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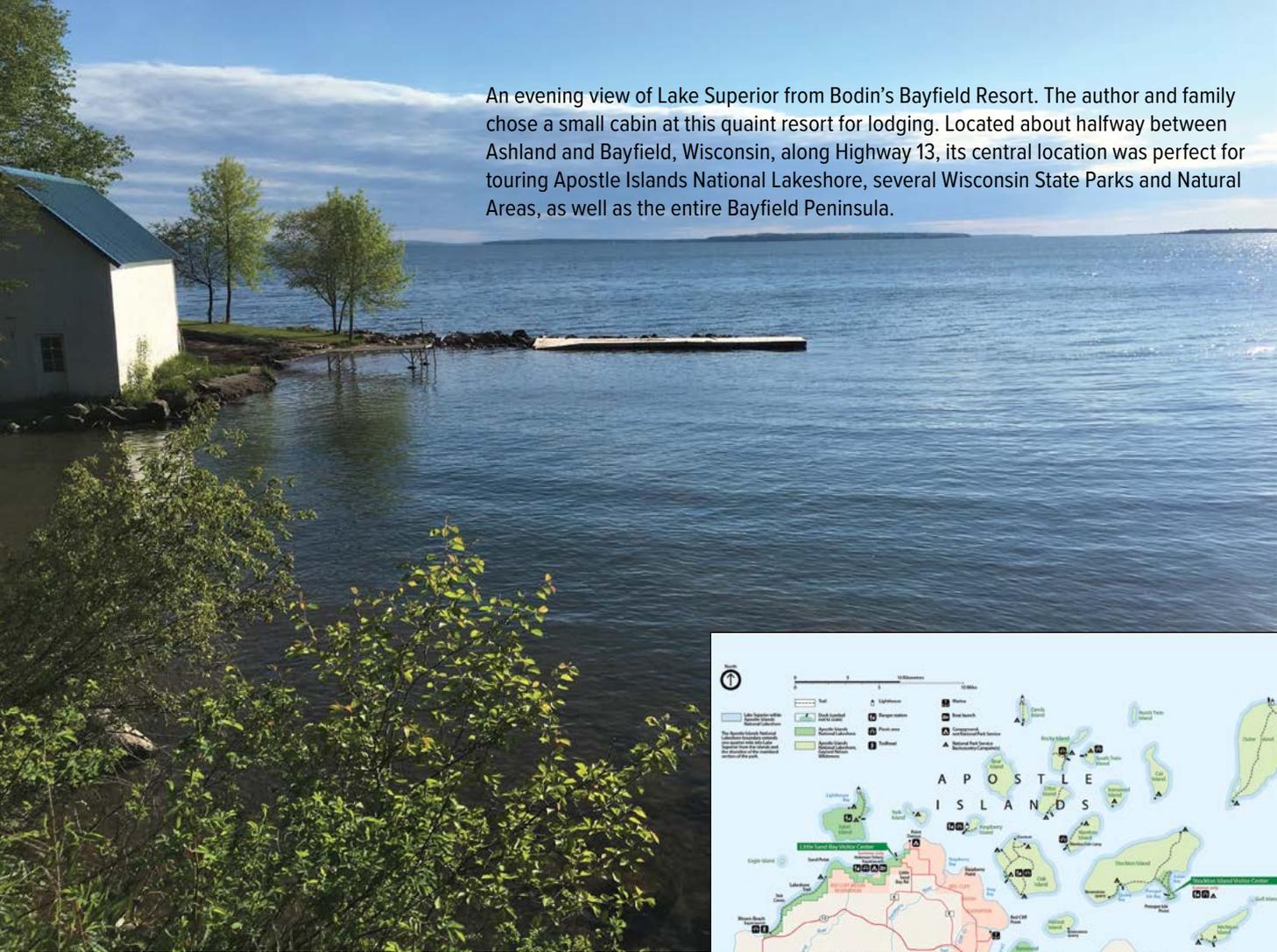


Flying to and Touring Apostle Islands National Lakeshore

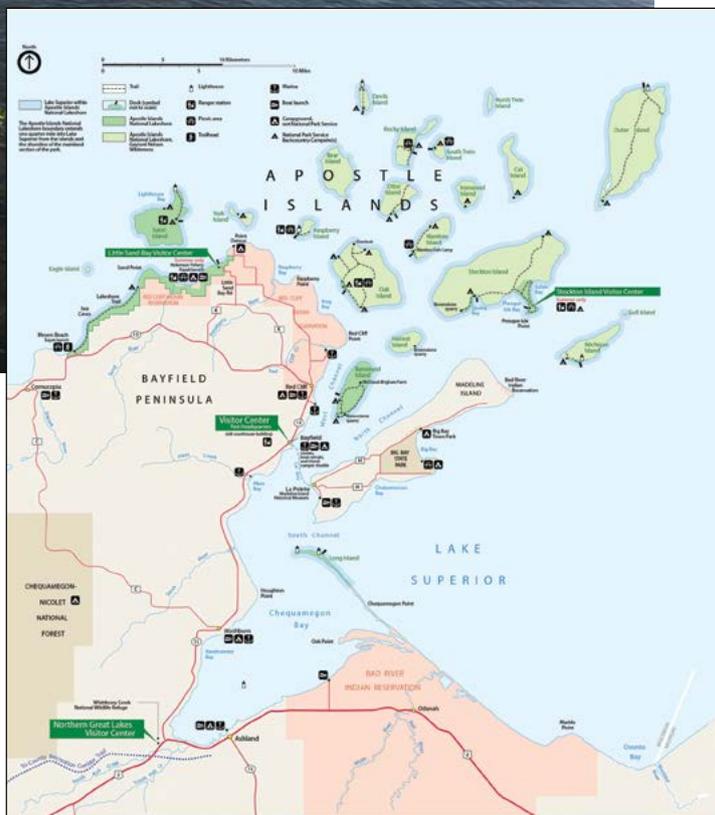
by Matthew McDaniel

Even on a warm and calm day, the power and danger of Lake Superior is palpable. The largest fresh water lake on earth, its enormity can be appreciated from nearly any perspective. Whether flying above it, strolling along a sandy beach, perched high on a shoreline cliff, or crossing in a large ship or ferryboat, it is hard to think of it as just a lake. To the natural senses, everything about this seemingly endless body of water tells you it's a sea or an ocean. No perspective I've had of Lake Superior has been more daunting than that from within a kayak, bobbing across its surface, completely engulfed in its massiveness. Such was the case, as I paddled along with my wife, two kids and two guides, far from shore in search of the famous Lake Superior sea caves.

The author's daughter and guide exit one of the many sea caves popular for kayaking to (and through) with professional guides. This area is on the northwest shore of the Bayfield Peninsula and is referred to as the "mainland sea caves" versus the caves on the edges of the Apostle Islands themselves. A truly spectacular Lake Superior experience on a calm day.



An evening view of Lake Superior from Bodin's Bayfield Resort. The author and family chose a small cabin at this quaint resort for lodging. Located about halfway between Ashland and Bayfield, Wisconsin, along Highway 13, its central location was perfect for touring Apostle Islands National Lakeshore, several Wisconsin State Parks and Natural Areas, as well as the entire Bayfield Peninsula.



The Great Sea

The native people of the upper Great Lakes region had an appropriately descriptive name for Lake Superior hundreds of years before any Europeans ever plied her waters. They called her, “Gitchigami,” which from their tongues loosely translates to “The Great Sea” or “Huge Water.” The first Europeans to explore the area called the lake, “lac Supérieur” (French for “upper lake”) simply to identify it as the yet-to-be-explored body of water north and west of Lake Huron and Lake Michigan. It was the famous 19th century poet Henry Wadsworth Longfellow who popularized the lake and the native name for it (spelling it “Gitchy Gumme”) in his epic 35,000-word poem, *The Song of Hiawatha* published in 1855. In more modern times, the lake entered the lexicon of popular culture when folk singer Gordon Lightfoot popularized it in his 1976 hit, *The Wreck of the Edmund Fitzgerald*.

For native people, the lake sustained them with food and fresh water and by providing trade routes between various tribes and villagers living along its incredible 2,700-plus miles of shoreline. For them, it was a workplace, always demanding great respect and often exacting the ultimate toll on those who offered less. As one modern commercial fisherman said, “No matter how big you are or what kind of boat you’ve got ... the lake

The Apostle Islands National Lakeshore boundary extends one-quarter mile into Lake Superior from the islands and the shoreline of the mainland section of the park. There are 22 islands in the archipelago, 21 of which are part of AINL.

is always the boss.” The reality of this has played out thousands of times. The Great Lakes contain over 6,000 known shipwrecks representing over 30,000 lives lost, with Lake Superior accounting for 550 of those sunken ships. Other than to blame the weather and storms, the lakes are well known for, the exact causes of most sinkings (including the loss of the 729-foot freighter *Edmund Fitzgerald*) remain mysteries to this day.

Today, the lake continues as a place of difficult and dangerous work for many individuals and industries, while also providing all manner of recreation and exploration for residents and tourists alike. Lake Superior covers approximately 31,700 square miles, making it the largest lake by area. Even if taking depth into account and, thus, measuring by water volume rather than surface area, Lake Superior would still be the third largest lake on earth containing 29,000 cubic miles of water. That's enough to cover, at one-foot deep, the entire land mass of both North and South America. Countless islands, peninsulas and rocky outcroppings decorate her shoreline. None are boring or without fascinating history, but it is the areas that have been deemed worthy of governmental protections within the National Park System (NPS) that draw the most visitors and offer the easiest access. One such area is known as the Apostle Islands National Lakeshore (AINL), located in northwestern Wisconsin on the southwest shores of Lake Superior.

Gateways to the Great Northwest

The grouping of the seven northwestern-most Wisconsin counties is referred to as that state's "Great Northwest" region. Here, there are several airports that can act as gateways to the Apostle Islands. In fact, the western shores of Lake Superior, both in Wisconsin and Minnesota, have a nice variety of airports that can (and frequently do) support King Air operations. However, most lack one key ingredient to terrestrial tourism – rental cars. One exception is Duluth International (DLH), located at the extreme western tip of Lake Superior at the bottom of the "arrowhead" of Minnesota (the triangular northeastern tip of the state which separates Lake Superior's northern shore from the Canadian border). Easily the busiest airport in the area, it also offers the greatest amenities for flight crew and passengers alike. Monaco Air is a top-notch FBO with clean, efficient, and modern facilities. Hangar space is available (important in the winter), as are ample parking aprons, pilot lounges and flight planning rooms. A variety of rental car companies offer their vehicles for pick up at either the FBO or the adjacent airline terminal.

The airport itself is impressive, as it is equipped to support Minnesota Air National Guard and Coast Guard units, regional airline operations, and to act as an alternate for major airline operations into Minneapolis/St. Paul (MSP). Its long runways are served by multiple approaches, from modern RNAV approaches with LPV minimums to Category I and II ILS's, to old-school VOR approaches. Add in a typical number of corporate and charter operations and flight test and training operations associated with Cirrus Aircraft's primary factory on the field and it can get busy at times. However, even at that, it's still laid back enough to merit only a standard control tower and Class D airspace (albeit with a dedicated approach control and excellent radar services available).

Beyond Duluth, the natural wonders of the area are all within reasonably short driving distances. While a drive into the Arrowhead and along the north shore is popular, what's to be seen and done up there merits an article of its own. A number of routes could be used to reach the AINL area in northwestern Wisconsin, but the most common would be to simply take Highway 2 almost to Ashland, then head north on State Road 13.

There are two notable alternatives to DLH. The first is Superior, Wisconsin's Richard I. Bong Airport (SUW), named for the Superior native who went on to become America's Ace of Aces flying a P-38 Lightning fighter in World War II. SUW has standard services and RNAV (LP) approaches to each of the four runway ends. Rental cars there are through Enterprise. While this airport is adequate in every way, it's only a few miles closer to AINL than DLH is. Thus, the more realistic alternative to DLH is Ashland's JFK Memorial Airport (ASX), named for the 35th President of the United States, who visited the city twice. First, while campaigning for president in 1960, he gave a speech at and dined with students from Northland College. He returned to the city by helicopter *Marine One* in 1963 and delivered a speech to a huge crowd right on the airport. Today, ASX is a well-maintained, full-service airport that hosts King Air sized aircraft regularly. Its main runway (02/20) is 5,197 feet x 100 feet and is equipped with a Localizer approach into 02. Its second runway (13/31) is 3,498 feet x 75 feet and is

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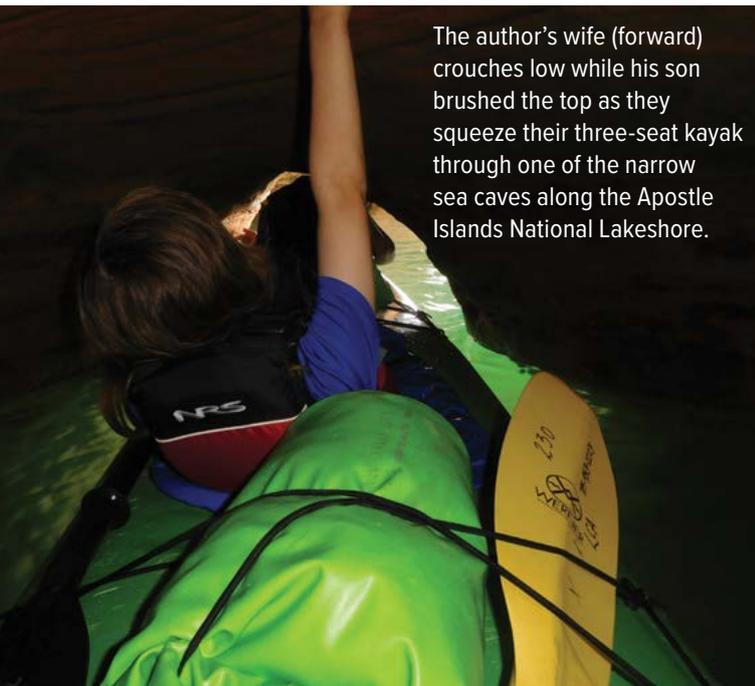
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The author's wife (forward) crouches low while his son brushed the top as they squeeze their three-seat kayak through one of the narrow sea caves along the Apostle Islands National Lakeshore.

often the preferred runway when winter winds howl out of the northwest. All runways at ASX are equipped with RNAV (LPV) instrument approaches that can be flown to 250-300 feet AGL by properly equipped aircraft. The FBO is an inviting log cabin style building, constructed

of local red pine that symbolizes the logging heritage of the Chequamegon Bay area; the Lake Superior bay upon which the city is situated. Tie downs are free for up to two weeks. While ASX is much closer to the Apostle Islands than DLH, the challenge of choosing Ashland to fly into would be arranging ground transportation thereafter. While a courtesy car is available for short visits, a rental car would have to be specially arranged for longer sojourns into the AINL and/or the variety of Wisconsin State Parks in the area.

Finally, Madeline Island has its own little airport known as Maj. Gilbert Field (4R5). It consists of a 3,000-foot × 75-foot asphalt runway, but little else. Though tiny, this airport is perfect for a day trip, as much of Madeline Island can be easily explored on foot or by bicycle. Bikes, carts, and other sources of transportation can be rented in the adjacent town of La Pointe during summer tourist season. For detailed information on Madeline Island tourism visit www.madelineisland.com.

Messengers from the Deep

For multiple-day stays, lodging choices are plentiful and there are plenty that should meet your comfort level during these unprecedented times. From standard hotels and motels in the cities of Ashland, Washburn, or Bayfield to all manner of resorts, lodges, cabins, Airbnbs and a wide variety of camping choices scattered across

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the entire Bayfield Peninsula. Or one could choose from a similar variety of options in or near La Pointe, Wisconsin on Madeline Island. In addition to Maj. Gilbert Field, Madeline is accessible by car/passenger ferry departing Bayfield. In the coldest months of a typical winter, this ferry route is frozen solid and an ice road is maintained along the same route for those brave enough to drive it.

Once in the area, it's the Apostle Islands and Lakeshores that call to be explored. The perfect starting point is at the Old Bayfield Courthouse. The stylish brownstone building houses the AINL Visitor Center. There are actually 22 islands in the archipelago, 21 of which are part of AINL. Only Madeline Island is not within AINL boundaries, though nearly a quarter of it is made up of the tranquil 2,500-acre Big Bay State Park. Most of the islands have campsites for those wishing to roam a desolate isle, followed by a night of near solitude. Sea kayaking

is also a popular way for tourists to explore the closer-in islands, as rental equipment and guides are readily available from several launch locations. Via kayak, one can paddle to an island, beach the craft, hike the trails on a given island, then move on to the next. But the most popular way to experience the islands is through a variety of cruises offered by NPS-authorized concessioner companies. Specific cruises cater to those wishing to explore the island's lighthouses (there are seven), to learn about shipwrecks and visit their locations, or to just meander between the islands while feasting on the scenery of their picturesque shorelines, sea caves and jagged cliff faces.

It's important to remember that these islands are not stagnate environments for casual sightseeing. They are vibrant with wildlife (water, land and air) and densely forested. Even the area's native black bears, who are excellent swimmers, are routinely spotted on the various



An adult Sandhill Crane forages in the marshland of Big Bay State Park on Madeline Island. Big Bay offers relaxing hiking, self-pay canoe and kayak rentals and great wildlife spotting.

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islands. Although the native old growth forests of towering white pine, hemlock, yellow birch, and sugar maple were decimated by logging decades ago, the island forests have rebounded since logging was halted. The plant life is less diverse now, the trees much smaller than their ancestors, and the timberland mix far less mature than in centuries past. Nonetheless, the islands remain untamed, mostly uninhabited, and at times wholly inhospitable. Choosing the right time and weather to cruise upon Lake Superior and hike or camp on its islands should not be understated.

For those adventuresome enough to make it off the peninsula and onto one or more of the islands, some highlights to consider are:

- Stockton Island: Home of the only non-mainland AINL Visitor Center, a historic brownstone quarry and extensive hiking.



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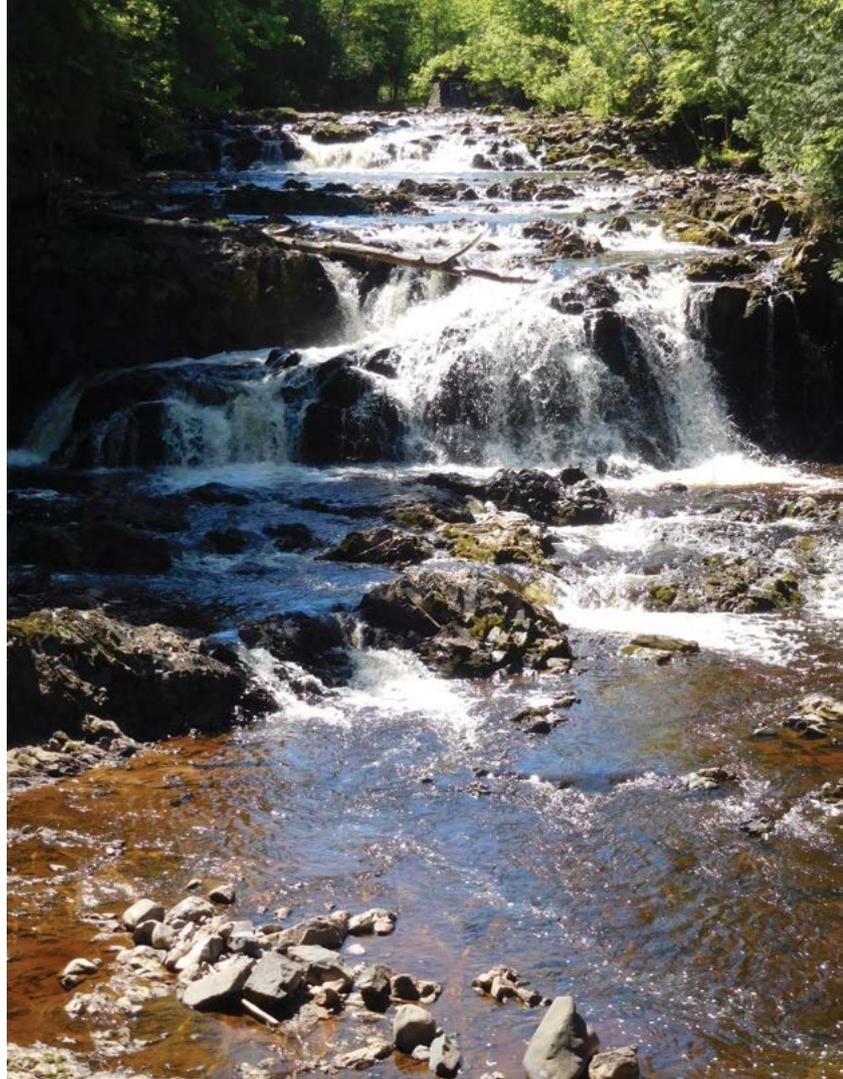
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Copper Falls State Park near Mellen, Wisconsin, is home to several beautiful waterfalls, some long and gradual and some high and dramatic. All are colored by the minerals in the surrounding lands which seep into the water to give it a distinct hue.

- Sand Island: One of the most popular islands for kayak trips, it supports both a ranger station and a lighthouse.
- Oak and Basswood Islands: Both fairly easily accessible from the peninsula, each with great hiking, overlooks and bird watching.
- Raspberry Island: While small, this island is popular for its lighthouse tour and its short south shore hike.

Stately Destinations

Any extra time you might have in the area can be easily filled with reasonably short drives to many of the Wisconsin State Parks in the area. These parks can also be substitutions if the weather is unsuitable for being on Lake Superior. High winds or waves, for example, can make kayaking quite dangerous and turn island cruises into uncomfortable, seasick-inducing roller coaster rides. But hiking/biking on mainland trails or water activities on calmer inland lakes, rivers or streams can often remain suitable on such days. The same can be said for the vast numbers of trails crisscrossing the Bayfield

Peninsula, almost all within 30 minutes or less from most the popular AINL lodging options. Some parks and trails to consider adding to your to-do list (or alternate to-do list) include:

- Any of the Bayfield County trails. There are literally dozens to choose from, ranging from many short/easy hikes of 2 miles or less, to several mid-length/moderate hikes of two to 6 miles, and even a couple long trails of 30 miles or more. Specifics on each trail option can be found at www.travelbayfieldcounty.com.
- Copper Falls State Park: Located immediately south of Ashland, off Highway 13, near Mellen, Wisconsin. This park is considered one of the most stunning in the state (no small feat in a state teeming with scenic public lands). Ancient lava flows carved deep gorges and helped created gorgeous waterfalls within the park. The area's abundant mineral deposits stain the rushing waters ever-changing shades of green, brown and copper. Charming log cabins are reminders of Franklin Roosevelt's New Deal work programs, such as the Civilian Conservation Corps (CCC),

which helped to protect such parks and make them more publicly accessible.

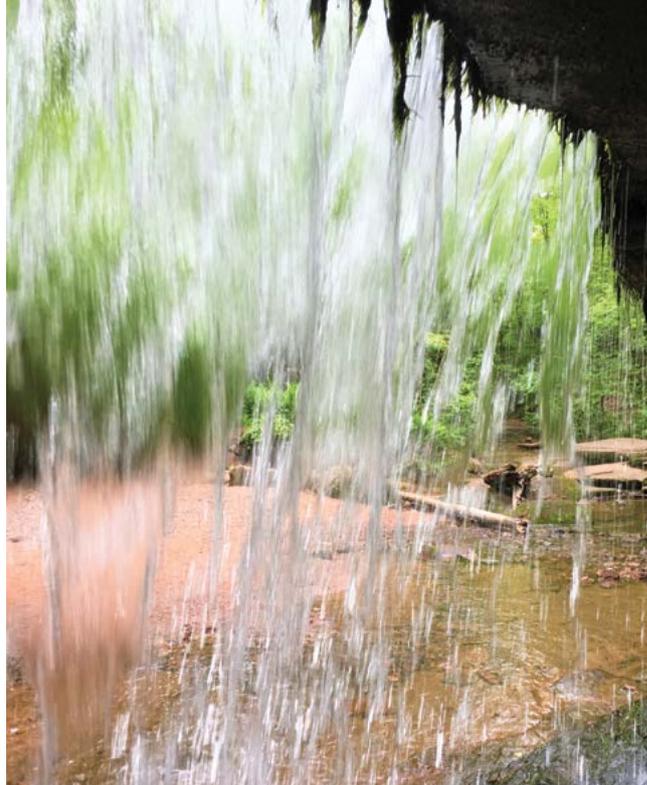
- Amnicon Falls State Park: While much smaller than Copper Falls, this park also contains a picturesque copper hued waterfall, as well as hiking along the Amnicon River. This park is a great choice for those driving from/to Duluth or Superior, as it is near Highway 2 (the route between Duluth and AINL).
- Waterfalls of all size and shape are abundant in the Great Northwest of Wisconsin. In the counties of Douglas, Bayfield, Ashland and Iron alone, over 20 named waterfalls exist. Many are 90-plus feet high, with Big Manitou Falls in Douglas County being the highest at 165 feet. Yet even some of the smaller (15-30 feet) falls are dramatic. Each is ever-changing, of course, and can be quite different to experience from one season to the next.

Sandstone Cornucopia

As a National Lakeshore, there is more to the Apostle Islands than just the islands themselves. Also protected are 12 miles of mainland coastline along the northwest shore of the Bayfield Peninsula. Most of the islands and all of this mainland coast have magnificent sandstone cliffs. Much of this bedrock rises from Lake Superior into steep walls towering up to 50 feet above the waterline. The relentless wind, waves, snow and ice have carved an endless variation of beaches, stone arches and windows, sandstone sea stacks and sea caves. These are the sights AINL is most famous for and not to be missed. In the summer, the most interactive way to experience the sea caves is via sea kayak. Several outfitters offer the appropriate equipment and guides. I recommend Lost Creek Adventures (www.lostcreekadventures.org) in Cornucopia, Wisconsin.

If your flight(s) to the area are outside the most popular summer tourist season, options are still abundant. Many summer hiking trails are popular winter snowshoeing and/or cross-country skiing trails. Snowmobiling is common on the peninsula and well-groomed roads and trails exist in every direction. If you are lucky (and hearty) enough, every few years the winter temperatures are so consistently low they cause the sea caves to become ice caves. The sea mist freezes inside them to create a stunning world of crystalline formations and frozen rooms of wonder. In such years, the ice caves are accessible via hikes across the frozen shorelines with appropriately certified guides.

Located on the western shore of the Bayfield Peninsula, Cornucopia is a quaint little village where you can stop for a coffee and sandwich. It even has a little grass runway airport the locals refer to as “Corny International,” which hosts a great small aircraft fly-in every summer. It’s also near Meyers Point, which is both a popular kayak launching point and the trailhead for Lakeshore Trail,



One of the many hikes on the western side of Bayfield Peninsula worth exploring is Lost Creek Falls. Like many of the hidden waterfalls in the area, this one is easily accessible and can even be walked under and behind without getting wet.

which meanders along the tops of the cliffs and sea caves. From there, with your guide, you can paddle out to the sea caves, many of which you can then maneuver your kayak into or completely through. The tighter the fit, the more memorable the passage. Longer voyages can include stops at tiny Eagle Island for unforgettable bird watching, or the larger Sand Island, where you can visit the Ranger Station and hike to the lighthouse. But it is the views from the water that truly stun the senses. The sea caves are at once beautiful and haunting. The sea stacks and sandstone arches grand in scale. Once in their midst, it is easy to become entranced by the views and forget you are but a floating speck upon the greatest of Great Lakes. **KA**

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Matthew McDaniel is a Master & Gold Seal CFII, ATP, MEI, AGI & IGI and Platinum CSIP. In 30 years of flying, he has logged over 18,500 hours total, over 5,500 hours of instruction-given, and over 2,500 hours in various King Airs and the BE-1900D. As owner of Progressive Aviation Services, LLC (www.progaviation.com), he has specialized in Technically Advanced Aircraft and Glass Cockpit instruction since 2001. Currently, he is also an Airbus A-320-series Captain for an international airline, holds eight turbine aircraft type ratings, and has flown nearly 90 aircraft types. Matt is one of less than 15 instructors in the world to have earned the Master CFI designation for nine consecutive two-year terms. He can be reached at: matt@progaviation.com or (414) 339-4990.



by Kim Blonigen

Due to unprecedented circumstances during these unpredictable COVID-19 times, the King Air Gathering (KAG), scheduled to take place October 22-24 in Wichita, Kansas, has been postponed to a yet to be determined date in 2021.

Safety is a strong foundation that pilots live by and based on what local, state and federal officials are recommending in regard to large gatherings, coordinators felt the safest option would be to cancel the event for 2020.

The King Air Academy, who is responsible for planning and hosting the KAGs, appreciates your understanding

of the challenges faced in trying to organize a large event during these unpredictable times. They would also like to thank the sponsors and exhibitors for their loyal participation, and the King Air owners and operators who have attended one of the King Air Gatherings. If you have yet to experience a KAG, we invite you to attend one in the future.

More information will be forthcoming on the specific dates and details regarding the KAG in 2021, as they become available. **KA**

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Troubleshooting Tips for King Air AC

by Dean Benedict

How's the air conditioning (AC) in your King Air right now? This time of year, my phone is burning up with air conditioning problems due to everything from low Freon to the dreaded Black Death. If your AC is acting up a little or not working at all, there are things an owner/operator can check before calling the shop. The more info you can give your mechanic, the more efficiently they can fix the problem.

Please don't mistake my intentions here; this is not a replacement for your POH, nor is it official training of any kind. I'm just offering some troubleshooting tips for the more typical problems found in King Air air conditioning systems.

Low on Freon

The most common problem with weak AC is low Freon. You need a shop with the proper equipment to measure

how much is in your system and whether it needs more Freon added or taken away. Over-servicing Freon is as bad as not having enough. Make sure you know whether your system takes R12 or R134a. Many King Airs built with an R12 system have been converted to R134a and there should be a corresponding STC in the POH. The Maintenance Manual or the STC will specify the exact amount of Freon your system takes. A pound over or under will greatly affect performance.

If the system is empty or very low, your shop needs a sniffer to find where the Freon is leaking. Such leaks need to be fixed. If the system is down just a little, it's probably the normal seepage inherent in most AC systems – rarely are they completely airtight.

The balance of this article applies to the 200/300/350 series King Airs. The AC system in these models has more components and therefore more places where the system can break down. My apologies to the

King Air 90/100 drivers, I'll catch you on the next one.

Belt and Quill Shaft

Troubleshooting is like peeling an onion layer by layer. The first layer is the belt and quill shaft – an easy check. Open the righthand engine aft inboard cowl. To do this you may need a screwdriver – model 200s have two camlocks on the bottom just forward of the front latch, these camlocks could require a common or Phillips screwdriver; 300s have three screws on the cowl door; 350s have latches only.

The compressor is right there so look for the belt. If the belt is shredded or missing, that's the first thing to fix. The belt might be the only issue, or it could mean the compressor is frozen. If the belt is intact, try to move it back and forth. It should only move about one-fourth inch and the clanking noise you hear is normal. If the belt moves freely without clanking, the quill shaft has sheared and must be replaced. If the belt and quill shaft are good, then you must cut into the next layer of that onion.

N₁ Low Light

In the cockpit, turn the environment switch to "Auto" (you can do this without the engines running) and look for the green "Air Cond N₁ Low" light on the annunciator panel. If you don't see it, turn the environment switch to "Manual Cool" and look again for the N₁ Low light. If you still don't observe it, toggle the Increase/Decrease switch to the "Decrease" position for at least 90 seconds and look again for that N₁ Low light. If you finally get the light at this stage it means you may have a temp sensor problem – the system thinks it is already cold enough, but the sweat dripping from your brow indicates otherwise. If you get the N₁ Low light right off the bat in "Auto" or in "Manual Cool," it means your AC problems are elsewhere and you must delve deeper still.

Reset Switch – Nose Gear Wheel Well

Go to the AC reset switch in the nose wheel well on the left-hand side. A yellow light in the switch indicates the AC has tripped, so if you see the light you should press the switch to reset the AC system; the light should go out. If there is no light, press the reset switch anyway. Many times, the switch has tripped, but the bulb is burned out so you have no yellow light.

After pressing the reset switch, you need to get back in the cockpit, turn everything off and fire up the right-hand engine, bringing it up to approximately 64% N₁. Once your load meter indication goes below 40%, turn the AC to "Auto" and keep your eye on that load meter. Within 7-15 seconds you should see a spike in the load meter telling you that the condenser blower just turned on. If you do not see a spike, turn the AC to "Manual Cool" and look again for



The N₁ Low Light on the annunciator panel is helpful when troubleshooting air conditioning issues on your King Air.

a load meter spike after 7-15 seconds. If the AC will not turn on in "Auto" or "Manual," then most likely one of the pressure switches is bad or there is no power going to the system's printed circuit board (PCB).

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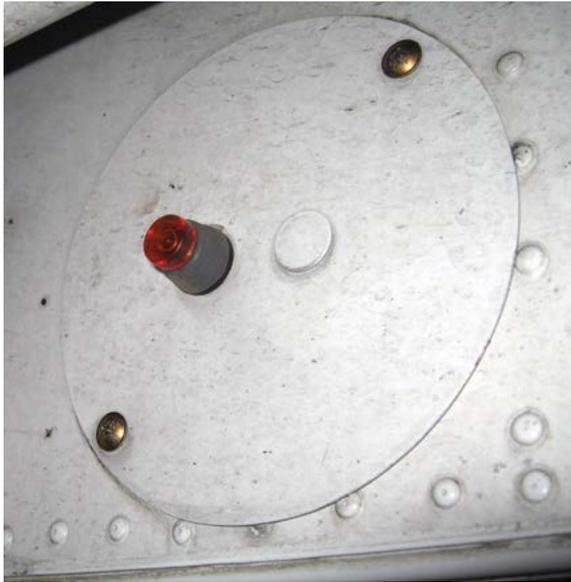
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Sometimes, pushing the air conditioning reset switch in the nose wheel well is all that is needed to get the air conditioning running again.

If you get the load meter spike in “Auto” or “Manual,” run the engine for 10-12 minutes then shut it down; get out of the cockpit and check the reset switch in the nose wheel well again. If that yellow light is on again you now know your system is tripping on the low-pressure side of the system. You are likely low on Freon. If you never saw a load meter spike then the condenser blower never came on; most likely the blower is bad causing the system to trip on the high-pressure side.

No Yellow Light

The AC reset switch is handy for troubleshooting when it is working, but the yellow lamp inside the switch was not designed to survive in an environment like the nose wheel well, so they tend to burn out easily. As mentioned, if there is no yellow light, press the reset button anyway to see if the AC will come back on. If it does, then that yellow light needs to be replaced. If the AC goes offline after a few minutes, then you have other problems to be addressed that are difficult to troubleshoot in the field.

Reset Switch – Righthand Wing Center Section

In older King Airs (think straight 200s) the AC reset switch is in the righthand center section of the wing inside a six-inch by six-inch panel with three camlock screws. Remove the panel and look in and toward the outboard side where you will see a printed circuit board with two red lights; one is labeled “Low” and the other “High.” If either red light is on, make a note which one it is so you can tell your shop and they will know where to start. You will also see a little red push-button switch which will turn either red light off.

I miss these reset switches in the wing. It is a simple, straightforward system that saves a lot of time and money searching for the AC system problem. I’m consulting on a 200 right now with this configuration. The AC was inoperative for a couple of years – there were several problems at play – finally the mess is being unraveled.

50 Degrees Fahrenheit Threshold

Don’t forget that the AC will not turn on if the outside air temp is below 50 degrees Fahrenheit. If you depart a hot climate with everyone in the aircraft melting from the heat, then you land in a cooler climate where a front just passed through and it’s 48 degrees Fahrenheit outside, you’ll have no luck with troubleshooting your AC problem. The OAT needs to be above 50 degrees Fahrenheit.

Summary

Let’s review: Try the AC in “Auto” first; if it doesn’t work, go to “Manual” and toggle the Increase/Decrease switch. If the AC will work in “Manual” then the system itself is fine and the only thing that needs attention is Auto Mode.

If your belt and quill shaft are intact but the AC isn’t working, you may have issues with a pressure switch or the power supply to the PCB.

If your reset switch is working and tells you the system is tripping on the high-pressure side, the shop knows to look at the condenser blower. If the reset switch indicates it is tripping on the low-pressure side, the shop knows to check the Freon level.

If you cannot get an “N₁ Low” light without toggling the Increase/Decrease switch, you most likely have a temp sensor issue.

Remember my goal here is to help you jump-start the repair on your air conditioning system. Your technician needs a pilot’s perspective on the problem. The more information you offer about what your system is doing or not doing, the more quickly your shop can zero in on the crux of the matter, saving both time and money.

Stay healthy, fly safely and keep cool. **KA**

Note: This article was adapted from one in the April 2012 issue. New King Air owners have requested I revisit some of my earlier topics.

Dean Benedict is a certified A&P, AI with 45 years’ experience in King Air maintenance. He’s the founder and former owner of Honest Air Inc., a “King Air maintenance boutique” (with some Dukes and Barons on the side). In his new venture, BeechMedic LLC, Dean consults with King Air owners and operators on all things King Air related: maintenance, troubleshooting, pre-buys, etc. He can be reached at dr.dean@beechmedic.com or (702) 773-1800.

Rudder Boost Ramblings

by Tom Clements

Why do some King Airs have the Rudder Boost (RB) system installed and others do not? No, the answer is not that Rudder Boost was an extra-cost option, similar to a particular piece of avionics. Instead, some models were certified with RB as standard equipment and others were not. From the first King Air 65-90 model in 1964 up until the model 200 that received its Federal Aviation Administration (FAA) approval in late 1973, RB did not exist. The 200 was the first model that had it installed.

Realize that the 200 was a rather huge step up from its large-cabin predecessor, the A100. Among other improvements, it gained nearly 10 feet of wingspan, 1,000 pounds of maximum gross weight, 30 knots of speed, 1.4 psid of maximum differential pressure and 170 SHP (shaft horsepower) per side! With the engines mounted 25 inches further outboard from the fuselage centerline and with 170 more horsepower, keeping V_{mca} down to a reasonable figure was a challenge. The T-Tail came as a result of the V_{mca} -lowering efforts. The engineers had a worry: Would the force required to deflect the rudder to its maximum limit during V_{mca} testing exceed the FAA-mandated limit of 150 pounds?

Because there was a distinct possibility that the 150-pound limit would be exceeded, the engineering team came up with the design of the RB system and had it installed on the two model 200 prototype airplanes, BB-1 and BB-2. As the flight test program progressed, it was found that the maximum cockpit rudder pedal force required was 147 pounds. Thus, RB was found *not* to be required. However, it was decided to make it standard equipment on all 200s. Why? I think there were two main reasons. First, since Beechcrafts are known for excellent handling characteristics in all regimes, why make the pilot apply a force so close to the limit?

Second, what about when the 200 evolved with more powerful engines, as it surely would someday? Since the 150-pound force limit would be exceeded, why not have the system already in use with a proven track record?

The King Air F90 model came out in 1978 and it shared many design features and systems with the 200, including the RB system. Required? No. The maximum required rudder force was well below the FAA limit, due to having 100 horsepower less per engine than the 200 and with the engine back in its previous location, more inboard. In 1984 the C90A replaced the C90-1. It shared many systems with the F90 and 200, including RB. Necessary? Of course not. Not only do we have the closer-mounted engines but they are putting out 200 HP less than the F90!

The same year that the C90A appeared, the 300 also arrived. For the first time, RB became mandatory to allow certification of this high-performing model. Now we had 1,050 horsepower mounted further out, at the same location as on the 200. The rudder force exceeded 180 pounds in the worst-case scenario. No longer was there an MEL (Minimum Equipment List) allowance to operate without RB. It became a mandatory item, rendering the airplane no-go when it was inoperative.

In a previous article and in my first *King Air Book*, I presented details about the design and operation of the three different RB systems that Beechcraft used. In short, the C90A (which includes all subsequent C90 variants manufactured after 1984), the F90-series, and the 200-series (including the present-day 250 model) all use a very similar system. The difference in left and right unregulated compressor discharge pressures (P_3) is the trigger that tells the RB to operate and the actual force applied to the rudder cable comes from a pneumatic

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servo filled with regulated P_3 pressure. It is an all-or-nothing system, meaning that when the difference in P_3 between the left and right engines gets great enough to trigger the ΔP (Delta P) switch, the rudder force applied is constant, helping apply about 40 pounds of force to the "good" side's rudder cable.

The first 1,000-plus 200s and B200s and all of the C90As were manufactured with three-blade propellers. These props had no minimum idle speed restrictions since they were not prone to the "reactionless vibration" concerns that came with the four-blade propellers. Thus, the Low Idle prop speed ran a little below 1,000 RPM, making the airplane quieter on the ramp and with less tendency to taxi too fast. Low Idle N_1 or N_8 speeds were just slightly above 50%. P_3 pressure relates to N_1 speed but not in a linear fashion. When N_1 goes from 50% to 60%, P_3 increases more than the 10% you might expect.

Do you understand why it is easier to trigger RB during a ground test when equipped with three-blade, and not four-blade props? It follows this logic: When an engine is actually shut down in flight, P_3 becomes basically ambient pressure. To achieve the 60 psi differential pressure that the ΔP switch requires to trigger RB – a little less than 60 psid in the 90-series – requires only moderate power on the operative engine, with its commensurate relatively low N_1 speed and with torque well below its maximum limit. For the ground test, the low power engine is usually at Low Idle, putting out a relatively low P_3 pressure but a value significantly above ambient pressure. Hence, to achieve the needed ΔP , the "good" engine needs to be turning faster, putting out more P_3 and creating more torque. Fortunately, the torque required to trigger RB is still easily attainable.

Using rough numbers for a 200, we might experience RB kicking the good side's rudder pedal in flight with an engine actually shut down at about 1,400 ft-lbs. of torque. However, we will need perhaps 1,600 to 1,800 ft-lbs. to trigger the kick when doing the ground test with the other engine at Low Idle, near 50% N_1 . Now put on four-blade propellers and adjust the Low Idle speeds up to near 60%. Since the idling, lower-power, engine is now putting out more P_3 pressure because of its elevated Idle speed, the other engine must put out even *more* power to create enough P_3 to trigger the ΔP switch. Now the torque can easily exceed 2,000 ft-lbs. before the rudder kick is felt! In fact, on hot days with the air conditioning operating – requiring an Idle speed of 62% or even more – it can become impossible to check RB without torque exceeding the 2,230 ft-lb. limit. (The chapter in my book discusses ways to still achieve a proper test.)

A slight diversion: The higher Low Idle speeds associated with the four-blade propellers led to another "problem." The autofeather system originally used 200 ft-lbs. as the setting for the low-pressure switch, the point at which the automatic feathering actually takes place. It was impossible to reach this low torque value in some 200s with the four-blades during the autofeather test, done with the low-power engine at Idle, not actually shut

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down. This caused Beech to change the low-pressure switch to one set for 260 ft-lbs.

Back to Rudder Boost: Realize that it is not required on any King Air besides the 300-series. This is unlikely to happen during your entire King Air flying career, but when and if you fly a single-engine ILS or LPV approach with strong, gusty wind conditions you may discover that you are making lots of dramatic rudder trim adjustments during final approach. Why? Because the RB is alternating between being “On” and “Off” as power changes are being made in the changing wind conditions. Make it easy on yourself by reaching down to the RB switch on the pedestal and turning it off! With the low power associated with the approach, rudder force won’t ever be high enough to require any help on the rudder pedals. In the rare situation of a missed approach, you can always turn RB back on when you want the rudder force help.

The 300 (“straight” 300, not the B300/350) has a very different RB system than the one found on the C90A/F90/200-series. Although the trigger is still P_3 pressure, no longer does a ΔP switch exist. Instead, raw P_3 pressure from both engines is fed into a computer and the same electric servo that the Yaw Damp system uses receives a command to activate. The more difference between left and right P_3 pressure, the more force the servo applies. So, it is no longer an “all-or-nothing” situation but instead the rudder force applied increases the more it is needed. Cool!

A downside? Yes, there is a minor one: It is harder to verify the ground test is working correctly because there is no rudder pedal kick. Instead, the rudder pedal on the higher power side gradually moves slowly forward as enough difference in power is experienced. Ah, but there is a workaround technique that proves the system is indeed working properly.

Since the force comes from the AP’s rudder servo, depressing the red AP/YD disconnect switch on either of the cockpit control wheels causes the RB action to immediately cease. My suggestion is to achieve about 60% torque on the higher-power engine during the test and then depress the red button. Now you will definitely note that the rudder pedal on that side quickly moves backwards. Release the button and the pedal will suddenly return forward if the system is working properly. (The same effect can be experienced by turning the RB switch on the pedestal off and then back on or by moving either bleed air valve switch to the bottom position momentarily.)

The B300/350 system is the best of all. Instead of measuring power difference using P_3 pressure as a substitute for actual power, the 350 system uses torque. Voila! Since power equals torque times propeller speed, this parameter – torque – is as close to actual power as we can get. Like the straight 300, the rudder force applied comes from the AP/YD servo and is variable, based on the difference in torque between the two engines. Again, if you ever find that you don’t like what it’s doing during an approach, turn it off.

In no King Air is RB meant to alleviate the pilot’s use of the rudder pedals! It is a *help* only, not a *replacement* for the pilot’s feet! The force that RB supplies will usually be just right, by itself, with no rudder trim needed, when one engine is at maximum power, the other is shut down and with its propeller feathered, at Vyse (single-engine best rate-of-climb speed, blue line) and with a five-degree bank into the good engine. However, think of that as just icing on the cake. When an engine quits on takeoff, at a speed below blue line, with the propeller not yet feathered, it is going to take a *lot* of rudder pedal force to keep going straight! Fly the airplane as if RB did not exist. “Step on the heading!” “Step on the ball!” Just realize, however, that RB is helping make the job easier ... but it surely is not a replacement for your feet. I worry that some pilots may have erroneously thought that they could just sit back, hold 10-degree pitch, let RB and autofeather operate, and all would be well. Friends, it doesn’t work that way! Doing that can get people killed. **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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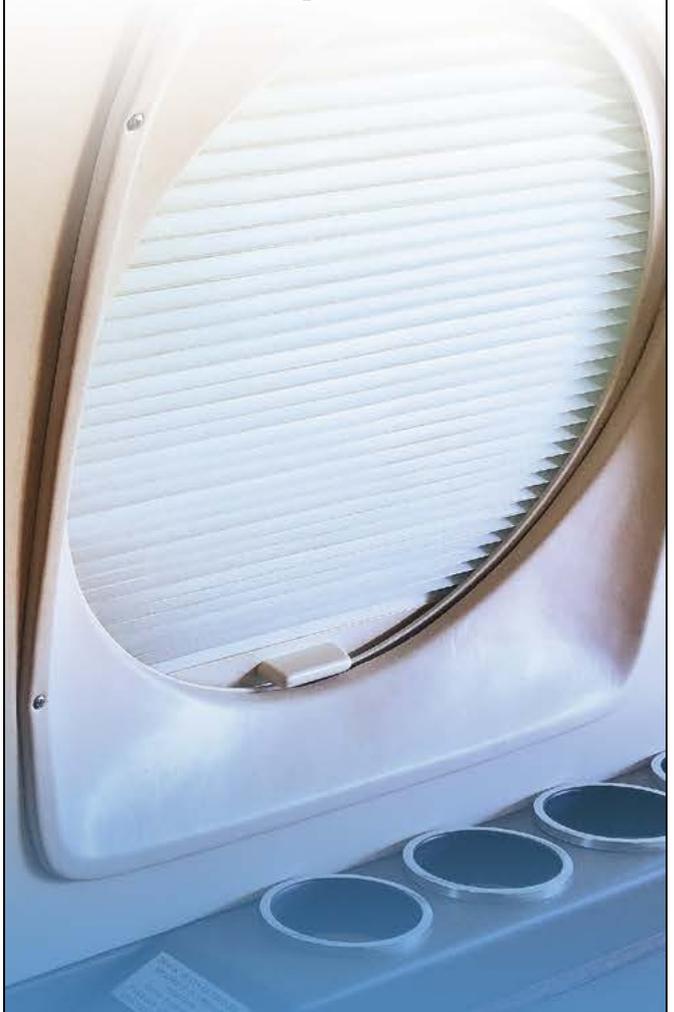
In 1926 the Travel Air Manufacturing Company offered pilots the “Type BH” biplane powered by the superb Hispano-Suiza V-8 engine.

by Edward H. Philips

In an effort to expand the Travel Air Manufacturing Company’s product line, Walter Beech and the engineering department mated the proven Type “B” airframe with the war-surplus Hispano-Suiza engine rated at 180 horsepower. Following the end of World War I, supplies of the “Hisso,” as it was commonly called, were available to buyers, but to keep prices as low as possible Travel Air offered their ships with the inexpensive and ubiquitous Curtiss OX-5 and OXX-6 engines rated at 90- and 100-horsepower, respectfully.



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Travel Air manufactured between 25-30 of the Type BH/3000-series biplanes during 1925-1931. Sales of the aircraft were hindered by availability and obsolescence of the Wright Hispano-Suiza engines compared with modern static, air-cooled radials such as the Wright J-4 and J-5 that were becoming increasingly popular by 1927. The "Hisso," however, had proved its power and reliability in World War I and was considered superior to any other V-type, eight-cylinder engine the Allied or belligerent nations possessed. (Edward H. Phillips Collection)



IN HISTORY

In 1925, its first year in business, the Wichita, Kansas-based company sold 19 airplanes and held orders for more as 1926 dawned. To increase production, Walter Beech, Clyde Cessna and the board of directors relocated manufacturing to West Douglas Avenue where 30 employees struggled to keep pace with growing demand for Travel Air airplanes.

Development of the Type "BH" began with the Type "BW" that was introduced in March 1926. The latter was powered by the new, nine-cylinder Wright J-4B static, air-cooled radial engine rated at 200 horsepower. The engine was manufactured by the Wright Aeronautical Corporation and cost nearly \$6,000 – nearly double the price of a factory-fresh OX-5-powered biplane – the company's "bread and butter" and bestselling model. A local Wichita oilman named W.B. "Skipper" Howe plunked down his money for a J-4-powered ship that would cost him a whopping \$9,800 when delivered.

The Type BW first flew in March with Beech at the controls. According to Bob Phelps, one of the Travel Air's original employees and an eyewitness to the flight,

Walter flew around the airfield and made a low pass in front of the small group of spectators. After landing he reported that the ship was nose heavy and needed changes to the wing rigging. Phelps, assisted by engineer Lloyd Carlton Stearman, discussed the situation and concluded that the stagger needed to be changed by one degree. Beech took off again and flew past the crowd, this time holding both his arms up in the air as the biplane flew straight and level.

The first Travel Air to boast a Hisso powerplant was the Type "CW" cabin biplane designed by Stearman, Beech and Cessna along with engineer Herbert Rawdon. The ship was the largest yet built by the company, with a one-piece upper wing panel that spanned nearly 42 feet. The cabin could accommodate four people but the pilot sat outside where he could listen to the "wind in the wires." The customer, brothers Joseph and Wilford Gerbracht of the Gerbracht Aeronautic Corporation based in Ames, Iowa, christened the ship *Pegasus* (other sources report it was dubbed *The Golden Pegasus*). They operated the airplane for charter, air taxi and delivering newsreels to movie theaters.



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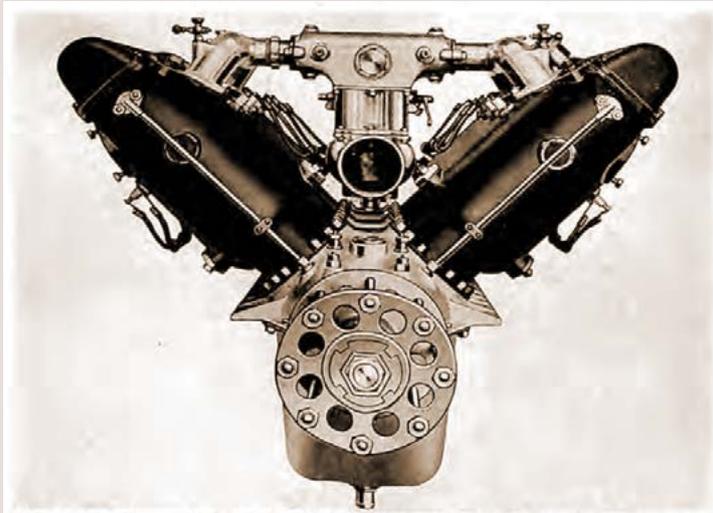
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Front view of a Wright Hispano-Suiza engine reveals carburetor and intake manifold between the cylinder banks. In May 1917, the Wright-Martin Corporation was selected to build 1,000 of the 150-horsepower engines. (Manufacturers Aircraft Association)

The next application of the Hispano-Suiza engine came about in preparation for the 1926 Ford Tour (officially known as the “National Air Tour for the Edsel B. Ford Reliability Trophy”).¹

Lloyd Stearman and Herbert Rawdon modified the standard airframe of the Type BW to accept the 180-horsepower version of the Hisso, thereby creating the Type BH. The airplane was one of several Travel Air biplanes that took part in the Ford Tour, including a Type BW owned by the Pioneer Instrument Company. Flown by Walter Beech and navigated by Brice Goldsborough, the BH won the Ford Tour, according to Beech, largely because Goldsborough’s navigational skills.

Travel Air test pilot Clarence Clark flew the Type BW during the two-week tour that covered a large swath of the Midwestern United States, including Kansas. As was the Type BH flown by Beech, Clark’s Type BW was equipped with mechanical brakes designed by Travel Air engineers. The brakes helped Walter place first and Clark second in a number of events held at airports along the Tour’s route.

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IN HISTORY

One of Travel Air's earliest attempts to build a cabin biplane was the Type CH that featured a "Hisso" rated at 180 horsepower. Designed to carry four passengers in the small cabin, in 1926 the ship was sold to the Gerbracht Aeronautic Corporation based in Ames, Iowa.

(Edward H. Phillips Collection)



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During Travel Air's brief seven-year existence from 1925-1931, workers built more than 1,450 biplanes and monoplanes. Of these, records indicate about 25-30 were Type BH (later changed to Type 3000). Customers were informed that the company would not build a "Hisso-powered" biplane unless the owner provided the engine, because none were kept in stock at the factory. During 1927-1928 the Type 3000 was flown by Louise McPhetridge von Thaden to establish altitude, speed and endurance records for women aviators. She was the only woman to hold all three records simultaneously, albeit only for a short time.

A Detailed Look at the Hisso

The history of the Hispano-Suiza Model 8A engine harks back to the autumn of 1914 when the Allied powers realized that the German six-cylinder Mercedes aircraft engine was superior to any powerplant being used on airplanes built by England or France.² In response, a number of European companies attempted to design new engines, but one engineer – Marc Birkight – soon forged ahead of his contemporaries. He was a highly respected and capable engineer at the Hispano-Suiza Company that was well known for its powerful and luxurious automobiles. The company had factories in Barcelona, Spain and in Paris. Birkight, however, was a Swiss engineer and had extensive experience in designing and constructing machine tools. He considered a factory's ability to manufacture an engine quickly and accurately to be as equally important as its performance. One historian described Birkight as a "... remarkable man. He invented the sports car, built six-cylinder cars that could go 100 mph, yet which

idled so smoothly that a dime could be balanced on the radiator. He made 12-cylinder cars that were better than any Rolls-Royce and designed the first good aircraft cannon, and in 1915 Birkight showed the world how to design and build a water-cooled, 150-horsepower engine."

Birkight's creation featured aluminum cylinder banks with threaded, steel sleeves – a configuration that reduced overall weight, stiffened the crankcase and promoted easier, faster fabrication, manufacture and assembly. A single overhead camshaft was mounted on each bank of four cylinders that featured a bore of 4.7 inches and a stroke of 5.1 inches. The engine displaced 718 cubic inches and had a dry weight (less radiator and plumbing for water cooling) of 467 pounds. Moving parts were enclosed and lubricated by a pressure-oil system. Overall, the powerplant was rigid, light, durable and reliable. The engine's weight was actually less than some static, air-cooled radial engines of the era that normally weighed less than water-cooled powerplants.

The first prototype of his V-8 design was tested by the French army in 1915 and successfully ran under test loads for 15 hours. Two additional engines ran for 50 hours and both passed the army's stringent tests. These powerplants were capable of delivering 150 horsepower continuously, compared with about 90 horsepower for a majority of aero engines then in use by the Allied nations. Late in 1915 production began at the Paris factory, and the French Government soon ordered design work by other companies to cease and focus on producing the Hispano-Suiza engine.

By 1916, a year before the United States entered the war, contracts were underway to build the powerplant in America.³ Early in 1916 a contract for 450 engines was

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By 1928 Walter Herschel Beech was leading America's foremost airframe manufacturer – the Travel Air Company based in Wichita, Kansas. Under his guidance more than 1,450 biplanes and monoplanes were built during the period 1925-1931.

(Mary Lynn Oliver)

The Type 3000 was flown to a number of records for female aviators by Travel Air sales/demonstration pilot, Louise McPhetridge von Thaden, representing the D.C. Warren Travel Air distributorship based in Northern California. In December 1928, Thaden set a record for women pilots when she coaxed a Type 3000 to an altitude of 20,200 feet, according to the sealed barograph installed in the airplane. She also set endurance and speed records flying a Type 3000. (Bill and Pat Thaden)

awarded to the General Aeronautic Company of America – a subsidiary of the Wright Company. Because of the complexity and sophistication of the engine and its specifications, the Wright-Martin Aircraft Corporation was created and took control of the General Aeronautic Company, the Wright Company and the Simplex Automobile Company.

Development of the engine proceeded rapidly by May 1917 when the United States Government submitted an order that, as of July, called for up to 1,000 of the engines. In addition to the 150-horsepower engine, both 180-, 200- and 300-horsepower versions were being designed but the decision was made to concentrate on the original engine in order to meet ever-increasing Allied demand for primary flight training biplanes.⁴

Manufacturing the Hispano-Suiza V-8 was challenging from the standpoint of fabrication and assembly. A senior Wright-Martin official summed up the situation:

“It must be remembered that in 1917 there were extremely few men in America with any experience of so delicate a manufacturing proposition as an aviation motor, and this made it difficult to obtain much assistance from the outside.” He went on to state that, “One of the basic features of the Hispano-Suiza engine is an aluminum casting of considerable delicacy and quite intricate. In Europe, the best foundries have been unable to produce this part so that it can be machined without previously being repaired by difficult hand work. In America, the usual sources of supply of aluminum castings were unwilling to undertake the job, so the Wright-Martin Corporation had to establish its own foundry. This was done to such good purpose that the castings being made in the autumn of 1917 were infinitely superior in quality to any obtainable in Europe right up to the end of the war.”

During the war orders for the 150-horsepower engine built by the Wright-Martin Corporation increased in value from \$2 million in September 1917 to about \$50 million by October 1918. If the war had continued into January 1919, production of 30 engines per day and 2,000 units per month was planned. 

Notes:

1. The custom-made trophy cost Henry Ford \$7,000. It remains on permanent display at the Henry Ford Museum in Dearborn, Michigan.
2. The Mercedes engine powered a number of successful German designs including the Pfalz and Albatross single-seat fighters and the famous Fokker D-VII.
3. When the war ended in November 1918, about 25,000 workers were engaged in manufacturing Birkight's V-8 in 14 French factories, supplanted by one in England, three in Italy, one in Spain and one in Japan.
4. Manufacture of the 300-horsepower version was planned in parallel with the 150-horsepower engine but work on the 200-horsepower V-8 was terminated. In November 1918, the more powerful version was tested and performed well, and Wright-Martin was preparing to build as many as 1,000 units per month when the Armistice was declared on November 11 of that year. A total of more than 49,000 engines of all types were built during the war.

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, Kan. 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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 Left: Chris Crisman/TNC/LightHawk; Right: Lincoln Athas/WCC/LightHawk

Blackhawk Announces New XR Upgrade Kit for the King Air 350 Series

Blackhawk Aerospace announced the Federal Aviation Administration's (FAA's) Supplemental Type Certificate (STC) approval of their new XR Upgrade Kit for the King Air 350 series.

The XR Kit optimizes a stock King Air 350 series aircraft by increasing Max Gross Takeoff Weight to 16,500 pounds and maintaining a Basic Aircraft Empty Weight that is 220 pounds lighter than comparable extended range aircraft for greater payloads and up to 25% more endurance.

The original Pratt & Whitney Canada (P&WC) PT6A-60A engines and 4-bladed aluminum propellers are removed and replaced with brand-new 1200 shaft horsepower (SHP) PT6A-67A engines and lightweight MT 5-bladed composite propellers. The XR Kit also includes new heavy-weight landing gear, high floatation tires, Raisbeck fully enclosed High Floatation Gear Doors, and the True Blue Power TB44 Lithium-ion battery. The XR Kit also incorporates conformal auxiliary CenTex Saddle Tanks that are 172 pounds lighter than the OEM's extra range fuel tanks while providing additional endurance and range improvements to meet the most demanding mission requirements.

The PT6A-67A 1200 SHP engines provided with the XR kit are flat rated to 1050 SHP. The -67A's larger compressor produces higher thermodynamic horsepower output to provide full torque at higher altitudes. This extra horsepower provides improved first, second, and third segment climb capability, greater takeoff performance in high and hot conditions, and increased single-engine service ceilings. The ability to reach FL350 in 18 minutes significantly reduces exposure within hostile airspace and ensures crews can be on-station to meet time-critical mission execution windows. A larger, single oil cooler is provided with each engine to ensure oil temperatures remain within limits while taxiing during the hottest weather conditions. The new PT6A-67A engines come with a P&WC Enhanced Warranty of 2,500 hours or 5 years with prorated coverage to the 3,600 Time Before Overhaul (TBO) and include all mandatory and optional Service Bulletins. The new engines deliver peace of mind and greater reliability while significantly expanding mission capabilities.

The quieter MT 5-blade composite propellers offer an optimized blade design and shorter diameter (102 inches) to increase ground clearance and reduce Foreign Object Damage (FOD). The composite blades reduce cabin and exterior noise by at least 5 dBA helping to improve stealth operations. Another key advantage of the MT propeller is that it allows for the removal of the ground-idle solenoid which reduces weight and maintenance costs. The composite propellers are extremely durable and come with the longest TBO in the industry at 4,500 hours. They also offer unlimited blade life compared to traditional aluminum propellers, which can only survive to the third or fourth overhaul.

The True Blue Power TB44 Lithium-ion battery replaces the main-ship battery, which provides a weight savings of 30 pounds while doubling cranking amps for quicker engine starts. This battery is built for use under the toughest conditions with superior temperature performance (-40°C to +70°C) while having a useful life that is double that of lead-acid and NiCad alternatives. The intelligent monitoring system incorporated into each True Blue Power battery prevents the need for battery removal for capacity checks and reduces maintenance costs by 50% or more.

The XR-equipped King Air 350 with PT6A-67A engines requires 4.8% less power at equal speed and produces 24% more horsepower at typical loiter altitudes,



which delivers up to 25% more endurance than a PT6A-60A-equipped King Air 350. Furthermore, Blackhawk's XR Kit significantly expands the ability to meet or exceed second segment climb gradient requirements with full fuel and provides a head-turning 60% increased climb rate to altitude. The XR Kit also increases cruise speeds 30-40 KTAS to ensure on-time mission execution with minimal notification.

In addition to performance enhancements, the XR Upgrade Kit also impacts the bottom line. The kit provides improved performance and operational flexibility at a significantly lower acquisition cost as compared to other special mission aircraft with extended range. Factory-new propellers, engines, heavy weight landing gear, True Blue Lithium-ion battery, Raisbeck fully enclosed High Floatation Gear Doors, and CenTex Saddle Tank fuel lockers are all included in the price of the upgrade.

The Blackhawk XR Kit transforms readily available King Air 350s into a low cost, high performance, special mission workhorse. For more information on the XR Upgrade Kit for the King Air 350, visit www.blackhawk.aero/ka350-xr or call +1 (254) 755-6711.

FAA Approves Additional PWI LED Lights for King Airs

The Federal Aviation Administration (FAA) announced the PMAs (Parts Manufacturing Approval) of PWI's LED lighting for use in additional aircraft, including King Airs.

The 1495 bulb replacement LED reading light was approved for the Beechcraft King Air B200T and B200CT and the 1308 LED replacement reading light in the King Air C90, C90A, C90GT, E90, B200, B200C, B200T, B200CT, B200GT, B200CGT and the 250 models.

The LED lighting uses 1% of the power that incandescent bulbs require, drawing less than 0.05 amps and running at less than 10 volts, which allows for cooler operating temperatures. PWI says the LED lights also provide 100,000 hours of operating life.

Lighting can be purchased through PWI's authorized dealer network (list at pwi-e.com/business-partners/) or directly by emailing their sales department at sales@pwi-e.com. 

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TECHNICALLY ...

Service Bulletin MTB-34-03: Navigation – TDR-94D ATC Transponder Strapping Change for King Air B300 and B300C Configured for 15,500 or Greater Max Takeoff Weight

Date: July 14, 2020

Effectivity:

Super King Air B300, Serial Numbers FL-381, FL-383 through FL-953, FL-955 through FL-1009, FL-1011 through FL1030: Only applicable to airplanes with a maximum takeoff weight of 15,500 or greater and updated for ADS-B Out capability by Field Service Kit 101-3416.

Note: Airplanes that have ADS-B Out capability installed by an STC, should contact the STC holder to see if this service document is applicable.

Super King Air B300, Serial Numbers FL-954, FL-1010, FL-1031 through FL-1234: Only applicable to airplanes with a maximum takeoff weight of 15,500 or greater.

Super King Air B300C, Serial Numbers FM-12 through FM-65: Only applicable to airplanes with a maximum takeoff weight of 15,500 or greater and updated for ADS-B Out capability by Field Service Kit 101-3416.

Note: Airplanes that have ADS-B Out capability installed by an STC, should contact the STC holder to see if this service document is applicable.

Super King Air B300C, Serial Numbers FM-66 through FM-86: Only applicable to airplanes with a maximum takeoff weight of 15,500 or greater.

Reason: To correct the ADS-B Out emitter category from Light to Small on ADS-B Out capable airplanes configured for 15,500 or greater MTOW.

Compliance – Recommended: This service document should be accomplished at a scheduled maintenance period or inspection.

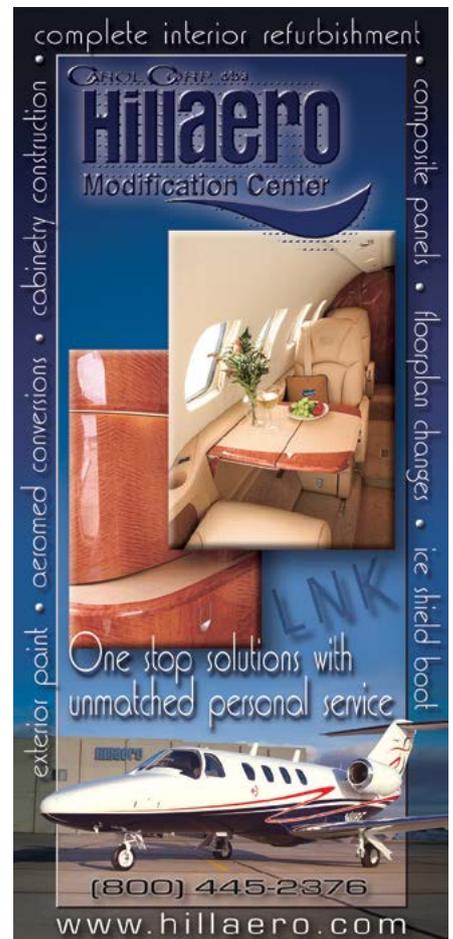
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