



# Reflections

The Quarterly Journal of the Northwest Airlines History Center



*Celebrating 20 Years of the NWAHC*



**September 2022**

Volume 20, number 3

**In this jumbo-size issue:**

A visit to Milwaukee's great terminal museum

Ownership change for the former Duluth A320 maintenance base

Thoughts on structuring legacy donations

The next 20 years! Our vision for a permanent museum (with photos!)

**Our mission:**

To preserve and display the memory of Northwest Airlines' colorful history.

To tell the stories of carriers merged and allied with NWA, and the stations and regions they served.

To show how the legacy of NWA carries on into the future.

To inspire youth to pursue aviation careers and interests.



The Atlantic and Pacific DC-10 fleets interchanged at Minneapolis/St. Paul in the late 1990s and 2000s. Promotional photo from NWA's corporate image library held at the NWAHC.

## Wide-cabin Wonder

**The unforgettable DC-10 Series 40 marks fifty years from certification**

—by **Scott Norris**

***Editor's note:** There is only one preserved DC-10 at a museum in North America; the former ORBIS Flying Eye Hospital, at the Pima Air Museum in Tucson, AZ. No complete DC-10s are preserved and available for public viewing in passenger airline colors, anywhere. For such an iconic modern-era aircraft to be essentially forgotten is a shame.*

### TWO AIRCRAFT TYPES DO NOT FIT ALL

By the mid-1960s Northwest was well into its fleet transition and simplification plan - replacing propeller types with the Boeing 727-100; first-generation Boeing 720s for the stretched 727-200; and long-range 707-320s with the new Jumbo Jet 747. But Donald Nyrop and his fleet planners saw a gap. **THREE ERAS FOR THE THREE-HOLER to page 7**



# Boarding Announcements



## From Director Bruce Kitt

October marks the 20<sup>th</sup> Anniversary of the Northwest Airlines History Center, 2002 – 2022. A celebratory achievement made possible by the dedication of the volunteers who have kept the museum open and running, and to you, the members who have supported us with your paid memberships, your financial donations, and memorabilia gifts. Thank you for your continued trust and support.

Our 40<sup>th</sup> Anniversary will be different. To reach that milestone the museum must transition into a professionally structured organization. The board has identified three goals necessary to insure the NWAHC's future:

1. Grow the board to include education, business, and community representation
2. Hire a PT or FT manager with museum experience
3. Initiate a capital fundraising drive for a commercial aviation museum

The third goal is long-range and Scott will show you the "GO BIG" idea on the following pages. I want to talk about the plan to accomplish that important first goal. I have mentioned in previous messages how successful the current board has been at keeping the NWAHC airborne. In order to achieve a lasting presence, however, the board must expand beyond our airline employee boundaries.

In our preliminary talks with Access Philanthropy (AP) and the Metropolitan Airport Commission (MAC), the need for our board to include more than aviation people has been stated more than once. Beyond serving as a display case for commercial aviation history, we envision the new NWAHC as the introduction into the wider world of commercial aviation. University level aviation programs, both academic and flying, bracket the Twin Cities to the north and south, in addition to military aviation museums. Missing is the go-to destination that, in addition to providing an educational component (i.e. STEM or STEAM), highlights the myriad vocation and career fields commercial aviation requires beyond the cabin and cockpit perception.

Our museum of the future is planned to serve as an educational component for surrounding school districts. College is not necessarily the post high school goal for all students, and aviation isn't just for college grad students. Schools still have shop classes for those skilled in working with their hands and minds. Likewise, there are other business-

partnering avenues that serve the need of students whose interest and talents lie elsewhere. Our museum will work with educators so students see how varied skills are needed to make the entire aviation field fly. What the museum offers will conform to state educational standards.

The business community also needs to be represented on our board. Northwest Airlines' global reach supported many businesses in the upper Midwest. Northwest's presence both attracted, and contributed to, the caliber of the workforce that is still found in Minnesota. Building off the educational component of the museum, the other career fields that commercial aviation draws upon are the same fields that businesses also need. While the active business relationships that Northwest's presence once cultivated are now gone, there is a legacy relationship that can serve as an opening to recruiting renewed business participation and support.

The third potential source of board members is the community, in both a broad and a local sense. Logically - and practically - our commercial aviation museum needs to be located at an airport. For several important reasons MSP and Holman Field have been ruled out as possible sites, but Flying Cloud Airport (FCM) in Eden Prairie offers the greatest potential. Flying Cloud just initiated a Long Range Plan (LRP) ([www.metroairports.org](http://www.metroairports.org)) to guide future development and increase public utilization. We were lucky to have approached FCM at the beginning of the LRP and have been able to have direct talks with FCM's management. Our museum vision checked off many of the same boxes FCM was looking at to increase the airport's community relationships in the west metro area.

Our vision and FCM's vision both include space to be a community asset. Meeting rooms, a hangar that can accommodate public gatherings such as receptions, showings, corporate events, etc., are planned for. We want to be a year-round place to watch airplanes, one that could have limited coffee and food availability during the day and the ability to have quality evening dining (think of the successful Holman's Table at Holman Field). We envision the museum as the main draw, but also want to make that visit an enjoyable reason to hang out at the airport. We have a bold plan that needs the input and support of many allies.

There is a pool of expertise and talent we will approach to help achieve our future plans. Conversations with AP have outlined a general plan to recruit potential individuals who have an affinity to aviation and might respond to the challenge we've set for the NWAHC's future. We'll develop a list of candidates, and from that list take the first steps to ensure there is a 40<sup>th</sup> anniversary to celebrate. Your continued support will help us arrive there. CAVU.

# Compass Readings

## Visiting our museum colleagues in MKE, with historic gifts —by Bruce Kitt

The Northwest Airlines History Center has in its collection the beer stein pictured at right. All that is known about the stein is that it's tied to something Northwest did in Milwaukee (MKE). MKE has been in Northwest's system since 1926, but Northwest has had a hot & cold history of service into Mitchell International Airport over those intervening 82-years.

The obvious place to begin a search for the story of the stein is in the NWAHC's extensive employee newsletters, but what year? Overall impression of the stein is that's "recent", but that spans several decades. I took a chance on 1991/1992, but came up empty. Cutting my quest short, I called the Mitchell Gallery of Flight ([www.mitchellgallery.org](http://www.mitchellgallery.org)) and left a voice message about the stein. I received an email the next day from Bill Streicher, the Director of the MGF, who said he'd see what he could find in their archive. Bill sent me an email the following day with news the airport's Public Affairs & Marketing folks had found press coverage about Milwaukee "spreading it's wings" and Northwest Airlines - in 1988. Bill also stated that their museum did not have an example of the stein in their collection.

The purpose of the NWAHC is to share the story of our family of legacy airlines. To that end, the NWAHC has donated duplicate items to those museums that have expressed an interest in likewise preserving Northwest's history. We have an extra stein, and what better way to introduce the NWAHC to a new museum that shares a common intersection of an airline and an airport, than donating one to them? I even offered to bring it to them.

Having the ability to non-rev travel, on May 9th, I flew to MKE, met Bill Streicher, and Harold Master, Director of MKE Public Affairs & Marketing, and handed Bill their very own example of the stein. Additionally, I found two articles about Northwest's expanded service at MKE in February and May 1988 issues of Passages. I made copies of those articles and presented them along with the stein. Disappointingly, there were no photos, nor mention, of the stein in either article. As a bonus, I had a guided tour of their museum and their archive facility.

The next steps will be to scour the newspapers for Minneapolis, St. Paul, and Milwaukee for further coverage of this specific travel campaign. Hopefully there will be a picture to verify the stein and the date.





LEFT: the NWAHC's Bruce Kitt (in red) presents Bill Streicher of the MGAF with the stein and historic documents. Below, Streicher and Harold Master of MKE. Far corner, a commemorative pin issued by Northwest in 1988 with the same artwork as the stein.



THIS PAGE: the MGAF features dozens of well-documented display cases with hundreds of artifacts concerning the airport's role in civilian and military aviation, from the 1920s to the present day.

Wisconsin Central, North Central, Republic, and Northwest are well-represented with models, artwork, publications, and ephemera. We spy a model of the Fokker 28 in North Central's early 1960s scheme - perhaps from a sales visit?

VISITING THE MUSEUM: The Mitchell Gallery is located in MKE's central terminal, pre-security, open during normal airport hours daily - great for connecting with local folks and easy to access for travelers departing or arriving.



## Compass Readings

### Creating Your Legacy With the Northwest Airlines History Center —by Captain Mike Vetter

One way to create a legacy is through donations to museums and other nonprofit groups. Donors can spell out conditions about the gift, such as when it may be displayed and how, and whether it can be sold. This can be especially important if the donation is of a collection that's extremely valuable or may have an intangible significance, such as historic documents.

Givers should arrange for these donations while they are alive so both parties can work out the details, rather than hitting an institution with a surprise donation. You want them to know about it, so that they are well prepared to take receipt and properly care for the materials.

Donors can create legacies by supporting favorite causes at institutions with a lump-sum financial gift that is paid out over time. That helps remind people in the organization of their connection with the donor over the years.

Establishing a lasting gift can be a significant lift for the average person, but that's where the planning comes in. Gifts such as endowed scholarships that are meant to last 10 years or more should be seeded with at least \$100,000 with an eye to disperse 5% per year.

The typical person can use Donor-Advised Funds to save for legacy objectives and get the tax deduction right away, while others with more substantial wealth can use trusts. Tax-conscious people will benefit from early planning because they can move that money out of their estate while giving it time to grow in a tax shelter.

“The moment you know that you have enough money to do everything you want to do... you should start thinking about where you want the extra money to go.”

As always, please consult a financial advisor prior to making any legacy decisions, as each person's situation is uniquely different. We look forward to talking with you!



Cirrus promotional photo.

### Former Duluth maintenance base sold to Cirrus Aircraft

The growth of private aviation during the pandemic led to booming business for the innovative manufacturer Cirrus and its family of single-engine piston- and jet-driven aircraft, well-known for their signature emergency parachute systems.

Cirrus, currently owned by the Chinese state aircraft company AVIC, but US-directed, has been based in the Northland (Northern Wisconsin and then Duluth) since its founding in 1984, with DLH serving as its manufacturing center.

The City of Duluth had acquired the former Northwest A320 maintenance base and leased it to AAR Corp., which performed MX services to several airlines such as Air Canada and Sun Country. However, the COVID downturn in airline fortunes led AAR to close in 2019. The city's economic development authority reached an agreement with Cirrus in late August 2022 for the company to purchase the former NWA building of 189,000 sq. ft. as well as 39 acres of land for \$1 and a pledge to expand its local workforce by at least 80 more positions (currently 1,200 strong.) It's great to see the Northwest legacy enabling a new chapter in aviation!



The MX base still with NWA titles, as operations wound down. Photo courtesy MPR News.

It wasn't just passenger traffic that was booming on the Northwest system - it was cargo as well. The Boeing 707s could not keep up with freight demand on domestic and Pacific routes, and the 727 had less lift capability. New 747s would help but those would be mostly dedicated to Asian service. What NWA needed was an aircraft that could take containerized cargo and handle passenger loads somewhere between a 747 and 727, that could handle Pacific flying as well as domestic trunk routes.

### THE FIRST ERA: FINDING ITS NICHE

The McDonnell-Douglas DC-10 was further along its development path when Northwest called, and was not wedded to the Rolls-Royce RB.211 engine that the competing Lockheed TriStar would use. Douglas was amenable to hanging Pratt & Whitney JT9Ds instead of the General Electric CF6 that would power the shorter-range Series 10 that United and American were buying in bulk.

Nyrop's vision was that the JT9D would be a common-use engine in the NWA fleet, swappable across the 747-100 and DC-10 types, and realizing labor and spare parts savings. The extra performance from the engine would also allow intercontinental flying.

An order was announced in January 1968 for 14 aircraft. The first Series 40 took to the air in February 1972 and received its type certificate October 27, with deliveries to NWA starting in November. In June 1972, the company increased its order to 22 frames, anticipating high usage over the Pacific. Only Japan Air Lines would also order the Series 40 (with a different P&W JT9D subtype), while most other carriers went with the Series 30 for long-distance flying.

Flight deck crews enjoyed the DC-10's cabin width and height, and massive windows provided excellent visibility. Navigation systems were advanced for the era, and flight controls were "light," responsive, and good in turbulence. Maintenance staff were pleased with easy access and logical system layouts. Passengers enjoyed the 2-2 | 2-2 seating configuration in coach. And the DC-10 could fit most standard gates, unlike the 747.

Northwest put its first frames on Minneapolis - Milwaukee / Chicago - Florida runs in early 1973 for crew training, but later in the summer would begin using the type on the Chicago - Tokyo - Seoul route. This would not last for long, however. Range was not as good as hoped over the North Pacific and fuel stops had to be scheduled at Anchorage. Seattle-Tokyo nonstops were not feasible with load reductions needed to ensure enough fuel to make the trip. Cabin crew reported the initial galley configuration and seating layout made it harder to efficiently serve passengers on long-haul. And this was exacerbated by the aircraft's "nose-up" cruising configuration of +4 degrees (required for economic cruise - the cabin could only be level when flying at maximum speed.)

This cruise angle, coupled with the tail-engine configuration, also made for interesting weight-and-balance issues during flight when passengers would walk around and congregate near the aft lavatories and galley.

Northwest was forced to abandon its goal of flying the Series 40 to Asia, and instead concentrated its deployment on key domestic trunk routes out of Minneapolis and Chicago to Florida, the Northeast US, the Pacific Northwest, Alaska, and Hawaii, and made a virtue out of the situation, introducing the jingle and tagline "The Wide-Cabin Airline." But this came at a cost, as the airframe designed for long-haul was too heavy and inefficient on sectors like Spokane-Seattle (where it could sometimes be seen four times per day each way!)



### THE SECOND ERA: POST-MERGER POWERHOUSE

Large fleets of Boeing 757s and Airbus A320s allowed Northwest to schedule multiple runs to key domestic destinations out of the MSP and DTW hubs, solving the frequency issues that had bedeviled both NW and Republic in the mid-1980s. Without the need to keep DC-10s on shorter-haul service to supply seats, the fleet was deployed from the big hubs to California, Seattle, and Hawaii - and also on the ramp-up of service from the Boston focus city across the Atlantic, where the Series 40's range was not an issue.

NWA announced an order in March 1987 for Airbus A340 equipment that would have replaced the whole DC-10 fleet, but when that manufacturer changed its engine to the lower-power CFM56 (the "hair dryer" used on the Boeing 737-300), NW deferred its order and then cancelled it outright during the 1992 Gulf War. Instead, the company made the decision to refurbish its paid-for fleet and bring on additional Series 30 frames to supplement and replace the oldest Series 40s (the same strategy it would successfully use for the DC-9 fleet). The post-Gulf War environment, and creation of the alliance with KLM, would finally see the Ten achieve its initial deployment ambitions.

**THE THIRD ERA: GLOBAL AMBASSADOR**

KLM was also a long-time user of the DC-10, and the KL-NW joint hub at Amsterdam allowed both companies to offer a consistent product, with the first World Business Class seats being identical across the fleets. Red tailed DC-10s would open new routes from AMS into India and Florida, and from the other direction the DTW hub would use the Ten to main European destinations.

And finally the DC-10 (Series 30) returned to Asian service, operating a variety of sectors over time including Hawaii - Japan, Narita feeder routes, and regional and long haul flights from the short-lived Osaka Kansai hub.

The type continued to serve even after the September 11, 2001 disaster, as the paid-for fleet could be parked and redeployed on short notice. (Delta is using the same strategy with its Boeing 767-300s in the post-COVID environment.)

But by then the company had already made its decision as the Ten could not fly forever: an order for the (much more capable)

twin-aisle Airbus A330-300 was placed in January 2001 and deliveries began in 2003. At the same time, Northwest ordered a small fleet of Boeing 757-300 single-aisle stretch, and these would start to be delivered in 2002. Later, the Airbus order would be modified to add the shorter but longer-range A330-200 series.

With the 333 taking over more and more Atlantic flying (supplemented by long-range modified 757-200s), the 332 picking up Pacific routes, and the 753 covering high-capacity domestic sectors from Minneapolis and Detroit (even handling Hawaii-West Coast runs), the DC-10 fleet was slowly wound down and sold off, with its final years running Japan - Hawaii - Seattle / Minneapolis - Amsterdam - Mumbai. The type's final flight took place on January 7, 2007, HNL - MSP.

Northwest was the last major global carrier to fly the DC-10 in passenger service, and the routes it traced were a proud expression of NWA's worldwide ambition, skill of maintenance and scheduling, experienced crews, and tight partnership with KLM.



Captain  
Rob Stewart



Captain  
Tom Knutson



Second Officer  
Craig Woodruff



Purser  
Sallie Quan

Commemorative signed card handed out to passengers on the final flight, submitted by "thezipper" (from FlyerTalk forums).



## Where did the DC-10s fly?

The first era from the 1970s into the mid 1980s saw use on legacy trunk and short-haul routes. This is June 1, 1976:



The second era in the 1980s-1990s saw usage on the Atlantic and core hub routes. This is May 2, 1988:



The third era in the late 1990s - 2000s, saw DC-10-30s focus on Amsterdam and Pacific usage. This is Sept. 1, 2001:





N239NW lifting off from MSP, Sept, 14, 2009. Photo by author.



Two from Captain Bill Douglas - a May 1998 arrival at Minneapolis, and getting a closer look inside the nacelle during tests at Moses Lake, January 1973.

## In our online store: exclusive DC-10 gear!

This summer's limited-edition shirts, mugs, and travel gear to commemorate the 75th anniversary of trans-Pacific service were excellent sellers, and helped raise awareness of the NWAHC all over the USA and even as far as Germany! We've put those designs "in the vault" to make room for a crop of fun DC-10 themed merchandise on [shop.northwestairlineshistory.org](http://shop.northwestairlineshistory.org).

Can you spot the subtle tweak to the background of this early 1980s design that helps us foil internet forgers? We'll also intro DC-10 items using photographs and all-new artwork to give as gifts and show off your Northwest Pride this holiday season, plus new videos and logo clothing & housewares over the next month!



# Tales from the Line

## A Pilot's Viewpoint on the DC-10 —by Captain Bill Douglas

It's time to celebrate the 50<sup>th</sup> anniversary of Northwest's introduction of the DC-10-40 service way back in 1972. I was a lucky enough pilot to transition to it from another tri-jet, the Boeing 727. And what a difference that was. Just the size of the DC 10 amazed me. Why, I could even stand up in the engine fan section and the fuselage alone was wide enough to fit a pick-up truck in cross ways.

And the cockpit, man, that was big. Honestly, I saw those huge side frame cockpit windows and wondered whether or not I was going to get sun burned. That's big, but so was the passenger cabin, big enough to have five seats in the middle with two more on each side. Heck, to me, it looked like the inside of a movie theater.

But then I wanted to know things – it's sure big, but would it fly like a fighter or just another slow on the controls transport category aircraft? So, I trained to fly it in the co-pilot's seat from way out in Moses Lake, Washington and was pleasantly surprised that it was light on the controls and sensitive enough in pitch to merit being able to call it a pilot pleaser. It was definitely not an aircraft that had to be "man-handled" through the air. It was light - but sensitive on the controls- which made it simply fun to fly.

But there is a lot more to the story I have to tell, and maybe even a lot I can't tell you because I really don't want you to have to read a book. So, I'll keep my story short and I will tell you that I began flying the NWA DC-10 in 1973 as a co-pilot and last flew it in 1986 as a captain.

Now for the "bird" itself. Question is, what made our DC-10's better and maybe cheaper to fly than anyone else's version? First off and foremost were the engines. Our 10's had the same engine as our new B747's, namely the Pratt and Whitney JT9D-20. Those engines put out almost 50,000 lb. of thrust each and they could push the NWA 10's into the air like "they" were anxious to fly. And fly well they did!

Another aspect of Northwest 10's that were different than other airlines, i.e., ours were different in another important respect, bigger and more powerful engines yes, but also a third set of wheels under the belly that upped the carrying capacity at the start of a takeoff roll from 440 thousand – up to 530 thousand pounds.

Also, those extra center wheels upped the maximum gross landing weight by twelve and a half tons. Imagine then, the

extra revenue that could be earned just hauling an extra big load of cargo below.

And that's not all, because our CEO, Mr. Donald Nyrop at the time, insisted on those extra wheels, our 10's could carry an extra 33 thousand pounds of fuel. All of that extra fuel could be turned into money making, passenger pleasing, long range flights that made even the stockholders happy.

So that's the end of my story but before I go, I must tell you that the DC 10 mistakenly earned a bad reputation from a couple of horrible accidents that you, my reader, may know about. The first was the American Airlines DC 10 lost on takeoff that was blamed on the whole aircraft. Falsely so, it was a maintenance error which led to a crash, because an engine was incorrectly mounted and the loss of it inflight caused the aircraft to crash.

The second horrible DC 10 accident was the United Airlines event in Sioux City Iowa where an engine, but not the type NWA used, came apart, spraying debris causing complete loss of the hydraulic system which powered the controls and caused a failure. Only by directional manipulation by its crew of the remaining wing mounted engines and through their superior airmanship, that allowed them to crash land the aircraft. They landed and the cart wheeling aircraft with its strong center section allowed 212 survivors to live.

I am proud of the DC 10 -40 that Northwest Airlines safely used and feel privileged to have flown them. All members of the Northwest Airlines team can not only be proud of their part in making the DC 10-40 a success story for Northwest but also another success story for the Douglas Aircraft company whose aircraft transports from the DC 3 forward are deeply imbedded in the history of our nation's aviation success story.



Bill Douglas at the door of Ship 144 (N144US) for test flights at Moses Lake, Washington in January 1973.

## Special Feature Article

### Building for the Next 20 Years —by Scott Norris

*Ed. Note: For additional background on the Museum's strategic planning, please refer to these previous issues: December 2020 "Present, Tense"; June 2021 "From Hotel to Housing?"; and September 2021 "NWAHC inks contract with Access Philanthropy".*

#### WHAT IS THE "GO BIG" MUSEUM STRATEGY?

Our current small museum space draws a few hundred people per month, and our website sees 6000 - 8000 visits monthly. Yet, we can see strong demand for quality commercial aviation content - YouTube channels from London to Tokyo, Sao Paulo to Sydney are racking up thousands of views per livestream. Attendance at museums with some airliner presence is very big:

- Palm Springs Air Museum - 150,000/year
- Air Zoo in Kalamazoo - 160,000 /year
- Carolinas Av. Museum (Charlotte) - 50,000 / year
- Museum of Flight (Seattle) - 200,000 / year

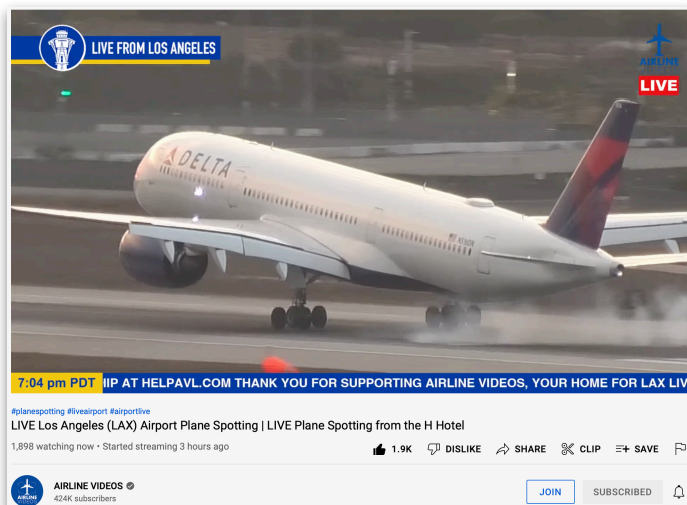
These operations have scale - a steady weekly schedule of events; constant interaction with visitors and fans; and museum space that shows off aircraft and allows for hands-on interaction and large event rentals. This brings lots of public awareness, new volunteers / staff / directors, and funding streams.

The NWAHC needs to emulate that "virtuous circle" so we can make the jump from being largely a Northwest-retiree outfit to one that has Millennials and Zoomers interpreting our history and making it relevant to future generations.

#### WHY START PLANNING FOR A MOVE RIGHT NOW?

While our museum location at the Crowne Plaza AiRE Hotel (CPAH) enjoys zero rent and a prime location on the map across from MSP Airport, and they enjoy having us on the property, there are several important factors we need to consider:

- Ongoing and future redevelopment of the CPAH - ownership has converted several floors to housing, but strong recovery of hotel bookings has led them to pause further work. However, the hotel's large multi-function rooms are being converted to co-working areas and amenity spaces for residents. So CPAH has neither strong lodging flow that brings a steady stream of visitors, nor enough permanent residents to build a pool of on-site volunteer staff...
- Inability to conduct large events, fundraisers, or even regular community-building activities at the CPAH - ownership has decided *not* to build out the third-floor sky deck / plane-spotting area, and our museum space itself (and the disjointed hallways to reach us) could not handle the flow of 60-100 guests for an evening event. The hotel's parking ramp and access into the building is awkward to say the least. CPAH also requires they perform all catering in the building.



YouTube and TikTok channels with live play-by-play coverage at airports have become very popular - Airline Videos Live @ LAX has over 460,000 subscribers!



The first several floors of rooms converted into micro-apartments have opened & were snapped up quickly.



No more room available at our archive!

- Our leased space at Flying Cloud Airport is overwhelmed - and as more retirees downsize, move away, or pass on, we expect the pace of item donations to accelerate.

There are about six years left on our lease at the CPAH, and it's no secret that hotel property ownership and franchising is turbulent. If a new ownership group should purchase the building and have different ideas for the space we occupy, we could lose our lease with only 180 days' notice.

For bringing in new visitors to an airline-themed museum, what we really need are airplanes! Try as we might, there is no way to wedge a DC-9 or even a Saab 340 into the third floor of the CPAH.

### IS FLYING CLOUD ACCESSIBLE FOR TOURISM & EDUCATION?

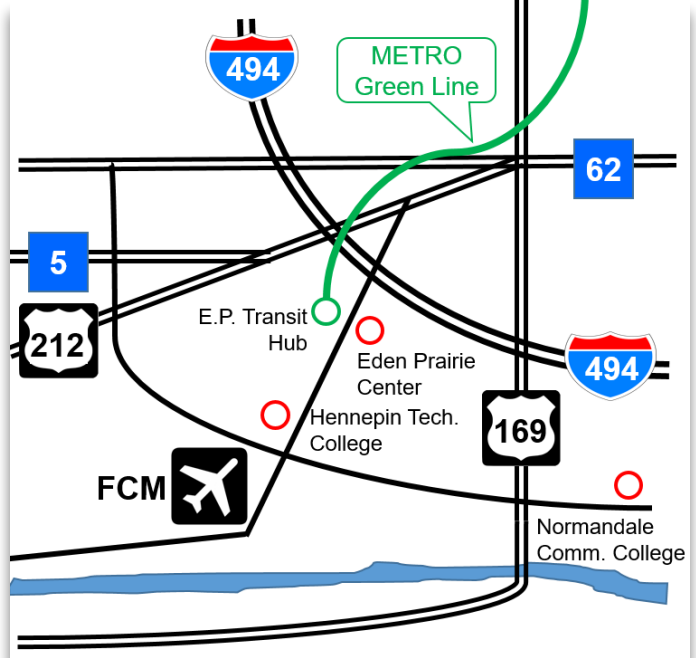
Eden Prairie is at the transportation epicenter for the fastest-growing part of the Twin Cities metro area - about 2/3 of the whole metro population can reach FCM in a 45-minute drive. A new light-rail line to Downtown Minneapolis is opening in 2027 and the local transit operator wants to run connecting shuttles from FCM. MSP International Airport is only a 20-minute drive along the I-494 strip where many hotels and the Mall of America are situated. Substantial hotel development is also taking place around the Eden Prairie Center and transit hub.

Nearby tourism attractions include Paisley Park, Mystic Lake Casino, Valleyfair, Canterbury Park, the Renaissance Festival, and dozens of regional parks, lakes, and trails. A new NWAHC Museum would be a natural complement to any of these activities, as well as another jewel in the Twin Cities' collection of museums.

Local residents use ballfields and soccer pitches on and near airport property, and the Staring Lake Park across Pioneer Trail has a small event center that would complement our museum.

There are seven large public K-12 school districts within 20 minutes, and the local Eden Prairie district even has an aviation program! Two junior / technical colleges are moments away, and the aviation program at Minnesota State - Mankato is only an hour from FCM. The University of Minnesota - Twin Cities and Minneapolis Community & Technical College will have easy access with the Green Line rail link. FCM itself hosts four flight training schools and one avionics & powerplant training center.

The planespotter / avgeek community in the Twin Cities already knows FCM has photo-friendly staff and viewpoints and our museum would ideally sit at one of the prime spotting locations. FCM is frequented by corporate jets and vintage warbirds, and has over 130,000 operations annually. It hosts the well-attended annual Girls in Aviation Day and AirExpo events, and the airport's main runway, 28L-10R, is 5000' long - easily capable of handling ferry flights of any single-aisle jetliner or commuter airliner that would visit.



Freeways and transit converge on Flying Cloud's doorstep, and key education partners are minutes away.



Eric Gilles, Airport Planner with the MAC at far left, and Blaine Peterson, FCM Manager, center left, discuss the museum model with your author at far right.

# The Vision for a Permanent Museum



## A SPACE FOR EDUCATION, ENTERTAINMENT, AND EVENTS

Starting with a clean sheet of paper and not having to deal with a legacy building gives us the ability to design around the functions we want a new museum to perform.

After a number of conversations with NWAHC board members, MAC representatives, friends, coworkers, and families - and after several iterations of scale models, we've come to this example of key elements we want to incorporate in a permanent home.

- **Size** - 125 to 150,000 square feet, about what your local SuperTarget measures. Part of this is hangar space tall enough to enclose a modern single-aisle jetliner such as an Airbus A320. Construction would be similar to a big-box store; materials and labor are conventional.
- **Complete aircraft** - we want to collect, preserve, and present several airliners that represent key eras in air transportation, that would have flown in the Northland. These would be parked permanently but would be used in aviation career training. An example assortment would include a Waco biplane, Douglas DC-3, Beech 99, Saab 340, Canadair CRJ, and Airbus A320 - the mix will depend on what is available (SF3, CRJ, and 320 types will be going to boneyards soon so may be easy to obtain.)
- **Aircraft components & ground equipment** - we would also want to display actual engines (Wasps to PW4000s, for instance). Stinar Ground Equipment started in MSP and we'd want to show their loaders and catering trucks. Every element "below the wing" is desired to show visitors the full airport ramp experience. We won't have room for a whole 747, but a vertical tail would be a powerful guardian!
- **Simulators and cabins** - We may be able to obtain the full forward flight deck of an NWA Stratocruiser currently sitting idle in San Diego. The same storage area might also turn over a 727 cockpit section and a full A320/A319 simulator - needing some work but could anchor a "flight experience" 727 cabin mockup and a flight simulator "e-sports" arena - both of which would appeal to broader audiences and help us program activities and rental revenue on a daily basis!



David Lane is ready to donate this Stratocruiser flight deck as soon as we have a home to house it!



Other potential transfers if we can find the space!



- **Event Space** - Not just for weddings, receptions, and business conferences, but also for community concerts and performances. (One could imagine the History Theatre running “Stewardess!” here.) Rental revenue will be a key component of our operating funds - and these spaces will allow the NWAHC to perform galas and fundraisers, too.
- **Catering and Restaurant Area** - expanding on St. Paul’s Holman’s Table idea, providing an all-day gathering spot for coffee and meals to both aviation workers and the general community, with plane-spotting just outside the door!
- **Aviation Retail Store** - allowing us to expand our themed product offerings and merge our online and in-person sales and inventories - the Pan Am entities have done a great job with their merchandising & we want to emulate them.
- **Classrooms and Maker Spaces** - on both floors, to facilitate instruction from lecture to hands-on repair and fabrication. This also includes full audio-visual studio and production facilities to supplement events as well as produce NWAHC videos and oral histories. Classroom space can also be marketed as “SkyBoxes” for additional rental income, as well.
- **Museum Library, Administration, and Archive space** - including a photo studio, scanning equipment, and work stations for researchers. We’d like to organize this similar to how the SFO Airport Museum operates. This will also help us preserve larger artifacts than we presently can handle.
- **Exhibit space** - a full floor of dioramas and models, uniforms and tools, hands-on demonstrations (like baggage handling systems and safety systems), interactive video and live ATC. The MN Aviation Hall of Fame would live here, as well as exhibits showing how our airline hub impacted Minnesota’s business growth, social / population makeup, medical innovation, and arts and education sectors.

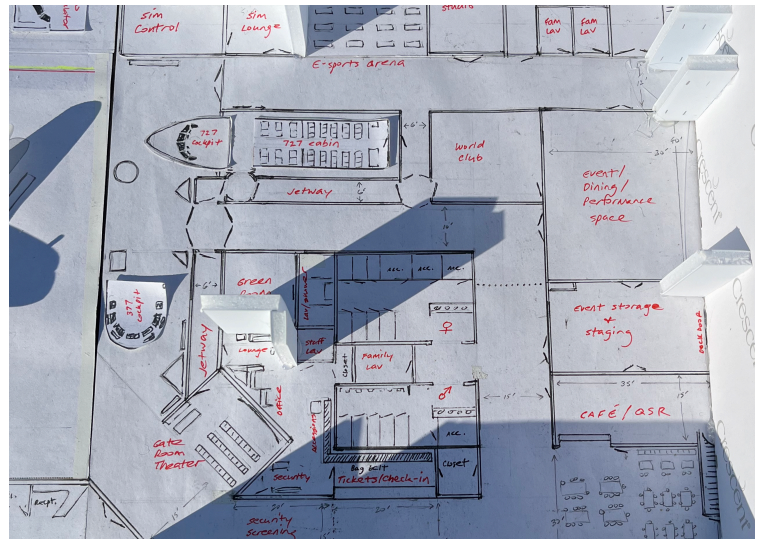
These elements combine to form a vital social & educational hub for the whole Upper Midwest, a tourism multiplier, and an institution that will preserve the memories of the Red Tail for many generations to come.



Come see our model at the MSP Airliner Show, October 8!

#### WHAT IS THE TIMELINE, IF ALL GOES IDEALLY?

- Now - Dec 2023: FCM Long-Term Planning process. We may have a good idea about space & siting by Fall 2023.
- Mid to end 2023: detailed architecture & cost estimates. Work out long-term lease structure with MAC.
- Late 2023 - early 2025: capital fundraising campaign. Building may be in the \$15 million range - then aircraft, exhibits, and equipment - perhaps \$25MM?
- Mid 2025: Final engineering & contracting
- Late 2025: Groundbreaking & asset acquisitions in earnest; core department staff hires
- Late 2026: First portions open in time for Northwest’s 100th anniversary - majority of museum operating mid 2027





Northwest Airlines History Center, Inc.  
Archives and Administration Office  
10100 Flying Cloud Drive, Suite A-306  
Eden Prairie, MN 55347 USA

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Record attendance and vendor presence last year - the Twin Cities' top social event for airline staff, retirees, and enthusiasts! Come see our future museum dream model! Be sure to mark your calendars & come early!

## The 2022 Minneapolis-St. Paul Aviation Collectible Sale & Get-Together. Jet-powered excitement!

*See old pals  
once again!*

*And make  
new friends!*

**Saturday, October 8, 2022, 9 am to 4 pm**

At the Best Western Plus Hotel in Bloomington, MN, across from the Mall of America.  
Admission only \$5 (kids under 12 free); proceeds support the Northwest Airlines History Center.  
Free parking. Free shuttle ride from MSP Airport. Or use METRO Blue or Red Lines to the MOA.  
Hotel reservations (952) 854-8200. Table space (612) 386-5080 or [bill@airlineposters.com](mailto:bill@airlineposters.com).