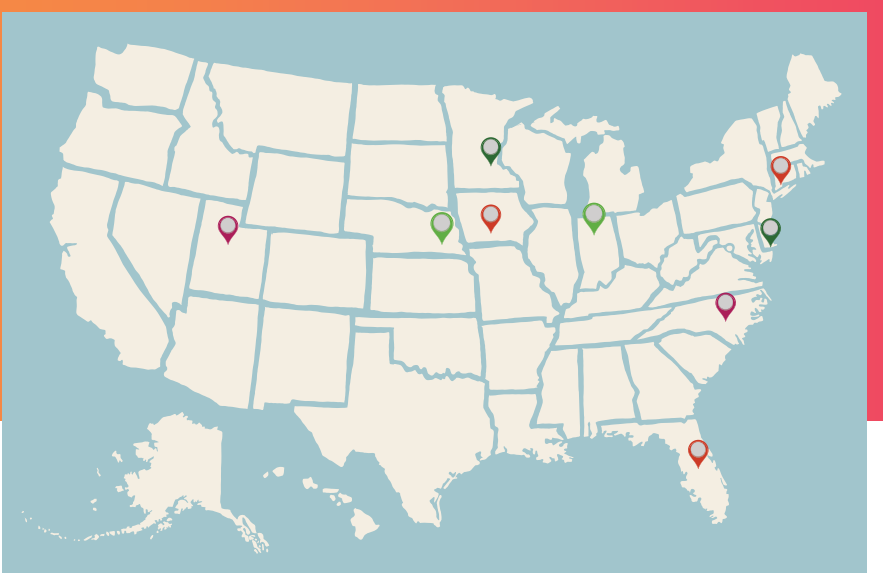
2006: Fifth Citation Special Olympics Airlift, 235 aircraft flew athletes to the U.S. National Games in Des Moines, Iowa

2010: Sixth Citation Special Olympics Airlift, 160 aircraft flew athletes to the U.S. National Games in Lincoln, Nebraska

2014: Seventh Citation Special Olympics Airlift, 97 aircraft flew athletes to the U.S. National Games in Trenton, New Jersey

2022: Eighth Special Olympics Airlift, goal of 200+ aircraft to fly athletes to the USA Games in Orlando, Florida

Source: Textron Aviation



> **"This signature event is a unique opportunity that enables everyone, from our employees to our customers, to ignite our shared passion for lifting others up and supporting our communities by giving the athletes the joy of a once-in-a-lifetime aviation experience."**

Citation business jets to the International Winter Games in Salt Lake City, Utah. Since then, the company has conducted seven airlifts, engaging customers and industry partners to provide transportation for nearly 10,000 athletes and coaches from across the country to the Special Olympics World Games and USA Games.

At the end of November, the Special Olympics Airlift website showed 129 aircraft had registered. Organizers work closely with the FAA so that the 200+ aircraft flying in the airlift to and from Orlando Executive Airport will be prioritized on arrival day, June 4, and again on departure day, June 12. The deadline to register is several months prior to the airlift because organizers need to know how many aircraft they have. They'll then work with Special Olympics state delegations to offer transportation where they have aircraft available, letting the other states know they'll need to book commercial flights.

Not only is the airlift a visual way to show the world the power of general aviation, it gives operators a way to help locally while participating in a much larger movement.

"This signature event is a unique opportunity that enables everyone, from our employees to our customers, to ignite our shared passion for lifting others up and supporting our communities by giving the athletes the joy of a once-in-a-lifetime aviation experience," Ron Draper, president and CEO of Textron Aviation, said in the news release announcing the return of the airlift.

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2022 Special Olympics Airlift at-a-glance

WHO: Owners and pilots of Beechcraft King Air, Premier and Beechjet models; Hawker aircraft; Cessna Citation business jets are being asked to donate the use of their aircraft, pilots and fuel.

WHAT: Help transport a portion of the over 5,000 athletes and coaches around the U.S. invited to the USA Games in Orlando on June 4, 2022, and then return them from Orlando Executive Airport to their home bases on June 12, 2022.

HOW: Register at *txtav.com/airlift* as early as possible and no later than Feb. 28.

All airlift participants will receive a Certificate of Donation to use as your charitable gift documentation when working with your tax adviser.

The 2022 Airlift

King Air operators are still needed throughout the U.S. to donate the use of their aircraft, pilots and fuel. King Air aircraft based in the western U.S. will be asked to pick up passengers at designated airports east of the Rockies.

Organizers prefer that operators commit to flying both days – June 4 and June 12 – but Sperley said they will work on an individual basis to accommodate schedules. Registration is completed online at *txtav.com/airlift,* where you can see others who have made their participation public. You can also view video highlights from past airlifts, a video message from honorary chair Peyton Manning, what other pilots have to say about flying in past airlifts and information about

what to expect if you sign up, including tax deduction benefits.

While many Citation operators are familiar with the legacy of the airlift, not as many King Air operators are aware of the opportunity.

Kevin Carson, president of King Air Academy, had planned to issue a challenge at the King Air Gathering last October, but once it was canceled he lost his chance to plea in person.

"My goal was to help recruit more King Airs than jets," he said. "There are lots of King Airs out there that are already flying in and out of Florida, and there are so many places that the King Air can help with transportation where either the jets can't or don't want to fly."

He was working on coming up with a fun tagline to issue with the challenge. Something which would play off the fact that Manning, the airlift's honorary chair, is an NFL Hall of Famer that included King Airs "beating the jets" this year.

Sperley saw a jump in the number of Citations registered for the airlift after the Citation Jet Pilots held its annual convention in October. It'll be too late to sign up by the time the rescheduled King Air Gathering happens in May, but Carson is optimistic

"My goal is to recruit more King Airs than jets ... there are so many places that the King Air can help with transportation where either the jets can't or don't want to fly."

King Air operators will come through as word gets out. "King Air owners and operators are some of the nicest people I've met and I have no doubt they will step up to the challenge," he concluded.

Among the King Air operators who have already registered are Ross Johnson, who was featured in last month's magazine and flies his 2006 Beechcraft King Air C90GT out of Anderson, South Carolina, and Stockton M. Schultz, an Elkhart, Indiana-based owner-pilot new to the Beechcraft King Air family.

Schultz is still working on his rating but he purchased N53GA, a 1985 Beechcraft King Air B200, from Marv Selge who has offered to come back and fly the King Air in the airlift.

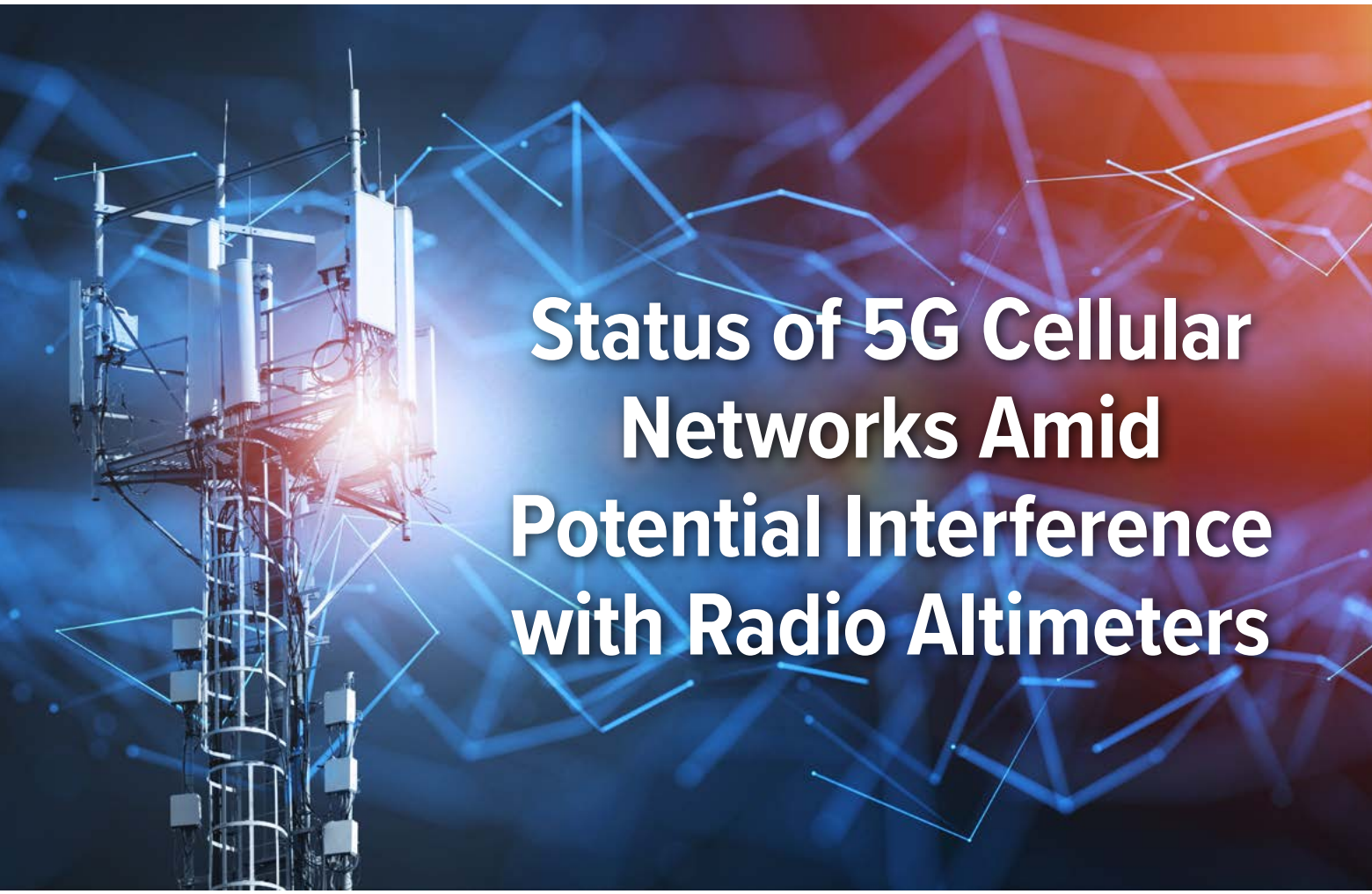
Selge owned N53GA for 19 years before selling the airplane to his friend in early 2021. He used the aircraft primarily to operate his construction business and from the beginning flew philanthropic flights, mostly cancer patients who found him through word-of-mouth and also missions with the Veterans Airlift Command, which provides free air transportation to post 9/11 combat wounded and their families for medical and other compassionate purposes.

He said he's looking forward to getting back in the cockpit of his beloved King Air, which he sold because he no longer needed the airplane's capabilities, and wouldn't want to miss the chance to fly in such an important airlift.

"I can't tell you how many cancer patients I've flown in N53GA and every one of them that I've flown has been a major blessing to me," he said. "I've met the most wonderful people. You never forget the people you fly. Anybody who misses out in flying in the Special Olympics Airlift is really missing an opportunity to bless other people and to be blessed." KA

Marv Selge, former owner of King Air B200 N53GA which he sold in early 2021, said he wouldn't want to miss the chance to be part of such an important event and has offered to fly the King Air for the airlift. He encourages other King Air operators not to miss out on the philanthropic opportunity.

The Special Olympics airlift was started using Cessna Citations to transport athletes and their coaches. The 2022 airlift will be the first since Cessna and Beechcraft became Textron Aviation and organizers are recruiting Beechcraft King Air, Premier and Beechjet models as well as Hawker aircraft alongside Cessna Citation business jets.



Status of 5G Cellular Networks Amid Potential Interference with Radio Altimeters

In the ongoing turmoil of how the launch of wireless broadband networks would interfere with radar altimeters in commercial and business aircraft, the Federal Aviation Administration (FAA) released Special Airworthiness Information Bulletin (SAIB) AIR-21-18 Nov. 2.

The SAIB cautions manufacturers and operators of the planned deployment of wireless broadband networks on Dec. 5 and the potential hazardous effects to radio altimeter accuracy. The FAA recommended that "aircraft and radar altimeter manufacturers and operators, voluntarily provide to federal authorities specific information related to altimeter design and functionality, specifics on deployment and usage of radio altimeters in aircraft, and that they test and assess their equipment in conjunction with federal authorities."

The same day, the "Aviation Community" – a group of 21 – including aircraft organizations, such as the National Business Aviation Association (NBAA), Aircraft Owners and Pilots Association (AOPA), General Aviation Manufacturers Association (GAMA), Aircraft Electronics Association (AEA), as well as avionics and aircraft manufacturers sent a letter to the Secretary of the Federal Communications Commission (FCC) Marlene H. Dortch requesting a group with representatives from the FCC, FAA, 5G interests and the aviation industry be formed to address concerns and address unanswered questions regarding aviation safety.

Shortly thereafter, AT&T and Verizon confirmed that they had agreed to put a hold on rolling out 5G service and will work with the FAA to address concerns about potential interference with aircraft cockpit safety devices and ground towers transmitting 5G signals. KA

Engine Vibration Analysis

by Dean Benedict

Writing about prop balancing in the October 2021 issue of *King Air* magazine got me thinking about engine vibration analysis. Some King Air owners and pilots have never heard of it, as it's not required by the factory and not part of any Phase checklist or special inspection. Unless you are a turbine engine fanatic or you build them for a living, chances are you haven't crossed paths with an engine vibration analysis. The one exception would be those with an engine on the MORE (Maintenance on Reliable Engines) program, as engine vibration analysis is a recurring requirement for engines enrolled in it.

Engine Vibrations

Anything that spins generates a vibration whether it's a propeller or a gearbox, if it spins smoothly the normal vibration is minimal. If it is out of balance, the vibration is more pronounced. Over time, the friction between moving parts creates excess play and the spinning becomes wobbly. This is where good vibrations go bad.

When you bring an engine to full power there are many associated components operating simultaneously. The starter generator, the fuel control, and oil and scavenge pumps are a few examples. These accessory components operate at a specific frequency (RPM) and each one generates a vibration. As a component begins to wear out, it is somewhat out of balance while spinning – the RPM is the same but the vibration increases. A worn-out component, still spinning at the same RPM is vibrating intensely and on the way to failure.

An engine vibration analysis (engine vibe survey) detects the vibrations generated by each component. Periodic surveys, done within the same operational parameters, can pinpoint an issue as it develops, and allows the problem to be monitored and fixed before it becomes serious.

Going Past TBO

Federal Aviation Administration (FAA) Part 135-regulated operators can't run engines past TBO unless they are on an FAA-approved program. For King Airs (other than the B100), it is the MORE program which stipulates that an engine vibration analysis must be done on each engine at 400-hour intervals.

Many King Air owners operate under Part 91 regulations and therefore aren't required to overhaul their engines at 3,600 hours, nor are they required to put their engines on an FAA-approved alternative maintenance program. Inspections are required (i.e., the Hot Section Inspection) but overhauls become optional.

The decision to run your engines past TBO is one that Part 91 operators should not take lightly. Going on the MORE program is one alternative. It lays out a very thorough and precise schedule of maintenance tasks for each engine, some as frequent as 50-hour intervals.

Most owners I deal with are Part 91 operators and many are running their engines past overhaul. They just keep plowing along because they trust the PT6As on their King Air. They know them to be an extremely reliable

engine and that in other countries the recommendation for overhaul is way beyond the 3,600 hours required in the U.S. That being said, I think performing engine vibe surveys from time to time is a really good idea.

Vibration Detection Equipment

Vibration detection is an integral part of aviation maintenance. I learned about prop balancing very early on in my career and always had access to (or owned my own) Chadwick balancer. Today, the equipment used for vibration analysis of aircraft engines and components is the Chadwick-Helmuth 192A Vibration Analyzer or the MicroVib II Aircraft Analyzer. Both are approved for use with the MORE program and identify the various vibrations in an engine running at takeoff power. Both report the frequency (RPM) and the amplitude of the vibrations detected, expressed in "ips" (inches per second). Results are plotted on a graph and typically RPM is plotted along the horizontal axis at the bottom of the graph and ips is the vertical axis.

When I maintained King Airs with engines on the MORE program, there was one guy in town with the Chadwick-Helmuth 192A. I hired him to complete all my engine vibe surveys. The 192A analyzer is an analog device that uses cards pre-printed with a grid of RPM versus ips. It has a pen device that records the analyzer box data onto the card, similar to a seismograph.

It may sound archaic in this digital age but the 192A has surprising sensitivity and scope.The cards record RPMs from 150 to 900,000 and ips from 0 to 10.0. The card most applicable to PT6A engines has the red border with an RPM range of 150-14,000 and ips from 0 to 3.0.

Reading the Graph

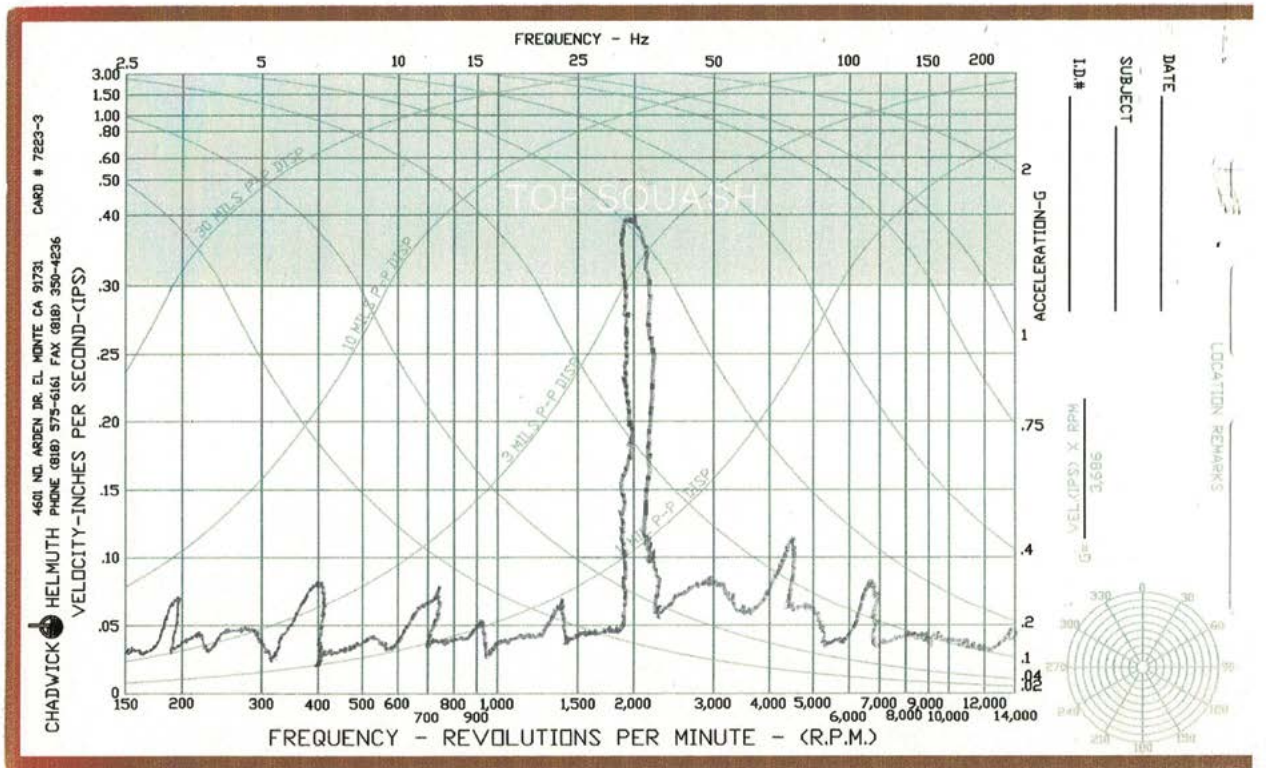
The vertical axis on the graph (ips) shows the degree of vibration. The taller the spike, the more vibration is going on. Remember, the various components have a signature RPM, so look to the horizontal axis (RPM) to identify which component is vibrating.

I prepared a mock-up of a readout from a 192A (shown below). This is strictly for illustration purposes; it **is not** an actual vibe survey graph, although it looks remarkably similar to ones I've seen over the years.

Note the big spike going up to 0.4 ips. It is aligned with 2,000 RPM, which is the frequency for the prop. Many King Air propellers run at 2,000 RPM. More specifically, model 350s run around 1,700 RPM; the other models range between 1,900-2,200 RPM. In the example I show how a vibrating component manifests on the engine vibration analysis. If this were a survey of a King Air and they found a prop at 0.4, I'd have them balance it and bring it down as low as possible.

It's important to note that the vibrations generated by the components *other than the propellers* cannot be felt in the cabin. The engine isolators remove them from the airframe. So, an engine vibe survey is the only way to find out if something is rattling away under the cowling.

A mock-up of what a vibe survey graph readout might look like, with ips (inches per second) shown on the vertical axis and RPM on the horizontal axis



Vibrations reaching the top echelons of the graph need attention. The MicroVib II graphs are similar in this way. The MORE STC classifies vibrations under 0.5 ips as "normal." My only exception to this would be the props, because when they are even slightly out of balance it can be felt in the cabin. "High normal" is 0.5 to 0.75 ips, above that you have "monitor closely" followed by "unacceptable" or "failure imminent."

Common sense would dictate that the greater the vibration, the more rapidly the component will continue to shake itself apart. "Monitor closely" raises enough red flags that I would investigate that component.

Starter Generators and Fuel Controls

Starter generators on most King Airs run around 10,000 RPM at full power. It's one of the first things I look at on an engine vibe survey. I'm especially concerned with the -001s used in King Air 300s and 350s, as this particular model (p/n 23085-001) is notorious for failing to make it to overhaul at 1,000 hours.

When they fail, they do it in a big way. Typically a bearing goes out, then the armature flails around inside the case and destroys everything, leaving no core value – you must buy a new one outright. Many thousands of dollars can be saved by monitoring starter generator vibrations and catching the problem early.

This could happen with any starter generator on any King Air; however, if you have -001s, I can't stress this strongly enough – *pay close attention to your starter generators*. At a routine inspection, a shop might see that the brushes are worn. They might think, "The -001 isn't due for overhaul for 300 hours, I might just change the brushes and save this guy some money." But unknown to them, one or both bearings are going bad and failure is imminent. An engine vibe survey would show this; I'd recommend one by the 700-hour mark.

Fuel control units on most King Airs run around 5,800 RPM. Excessive vibration on a fuel control is a sign the front bearing is going out. When that bearing fails, the fuel control breaks down and the engine accelerates out of control. If you are unable to shut that engine down immediately, you'll have an over-torque situation and the power section will have to come out.

Component RPM Complexities

The concept of engine vibration analysis is quite simple, but there is a devil (or two) in the details. Interpreting the graphed results accurately can be a bit involved. There are two complexities that I must point out. First, the specified RPMs for the various components vary between engine models. When I say that fuel control units operate around 5,800 RPM, it is

a ballpark figure. The precise RPM for any component depends on which PT6A you have on your King Air.

The engine maintenance manual specifies the RPM for that engine at 100% and gives mathematical formulas to find the exact RPMs for the accessory components. Due to engine limits, your vibe survey will be performed as a lower speed, say 97%. Now the RPMs for all the components must be computed to that speed and will decrease accordingly. The lowest acceptable speed for an engine vibe survey is 93%.

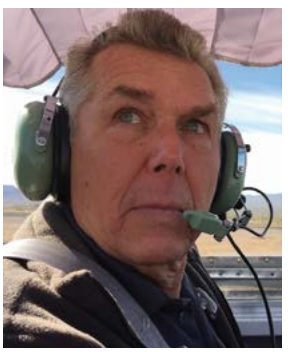
Example: On a PT6A-128, the compressor speed at 100% is 37,500 RPM and the starter generator operates at 10,991 RPM. However, at 98%, the compressor speed is 36,750 RPM and the starter generator is now running at 10,771 RPM. Your maintenance technician or the analyzer operator will do the necessary math to interpret the graphed results, based on information in the manual furnished by Pratt & Whitney.

For engines enrolled on the MORE program, a detailed manual specific to that engine is provided. It contains, among other things, tables with all the component RPMs corresponding to a variety of compressor speeds; the math is already done. The RPM figures quoted above for a -128 engine and its starter generator were furnished by the MORE STC and used with permission.

The second complication with component RPM speeds is where multiple frequencies are generated by one component. The propeller is a prime example – your prop may spin at 2,200 RPM but the blades generate additional vibrations. A 3-blade prop will read differently than a 4-blade prop. These additional vibrations will show up on the engine vibration analysis and must be accounted for in the interpretation of the graphed results.

An Ounce of Prevention ...

As moving parts wear down, they go out of balance and vibrate more. An engine vibration analysis identifies these vibrations. Periodic vibration surveys allow you to monitor a developing situation and nip it in the bud before it "blooms" into a costly repair. I can see no downside to doing them. They are an excellent diagnostic tool for all King Air operators, not just those going past TBO. As they say, an ounce of prevention is worth a pound of cure. KA



Note: Barry Bangert, who developed the MORE program and founded the MORE Company, passed away recently. In fact, while preparing this article I was in touch with the company and learned he was not doing well; he passed a few days later. In spite of this loss to the King Air and PT6 communities, I'm relieved to report that the MORE Company remains in good hands and continues moving forward with Holly Lepire at the helm where she has been for 15 years.

Acknowledgements: Many thanks to Holly Lepire and the MORE Company for their gracious assistance and support during a difficult time. Cards for the Chadwick-Helmuth 192A courtesy of Rick Lund of The Proper Prop, (702) 812-0309.

Dean Benedict is a certified A&P, AI with over 45 years of maintaining King Airs. He's the founder and former owner of Honest Air Inc., a maintenance shop that specialized in Beech aircraft with an emphasis on King Airs. Currently, with BeechMedic LLC, Dean consults with King Air owners, operators and maintenance shops on all things pertaining to King Air maintenance. This includes troubleshooting, pre-buys and maintenance management. He can be reached at *dr.dean@beechmedic.com* or (702) 524-4378.

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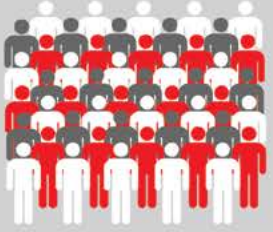

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Bump and Run

by Tom Clements

Author's Note: This is a repeat of my article written for the December 2014 issue of this magazine. It also comprises the chapter starting on Page 307 of The King Air Book – Volume II. *Obviously, I think it is important enough to review once more.*

Rarely do we pilots need to apply rapid and full power from idle. While initiating a takeoff roll or leveling off after an idle power descent, we have plenty of time to advance the power levers slowly. Most go-arounds or balked landings are begun before the power levers were moved all the way back to idle.

The two situations in which we *do* need to have a proper, rapid idle-to-maximum-power technique are idle power stall practice for training – or for real, if we ever let ourselves get into that unfortunate situation – and a balked landing from deep into the flare, nearly at touchdown.

I wager there are many King Air pilots who have never encountered either of these two situations before and who may well complete their entire King Air flying careers without ever encountering them. That's great! Furthermore, if they ever do encounter these rare situations, they will probably muddle through just fine

by advancing the power levers at whatever rate they choose to use. Based upon my observation of hundreds of pilots during King Air flight training, however, there is a simple and effective technique that I want to pass along.

It is rare that two different PT6s accelerate from idle at the same rate. Realize that the power levers do not affect fuel flow and power directly. Instead, they merely set a speedier spring tension that causes the fuel control unit (FCU) to reach and maintain a particular N1 or Ng speed, compressor speed. It's the FCU that adjusts fuel flow and power in response to the pilot's request for new N1 speed.

Since the FCU has "a mind of its own" about how to accelerate when suddenly told to go to a much higher N1 speed following a "throttle slam," it is not uncommon to find that one engine will reach takeoff power before the other engine has even reached 30% power. Handling such a large power difference at low airspeed when the rudder is not very effective can be a challenge. Furthermore, it is impossible to know exactly what torque and ITT will finally be reached when the engine stabilizes and there is a strong probability that limits may be exceeded.

That's why a couple of undesirable outcomes await the pilot who moves the power levers too far, too quickly, when faced with a "need-it-now!" high power requirement.

A better technique is to do what I call a "Bump and Run" with the power levers. When the stall horn starts to sound unexpectedly or when the deer suddenly appears in the landing lights in the flare, immediately bump the power levers forward as fast as possible *but only about one-third of the way.* "One one-thousand, two one-thousand, three one-thousand." Pause for three seconds, then run the power levers forward rapidly as you watch the torque and temperature gauges, stopping when you are at or near takeoff power.

Why does this work so well?

Each position of the power lever corresponds to a unique N1. Since low idle is usually near 60% N1 and "full throttle" is slightly over 100% N1, our one-third forward "bump" means that we have requested about 73%, slightly more than high idle. To clarify, since the difference between 60 and 100 is 40, one-third of that is a little over 13. 60 + 13 = 73. No matter how mis-matched

in acceleration rates your two engines happen to be, the power being produced will remain low enough that no significant asymmetrical thrust can be achieved. (Realize that 73% N1 is much, much less than 73% power.) But by the time three seconds have elapsed, both engines will be stable at this elevated N1 speed, meaning that the response rate of the engine to power lever movement will now be virtually instantaneous, with no spool-up lag. Torque and ITT will increase right in sync with power lever motion and the desired values can be reached without overshoots.

Back in the 1970s I was using the GI Bill to pay for my Learjet type rating through FlightSafety International in Wichita, Kansas. The airplane I actually flew was a model 25C equipped with the CJ610 straight jet engines. It was there that I was first taught about "throttle slams." Recovering from an imminent stall at idle power, we were taught to slam the thrust levers forward to the stops, then pull them back one-half inch. Like magic, this worked exceedingly well, yielding a high but not excessive power in a short time period. Although it was common that one engine accelerated much faster than the other, the resultant asymmetry never seemed excessive due to the fuselage-mounted engine location.

Trying this same technique on King Airs – going forward to the stops and back a half-inch – always kept torque and ITT within limits but when the two engines had very different acceleration rates the yaw tendency was rather fierce, since the engines were mounted outboard on the wings. That's why the one-third forward bump, the slight delay, and then the rapid run to the desired power works much more successfully.

As stated at the start, you may well never need to use this technique. But practice it a time or two when you next fly your King Air – not necessarily in a stall recovery or balked landing situation, but just "playing" with the power levers, starting with them at idle – and see what results. You can even do it with the brakes locked when beginning a takeoff roll on a longer runway. I suggest you release the brakes and start rolling after the post-bump, three-second delay.

I think you will want to add this *Bump and Run* arrow to your quiver of operating techniques. KA

King Air expert Tom Clements has been flying and instructing in King Airs for over 46 years and is the author of "The King Air Book" and "The King Air Book II." He is a Gold Seal CFI and has over 23,000 total hours with more than 15,000 in King Airs. For information on ordering his books, contact Tom direct at *twcaz@msn.com*. Tom is actively mentoring the instructors at King Air Academy in Phoenix.

If you have a question you'd like Tom to answer, please send it to Editor Kim Blonigen at *editor@blonigen.net.*

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“Popper” Beech

Beech’s idea for a cabin monoplane led to production of the Type 6000. The prototype, registered X4765, was photographed shortly after completion in April 1928. (Textron Aviation)

Born near Pulaski, Tennessee, Walter H. Beech made his mark on aviation history in Wichita, Kansas. (Mary Lynn Oliver)

Takes Control
(Part Two)

During 1928-1929, the Travel Air Company's Walter H. Beech had earned national acclaim for corporate leadership and technical innovation that further increased the reputation of Wichita, Kansas, as the "Air Capital of the World."

by Edward H. Phillips

By 1928 it had become obvious to Walter Beech that the company he led was in need of a new product – one that was aimed directly at the businessman who embraced aviation as a viable means of transportation. The Type 5000 had proven itself with the regional carrier National Air Transport on its routes in the Midwestern United States, and airlines were flying large and powerful Ford- and Fokker-built monoplanes with enclosed cabins.

The aviation-minded businessman represented a new market for America's airframe manufacturers. To find out if developing a new Travel Air tailored specifically to meet the needs of busy executives would be worthwhile, Beech and sales manager O.G. Harned conducted a detailed survey of hundreds of prospects. The results clearly indicated a preference for enclosed cabins, with the airplane serving as a "flying office" where work could be accomplished in flight. Walter already had chief engineer Horace Weihmiller and his staff working on a preliminary design powered by the reliable Wright J-5 static, air-cooled radial engine. Five months later, a

The Type 6000 was popular with businessmen who wanted to conduct business in the air between destinations. (Textron Aviation)

prototype was completed and rolled out into the Kansas sunshine.

Designated Type 6000, the ship featured a cabin with six seats for the pilot and five passengers that could be accessed by two doors on the right side of the fuselage – a forward door for cockpit entry/egress and an aft door for passengers. The interior was heated and automobile-style crank mechanisms allowed occupants to raise or lower each plate glass window. The seats could be removed quickly to transport cargo, and the cabin was designed to accommodate an optional desk, typewriter and other office equipment. The new ship was flown by chief pilot Clarence Clark April 15, 1928, and attained a maximum speed of 128 mph at full throttle.

Billed by Beech as the "Limousine of the Air," he flew the ship on the Kansas Air Tour in June when an estimated 100,000 people saw the monoplane, and a large number of prospects participated in demonstration flights with either Beech or Harned officiating in the cockpit. Later that month, Beech flew the new Travel Air out east, where his sales skills led to firm orders and deposits for 14 airplanes.

These orders, however, were obtained with the understanding that the company would build a larger version of the prototype, which some prospects complained was too small for conducting business in flight. The prototype was never certificated, but production airplanes were larger externally and internally per Beech's directives to engineering. His decision to build and sell a "businessman's Travel Air" soon began to reap financial benefits for the company. Beech was careful to study his staff's marketing analyses that indicated a production ratio of open cockpit biplanes to enclosed cabin monoplanes would be 60% biplanes and 40% monoplanes. That ratio held steady through 1928, but by 1929 orders for the modern Type 6000 series were beginning to outpace deposits for open-cockpit ships. Thanks to Walter Beech's foresight and market savvy, sales at Travel Air hit a high of more than $93,000 during one week in October 1928, and growing demand for the Type 6000-series dominated the order books.

Late in 1928, the company's success led to an invitation by Hayden, Stone, and Company that had business connections with the powerful Wright Aeronautical Group to meet with Walter Beech in New York City. He was accompanied on the trip by Earl Hutton – a close friend and an early investor in Wichita's emerging aviation industry. According to Walter's comments to the Wichita press following his return, Wright Aeronautical wanted to purchase 50% of the Travel Air Company, but no decision had been made whether to accept or decline the offer.

However, two months later, a deal was finalized that would allow Hayden, Stone and Company to acquire a 50% stake in the Kansas company. Beech once again traveled east by train to complete the transaction. He not only played a key role in the negotiations, but his remaining as president was deemed essential by Hayden, Stone officials. Basically, the agreement dissolved the original Travel Air Manufacturing Company, Inc., and reorganized it under Delaware law as the "Travel Air Company." Beech and the board of directors believed they had made a good business decision that would prove beneficial for the reborn company and its growing number of stockholders. The eastern financiers were pleased to have succeeded where other suitors had failed to buy into one of the largest commercial airplane manufacturers in the United States. Richard F. Hoyt, a senior official with Wright Aeronautical, was quick to point out that they wanted to see Travel Air grow, and plans were underway to expand the East Central factory complex that would significantly increase production.

In the wake of the reorganization, as of January 1929, the company's board of directors had a few new faces and names that hailed chiefly from the East Coast. Hoyt became Chairman of the Board and Captain F.T. Courtney, Harold Fowler, S.R. Reed and Chandler Hovey were elected members. Wichita men retained on the board included Thad Carver, Jack Turner, C.G. Yankey, and G.A. Stearns.

The new board quickly authorized construction of a third building to be designated "Factory "C" and voted to buy the entire East Central flying field as soon as the city's lease expired. Although the city had paid $17,000 for the property in 1928, plans called for developing Wichita's municipal airport a few miles to the south in what was known locally as the "California Section."

In March 1929, the Travel Air Company set an all-time high for sales in a single month – $300,000. By June, the order books for new airplanes were bursting at the seams, and the busy factory complex 5 miles east of downtown Wichita, Kansas, was struggling to deliver 25 aircraft per week.

By May of that year, however, the Travel Air Company had become the target of another major aviation consortium that would be formed by a proposed merger of the Wright Aeronautical Corporation with the famous Curtiss Aeroplane and Motor Company (established in 1916 by pioneer aviator Glenn H. Curtiss) to create the Curtiss-Wright Corporation. To prepare for what appeared to be a future with unlimited potential, the company's board of directors and its president, Walter H. Beech, chose to join forces with the new organization. East Coast-based Curtiss-Wright was poised to make millions of dollars in profits, as were other large aviation corporations at that time, thanks to a booming stock market that helped generate skyrocketing revenues as America's new-found love affair with flying continued unabated.

Curtiss-Wright's interest in acquiring the Wichita-based company was obvious: Travel Air was among the leading manufacturers of lightweight private, commercial and business airplanes in the United States. Throughout 1928 and well into 1929, sales had soared upward and production had nearly doubled in an attempt to meet escalating demand for aerial transportation. In addition, the company's domestic dealer/distributor network was expanding, and export sales continued to increase. Throughout 1928-1929 Travel Air's success had not gone unnoticed on Wall Street. Senior management at Curtiss-Wright targeted Travel Air because, under the leadership of Walter Beech, its dealer and distributor network was expanding both domestically and internationally.

When the merger was completed in August 1929, Beech had been appointed a vice president of Curtiss-Wright Corporation with his office located in New York City.

To keep pace with high demand for Travel Air biplanes and monoplanes, more buildings were added to the to the company's manufacturing campus. In 1934 the vacant buildings formed the nucleus of the Beech Aircraft Company. (Edward H. Phillips Collection)

The acquisition made Walter a wealthy man – a single share of Travel Air stock in 1925 sold for $100, but four years later was worth $4,000. Wall Street financiers estimated that the Wichita airplane builder had been bought for $3.2 million – a phenomenal amount for the young but highly successful company.

Financiers Richard Hoyt and Clement Keys had created another new organization called the "Aviation Credit Corporation" that included Wright Aeronautical, Curtiss Flying Service, Keystone/Loening and Travel Air. Plans called for using the financial company to promote sales of all four subsidiary companies, with as much as $10 million in financing available. The arrangement greatly benefited Travel Air and its sales force because the customer did not have to look for money to buy an airplane. By mid-1929, Travel Air's domestic and international salesforce held orders for new biplanes and monoplanes worth a stunning $2 million, with sales hitting $560,000 in June alone.

Seemingly overnight, Beech and other members of senior management became rich, even by exorbitant standards of the decadent "Roarin' Twenties." Walter's cut was worth at least $1 million, although a majority of that was held in Curtiss-Wright stock. When asked by local reporters about his good fortune, he chose not to boast about it, but he was quick to defend it. One newspaper source quotes Walter as saying, "I'm just a country boy. Go get a photograph of me when I first came to Wichita. I've made good, and I'm not afraid to say so."

Unfortunately, the "Roarin' Twenties" came to an abrupt end in September 1929 and the aviation business was among the first victims of the deadly debacle on Wall Street. Within months airplane orders began to slump, and by December sales appeared to have entered an unrecoverable tailspin. One year later, in November 1930, it had become almost impossible for Wichita's airframe manufacturers to sell a new airplane, even after drastic price reductions of as much as 50%.

As production slowly came to a complete halt at Travel Air, executives at the Curtiss-Wright Corporation decided to consolidate manufacturing at the Wichita factory to its facilities in St. Louis, Missouri. Walter Beech had the sad task of ordering the layoff of all remaining employees (many of whom were his close friends and loyal workers) at the East Central Avenue campus. By the end of 1932, the facility was closed and locked.

In 1934, however, Walter and Olive Ann Beech would acquire the facilities from Curtiss-Wright and, despite enormous risk and a shattered national economy, set up shop to build the "best business airplane money could buy" – the Beechcraft Model B17-series, in their new company Beech Aircraft Corporation.

During his 31-year career in aviation, Beech had distinguished himself as a skillful aviator, a talented salesman, and the leader of one of America's major airframe manufacturers. He had logged more than 10,000 hours in the air and held Transport Pilot Certificate No. 534 as well as a commercial license with single-engine/land privileges. Although a majority of his employees knew him as Mr. Beech, Mrs. Beech often addressed her husband as "Popper."

"Popper" Beech was a legend in his own time. When he died in November 1950 the aviation community lost one of its greatest pioneers and leaders. (Textron Aviation)

After his untimely death in November 1950, Mrs. Beech became president and chairman of the board at Beech Aircraft Corporation. In 1977 Walter H. Beech was inducted into the Aviation Hall of Fame, followed by the Kansas Aviation Hall of Fame in 1987. He was a member of the prestigious Quiet Birdmen, served on the Board of Governors of the Aeronautical Chamber of Commerce, the National Aeronautic Association, and the Advisory Board of the Institute of Aeronautical Sciences. Beech was also a member of the Sportsman Pilots Association and the Veterans Pilots Association and served on the Eastern Region Executive Committee of the Aircraft Industries Association's Aircraft Manufacturer's Council.

In 1949 he had established the Walter H. Beech Scholarship in Aeronautical Engineering at the University of Wichita (Wichita State University) and in 1951 the university dedicated the Walter H. Beech Memorial Wind Tunnel in his honor. Beech Hall at Wichita's McConnell Air Force Base was dedicated in November 1988, and in April 1985, the Walter H. Beech Elementary School was named in memory of one of the city's highly respected aviation pioneers. KA

Ed Phillips, now retired and living in the South, has researched and written eight books on the unique and rich aviation history that belongs to Wichita, Kansas. His writings have focused on the evolution of the airplanes, companies and people that have made Wichita the "Air Capital of the World" for more than 80 years.

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