

The Trailing Edge

September 2025

Flying to Santa Catalina Island



Whatsa Santa Catalina Island?

Back in 1988, I bought my first MS-DOS computer. Prior to that I had a CP/M Kaypro 4 that I bought in January 1984 to help me get through grad school. This was before the IBM PC had really caught on and the whole “business” computer scene was still shaking out. The 1988 computer was a **SCREAMING** IBM PS/2 Model 80 with the hyper-fast 16 MHz 80386 processor. (I know that kind of speed is exciting just to think about, but try to calm down.) It was such a leap up from previous computers that one of my colleagues dubbed it the “Micro-Mini-Mainframe”. (It was also the most I ever paid for a computer, even in non-inflation adjusted prices.)

Since the Model 80 was sold for business use, it didn’t come with a sound card. That was for people who used their computers for meaningless activities like playing games, and we can’t have that in the office! Also, the PS/2 line came with a new, advanced bus structure called the “Micro Channel” bus that would revolutionize computing. (What’s that? You’ve never heard of it? Probably because IBM kept it proprietary and no one else could use it. It was eventually superseded by the PCI bus that we still use in some fashion.) The significance of this was that I couldn’t use any of the sound cards available on the market for the AT bus. Eventually, Creative Labs produced a sound card for the Micro Channel bus and I snapped one up.

Why does a sound card matter to our story? Besides allowing sound output and input, the sound card also came with a “game port” which allowed connecting a joy stick as an input device.

Now that I could use a joy stick, I could purchase and run Microsoft Flight Simulator. I had this by 1989 when I started at the USAF Test Pilot School, and even designed and built my own throttle quadrant and rudder pedals for it (<http://caa1000.org/related/pcsim/pc2.htm>). Running MS Flight Simulator scratched that itch for learning to fly for a while. At this point, I was still convinced from my experience in 1980 that learning to fly was too expensive. Things would change by 1991 and I was able to get my Private Pilot certificate.

Microsoft Flight Simulator had very few airports available right out of the box. You could fly from and around Chicago’s Meigs Field (which is something you can’t do anymore “in real life”), and this was one of the few locations with any significant “scenery”. Another company, SubLogic, sold scenery packs that could be used as add-ins to

provide more airports to fly to. The name sort of over-sold the product, as the “scenery” consisted of black runways for most of the existing public-use airports on a green background where there was land and blue background for water features. Even so, when looking for interesting places to fly around my location at Edwards AFB, I saw that there was an airport on Santa Catalina Island just off the coast of Los Angeles in the Pacific Ocean. For some reason I found this interesting, and would frequently fly my simulated Cessna 182 into the airport on Catalina Island.

Not So Fast, Moosebreath!

When I did finally get my Private Pilot certificate, I thought about reproducing what I had done on Microsoft Flight Simulator for real by flying to Catalina Island. However, no other pilots I talked to seemed enthusiastic about that idea. Those who had tried it talked about steep drop-offs at each end of the runway, large downdrafts on final, and runway visual illusions. According to them, when touching down on the runway, the runway appears very short, and knowing that the other end drops over a cliff, you really honk on the brakes, screeching to a halt. As you come to a stop, you reach the apex of the non-level runway, revealing the other half of the runway that you could have used if only you had faith. As it turns out, all of these assertions are true, though the hazards presented by them were significantly overrated.

Another obvious hazard was the 18 nautical miles of cold salt water from the Pacific coast to the landfall at Catalina Island. Since the early twentieth century, pilots have worried about what they would do if their aircraft powerplant should decide to cease its earthly toil. Many times I have been flying over mountainous terrain and briefly thought about what I would do if the engine quit. The answer is never pretty, but at least if I survived the landing I would be on dry ground with all of the survival issues that go with that. A ditching with a fixed landing gear would probably result in flipping over, but assuming I survived and got out, I would need some sort of personal floatation device (PFD) to keep my head above water for any reasonable period of time.

In 2023, Mujahid Abdulrahim came to work at USAF TPS for the summer. Mujahid had flown to Catalina Island many times, and spoke of it like it wasn’t that big of a deal. He offered to fly me out to Catalina to show me how he did it. I thought that would be a great way to see it for myself and make my own decisions about the risk level. For various reasons, we couldn’t get the schedule to work in 2023 or 2024, but we finally found a way to make it happen in 2025.

Personal Floatation Devices

If I was going to fly to Catalina, I needed to address the PFD issue. I’m a big fan of PFDs, having a long history with them. The Air Force requires their use whenever flying over water, and we get to practice using them during water survival training. Back in the ‘70s, I spent a lot of time in Boy Scouts participating in water activities, including rowing, canoeing, and small boat sailing. For these activities, active wearing of PFDs was absolutely mandatory. For these activities, the PFDs that were provided were of the yoke variety that passed behind the neck and down over the chest. This style had the important property that if the wearer were face down in the water, the buoyancy of the PFD would flip the wearer over such that the face was out of the water. This worked even if the wearer was unconscious. We tried this multiple times while simulating unconsciousness, and it worked quickly every time. Older versions of these PFDs used heavy plastic bags stuffed with kapok (a cotton-like plant fibre) for floatation. Of course, these worked very well as long as the plastic bag didn’t get punctured. Later versions used blocks of foam for floatation, which solved the puncture problem.



While the yoke type PFD is cheap and effective, it can become uncomfortable after long periods of use. Add in a little bit of wetness and it can rapidly cause chafing on the neck. It is important that a PFD not be uncomfortable when not in the water, because a PFD that is uncomfortable to wear is a PFD that won't be worn, and thus cannot serve its purpose when needed.

In 1975, eight of us from our scout troop went on a canoe trek from Charles L. Sommers Canoe Base in Ely Minnesota. This trek lasted about 10 days and traveled through the Boundary Waters Canoe Area and into Canada through Quetico Provincial Park. With that much time on the water, it was critical to have PFDs that were comfortable enough for continuous wear. For that we had PFDs that were shaped more like a vest, with the floatation around the chest and back instead of around the neck. While this style would not guarantee floating an unconscious wearer face up, the comfort for continuous wear was far more significant for risk reduction.



The PFDs mentioned so far work well for boating activities. The PFDs provide instant buoyancy with no action required by the wearer, which is great if you fall out of the canoe. In the cockpit, the bulk of the buoyancy material can take up a lot of space in an already space constrained cockpit. On cruise ships, PFDs of the foam block variety are provided as they are cheaper, more robust, and storage volume is available. PFDs on commercial airliners, when provided, are of the inflatable type, stored uninflated under your seat. In World War II, each Navy pilot wore an inflatable life vest referred to as a "Mae West", which, when inflated, reminded pilots of the popular movie

star's...uh...female qualities. Modern Air Force pilots wear inflatable “water wings” or “horse collar” PFDs when flying over water.

Besides storage space, PFDs used in aircraft are inflatable for another important reason. When ditching, an airplane can easily flip upside down and the cockpit can quickly flood with water. Escape may require swimming downward to get out to safety, and extra floatation would make this difficult. Additionally, the extra bulk of the PFD could make it difficult or impossible to pass through a small opening. This is why you are instructed not to inflate your PFD until you are outside of the aircraft. This is also why it is important when considering a PFD for aviation use that it be manually inflated (either by pulling a string or blowing in a tube). A PFD with automatic inflation could inflate inside a flooding cockpit and create all of the problems mentioned previously.

Every two years I renew my flight instructor certificate using the AOPA Flight Instructor Refresher Course. One of the electives is about Seaplane Safety. In the videos, the seaplane pilots are wearing something that looks like a long scarf. This is an inflatable PFD that is folded up in a nylon casing. This keeps the inflatable bladder protected and out of the way inside the cockpit.

The bladder is inflated by jerking the yellow handle down (the handle actually has the word “JERK” molded in to it in two places) which pierces a CO₂ cylinder, releasing the gas into the bladder. The increasing pressure rips open the Velcro holding the nylon casing in place, allowing the bladder to inflate.



The bladder also has an oral inflation tube, allowing you to repressurize the bladder if some of the gas leaks out. It also comes equipped with reflective bands and a whistle that you can blow into to entertain yourself with a monotonous symphony. Rumor has it that blowing a Morse Code “O” (three long blasts in succession, “— — —”) repeatedly may invite rescue crews to come join your party.

Searching for such a PFD through the usual aviation sources, such as Aircraft Spruce, led to the Revere Survival Comfort Max PFD, available in a spectrum of colors, as long as your spectrum is limited to red and blue. This seems to be the de facto PFD of this type, available from all sorts of aviation suppliers, and also available from all sorts of boating suppliers as well. A look at the Revere Survival website (<https://reveresurvival.com/>) shows information

about their products but no way to order anything, implying they only sell through dealers and not direct. When looking to purchase one, I eventually concluded that the sales volume on these items is low enough that none of the suppliers actually keep any items in stock, instead just arranging drop shipping from the manufacturer to the customer. I came to this conclusion because every supplier I tried in July was “out of stock” and all of them expected them to be back in stock in October. I finally stumbled across one supplier that told me the manufacturer had one available, but it was \$50 more because it was a model with additional D-rings in the harness for tying in to a sailboat. That supplier told me straight up that the product would be drop shipped from the manufacturer. I ordered it because I needed it for our planned flight in August.

After the flight, I decided to order a second PFD so I could take a passenger in the future. Since I could wait for a backorder on this one, I ordered one through Aircraft Spruce for a list price of \$131.75.

When ordering an inflatable PFD, I was concerned about servicing and maintenance. Reading through the owner’s manual, I found it interesting that all references to using the PFD discussed boating applications. However, the Revere Survival website clearly represents this PFD as being suitable for aviation use, so what we are doing is not considered an “off label” use.

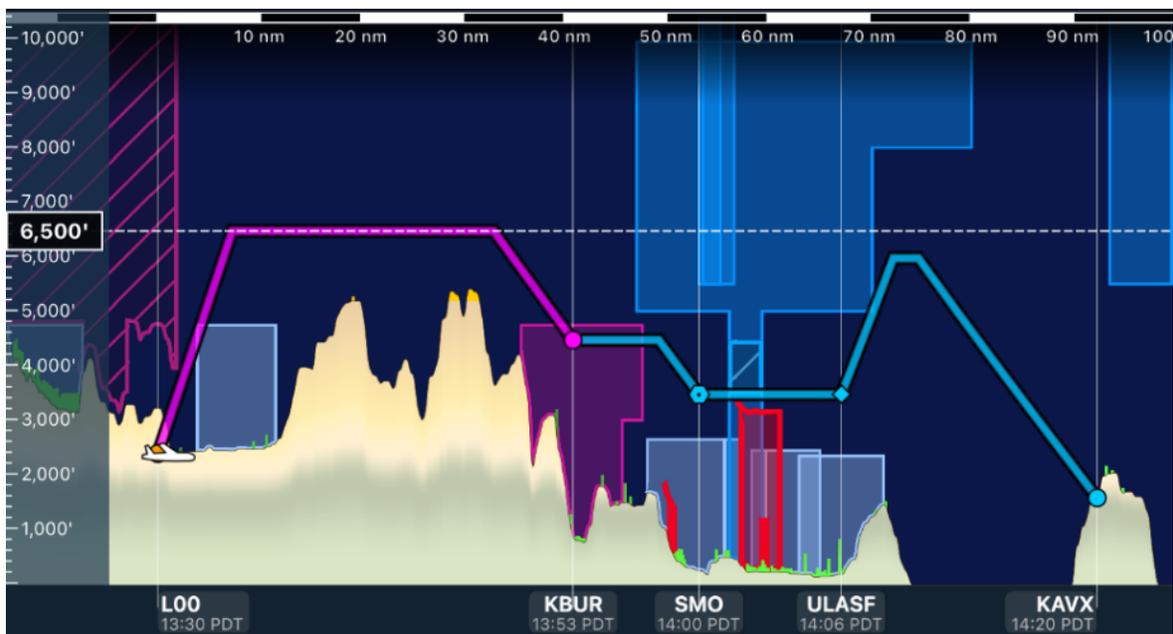
For servicing, the manual recommends to open the outer cover by manually separating the Velcro and unfolding the yellow bladder. Inspect the bladder for any obvious damage. Inflate the bladder using the oral inflation tube, then close it off. Let the bladder sit for 16 hours, then check the inflation pressure. There should be no noticeable change in the pressure. If all is well, deflate the bladder. The manual gives instructions on how to fold the bladder back into the cover.

If inflating the bladder with the CO₂ cartridge, expect that the bladder will lose some pressure after a few hours. Apparently, the bladder material is more permeable to CO₂ than it is to O₂ or N₂, the major constituents of air. After using the CO₂ cartridge, a “Revere PFD Re-Arming Kit” can be ordered (Aircraft Spruce, \$29.75) which includes a fresh cartridge.

Flight Planning

Flying from Rosamond Skypark (L00) to Catalina Airport (KAVX) poses multiple challenges with regards to airspace. The varying airspace requirements are worthy of any FAA Practical Test. One issue is that a direct route from L00 to KAVX takes you directly over KLAX, and certainly through the KLAX Class B airspace at any altitude below 10,000 feet, the top of the Class B. One option is to simply take off from L00 and immediately climb to 10,500 feet and fly over the Class B. While the Bearhawk has the performance to climb to 10,500 feet, the top of the Los Angeles Class B airspace extends south to within 12 nautical miles of KAVX, which would lead to a very steep, probably circling descent, meaning that this plan is not very practical, especially for the circling climb to 11,500 feet over the airport for the return trip.

A better approach is to work with the system and talk to ATC. A suggested route is shown in the following Foreflight screen shots.



Our adventure starts by taking off from Rosamond Skypark (L00) and heading toward Burbank (KBUR). The local terrain has helpfully supplied several very large rocks (hills, mountains) along your route of flight, so you will need to climb to 6500 feet MSL to miss the large rocks. While you are climbing, take the time to dial up 124.55 and check in with Joshua Approach. They will be much easier to cold call than SoCal Approach will be. Tell them your location, your destination is Catalina Island, and that you plan to fly the Special Flight Rules Area over KLAX. Hopefully they will pass this information on to SoCal Approach so you won't have to go through all of that again.

As you approach the final ridge into the LA basin, you will probably be handed off to SoCal Approach. You need to descend because you will need to be at 3500 feet MSL for the Los Angeles Special Flight Rules Area. Start a VFR descent to reach 4500 feet MSL by the time you overfly KBUR. The top of the Burbank Class C airspace is at 4800 feet MSL, so you will be 300 feet into the top of the Class C, but that's okay because you are already talking to ATC.

Turn toward the Santa Monica VOR (SMO) and continue your descent to reach 3500 feet MSL before reaching SMO. After clearing the Burbank Class C airspace, ask ATC to switch to the Special Flight Rules Area frequency.

Following is the official description of the Los Angeles Special Flight Rules Area, as shown on the Los Angeles Terminal Area Chart (TAC). Make sure you have a current version of the Los Angeles TAC on board, even if it is in Foreflight.

Approaching SMO, switch to the Special Flight Rules Area frequency of 128.55. Set your transponder to 1201. Turn on your strobes, position lights, and landing lights. Turn left to intercept the SMO 132° radial outbound. Maintain 3500 feet MSL and an indicated airspeed of less than 140 KIAS. Follow the SMO 132° radial outbound. If you are looking out the window, your path will take you about 2 nautical miles east of Torrance Zamperini Field (KTOA). Announce yourself as you pass over Manchester Blvd. Look down and enjoy the view of KLAX from above. Announce yourself again as you pass over Imperial Highway.

At this point, you are through the Special Flight Rules Area, but don't get excited about climbing yet. The Class B airspace is at 5000 feet MSL above you, and there is opposite direction traffic at 4500 feet MSL. Change your transponder back to 1200.

As you pass KTOA, turn toward Catalina Island (KAVX), and start a climb to 6500 feet MSL. Shortly after KTOA the floor of the Class B airspace changes from 5000 feet MSL to 8000 feet MSL. This part of the Class B airspace extends over the water about halfway to Catalina, so don't go crazy trying to gain "insurance" altitude.

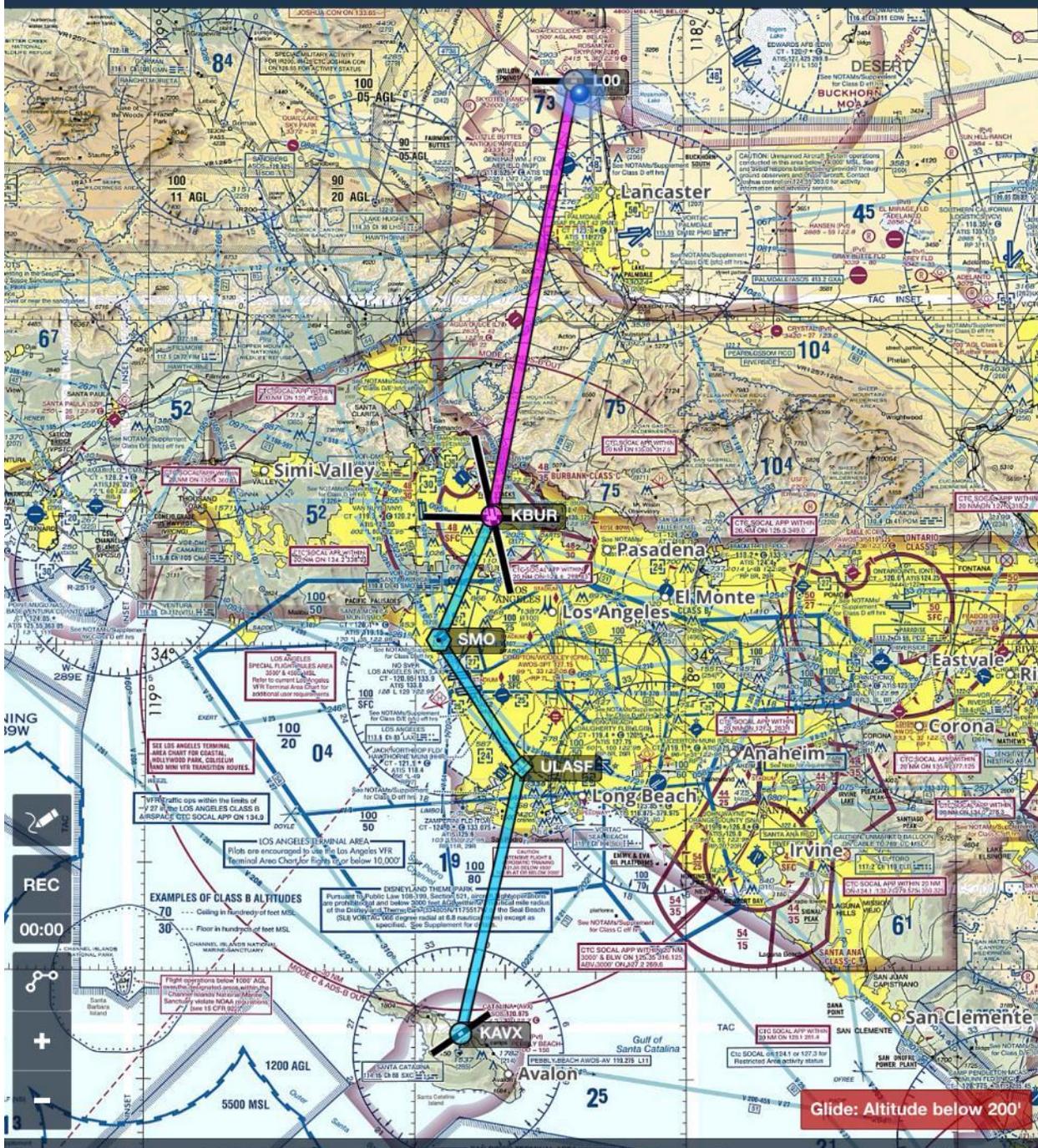
To understand how much altitude we need, let's do some recreational maths. The overwater distance from the shoreline to the shore of Catalina Island is 18 nautical miles, so we will never be more than 9 nautical miles away from shore. Nine nautical miles (6076 feet/nm) is 54,684 feet. The maximum glide ratio of the Bearhawk is 11.4 at 83 KIAS. Dividing 54,684 feet by 11.4 gives a minimum altitude at the midpoint of 4797 feet MSL. Thus, a target of 6500 feet MSL is reasonable and sufficient.

At the appropriate point, start a normal descent toward the airport.

For the return trip, after takeoff, take a trip around the pattern while climbing, much like we do for glider launches. Continue climbing toward 6500 feet MSL as you head back toward KTOA. When landfall is assured, start descending toward 4500 feet MSL. You'll need to be below 5000 feet MSL before you get to KTOA to stay out of the Class B airspace. Set your transponder to 1201. Pick up the SMO 132° radial and turn inbound on a course of 312°. Maintain 4500 feet MSL and announce yourself passing over Imperial Highway and Manchester Blvd.

After crossing Manchester Blvd, change your transponder back to 1200. Contact SoCal Approach on the frequency you last talked to them. You'll need to talk to SoCal because your climb back to 6500 feet to clear the mountains will probably pass through the Burbank Class C airspace. Start your climb after you are out from under the Class B airspace.

Once you are over the mountains and back in the Antelope Valley, you should be able to get yourself home. Remember the top of the Fox Class D airspace is 4800 feet MSL, so either stay above it, go around it, or contact Fox tower before entering the Class D airspace.



Distance to Next	ETA Dest (PDT) 2	Groundspeed	GPS Altitude	Descent to Dest	Accuracy
40 nm	-----	0 kts	2,366'	0 fpm	6 m

Making the Flight

After all of the things I had heard about flying in to Catalina, I wanted to be able to watch someone else fly there and land who had done it before. As mentioned earlier, that pilot would be Mujahid Abdulrahim of the University of Missouri at Kansas City. He has spent the last several summers here at Edwards AFB working on various projects. Mujahid would have fit in perfectly as a *Project Police Officer* in EAA Chapter 1000. He even flies a Thorp S-18 that was built by Hal Underwood of our sister chapter, EAA Chapter 49. We would have made him commander of an EAA Chapter 1000 Detachment in Kansas City except for one minor problem—he didn't show up out here until after the chapter had shuttered.

Since I wanted to see someone else land at Catalina, that meant we couldn't take the Bearhawk, since I haven't checked anyone else out to land it. Thus, Mujahid provided a rental airplane, a 1962 Cessna 172D.



We departed Rosamond Skypark (L00) around 0930 on 9 August. We climbed out and followed the plan as stated down to Burbank. Mujahid is a flight instructor, and like all flight instructors, he seems to be most comfortable while watching someone else fly. That is to say he twisted my arm until he convinced me to risk embarrassing myself as the “sole manipulator of the controls”.

One other given when flying with Mujahid is that the flight will be documented with plenty of photographs. This includes mandatory selfies of the crew in flight. Here we are as I model the latest in aviation PFDs, all while trying to add to my 7.4 hours of flying Cessna 172s without embarrassing myself.



It turns out that if you delay your turn from Burbank to Santa Monica by flying south one more ridge, you can fly by the Hollywood sign. The bonus is that for one brief moment you know exactly where you are!



We passed through the Los Angeles Special Flight Rules Area with no drama, and soon we were heading out to sea. Mujahid, always the gracious host, was concerned that I might get nervous flying over the open ocean. As such, he arranged for a marine layer undercast that totally obscured the ocean from the coast at Torrance all of the way out to Santa Catalina Island. If you can't see the ocean, there is no reason to get nervous about flying over it.



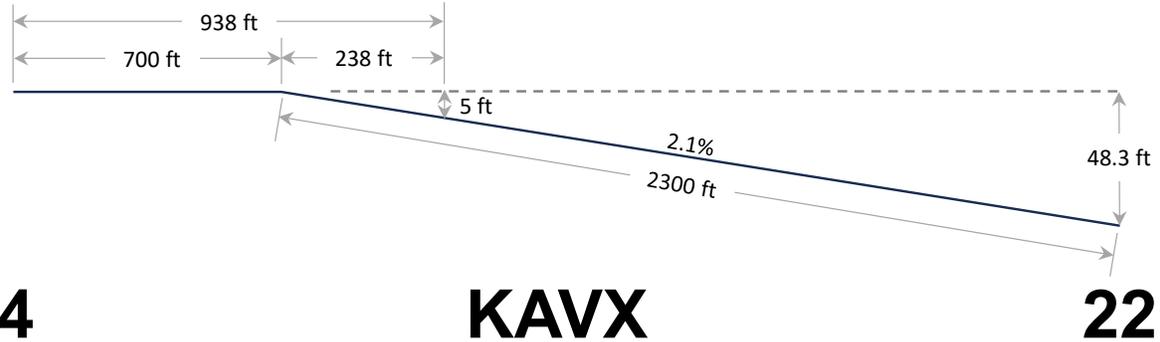
Because the Catalina Airport is at an elevation of 1602 feet MSL, the airport was above the marine layer in glorious VMC.

“The single 3,000-foot-long runway was originally constructed in 1941 by blasting and leveling two adjacent peaks, then using the resulting debris to fill in the gaps. In early 2019, the aging runway was repaired through a unique partnership between the Conservancy and the Department of Defense as part of an Innovative Readiness Training (IRT) project. Now dubbed ACE Clearwater Airfield, the repaired runway provides a smoother, safer experience for all of those who fly in to Airport in the Sky.” (<https://catalinaconservancy.org/recreation/airport-in-the-sky/>)

Approaching the island, the airport appears as an aircraft carrier sailing across the top of the island. The runway is 3000 feet long, with steep drop offs at both ends. Check the ASOS on 120.675 for a weather report. The wind is generally from the west, favoring Runway 22. Fly a right hand pattern to line up with the runway.



According to a remark in the Chart Supplement, “Rwy 04 Final 2300 Ft Steep 2.1% Downslope; Rwy 22 Upslope Preferred Ldg.” If we assume the first 700 feet of Runway 4 is level, and the remaining 2300 feet have a constant slope of 2.1%, then the runway profile would look something like this (slope exaggerated for clarity).



Of note is that the approach end of 22 is 48.3 feet below the apex. Assuming the pilot’s eyeline is 5 feet AGL, the pilot’s eyeline is 43 feet below the apex at touchdown. As a result, the runway appears 700 feet shorter than it actually is. Because the runway is on top of a mountain, all that is visible past the apex is sky. Many a pilot, remembering the steep drop off at the other end of the runway, panics and stomps on the brakes, leaving visible skid marks. When it looks like there is only 238 feet of runway left, the pilot’s eyeline finally gets high enough to see the real end of the runway, 938 feet away.

Here we are lining up on finals for runway 22. The far end of the runway is still visible.



On finals, with horizon still visible.



On finals as the horizon is about to disappear. About this point, be ready on the throttle, as the west wind, blowing up the hill and over the runway, gets to this end of the runway and starts to flow downward back toward its original altitude. This downdraft can be unsettling as you are approaching a wall of terra firma, but is quite manageable with some extra power if you are anticipating it.



The horizon has just met the far end of the runway, which mean the airplane is about 40 feet above the threshold. After this point, all that will be visible beyond the runway is sky.



About to touchdown on Runway 22. Only sky is visible beyond the end of the runway.



Rolling out on the runway, with the apex approaching.



Approaching the next-to-last taxiway as the true end of the runway comes into view.



There are no formal tiedown spots with anchors and everything. Parking is pretty much limited to pushing your airplane into the dirt off the edge of the apron and chocking the wheels.



The main facilities in the area are southeast of the runway. The main building has this tower growing out of the top.



Administrivia

After landing, all pilots need to report to the second floor of the “tower” to check in and pay the landing fee. Paying a landing fee is quite reasonable, since the airport doesn’t sell fuel or offer any other money making services, so they need to raise money for airport maintenance somehow. If you are surprised by a landing fee, that means you didn’t read the notes in the Chart Supplement before taking off. The landing fee is \$38 a day for piston single. For that, you can takeoff and land as many times as you want on that day, but no touch and goes. Only full stop/taxi backs allowed.

If you plan to fly to Catalina Island a bunch, you can pay \$50 to join the Catalina Island Conservancy and then join the Catalina Airport Aero Club by paying the \$175 annual landing fee. If you land at the airport on at least 6 days within the year you will come out ahead.

The airport, and therefore the runway, is only open from 0800 to 1700 daily. Don’t try to get out of the landing fee by landing outside of these hours, as security cameras will be watching you and your N-number will be added to the board of unwelcome airplanes. Yes, they actually have that on public display for your humiliation.

I was surprised by the amount of activity there on the day we flew in, with lots of airplanes coming and going. The airport restaurant had the usual grill-type menu, including a Buffalo Burger that was delicious. Unlike Buffalo Wings which are just spicy chicken, these are burger patties of bison meat. They also sell “Killer Cookies” which you can get one per day for free if you flash them your Catalina Airport Aero Club membership card. You can see the rest of their menu at <https://theairportintheskyrestaurant.com/menu> .

Airport Loop Trail

Besides watching airplanes and eating at the restaurant, another fun activity you can participate in is hiking the Airport Loop Trail. The trail is a complete loop around the airport and is 2.1 miles in length (that’s 1.8 nautical miles for you pilots). In that distance it descends 282 feet of elevation, only to climb back up that same 282 feet to get you back to where you started. If you consider a building “story” to be about 10 feet high, that’s walking down the stairs of a 28 story building just to turn around and climb back up them. Fortunately the slope is a lot less than the typical staircase.

According to the Catalina Conservancy web site, you should apply for a complementary hiking permit. It’s free, and seems to serve the same purpose as filing a flight plan. Presumably if you don’t report in after completing your hike, they’ll send someone out to look for you.

You should know that Catalina Island has a herd of free-roaming bison, and there are no fences between them and you. Take note that bison weigh about 9 times as much as you, and they aren't very happy that you are roaming in their area, especially if you had the Buffalo Burger for lunch. Back in 2023, Mujahid was videoing a bison while walking this trail when the bison, who apparently had a low opinion of paparazzi, charged him and sent him screaming like a schoolgirl. Clearly Mujahid had failed to read this very clear and very helpful sign.



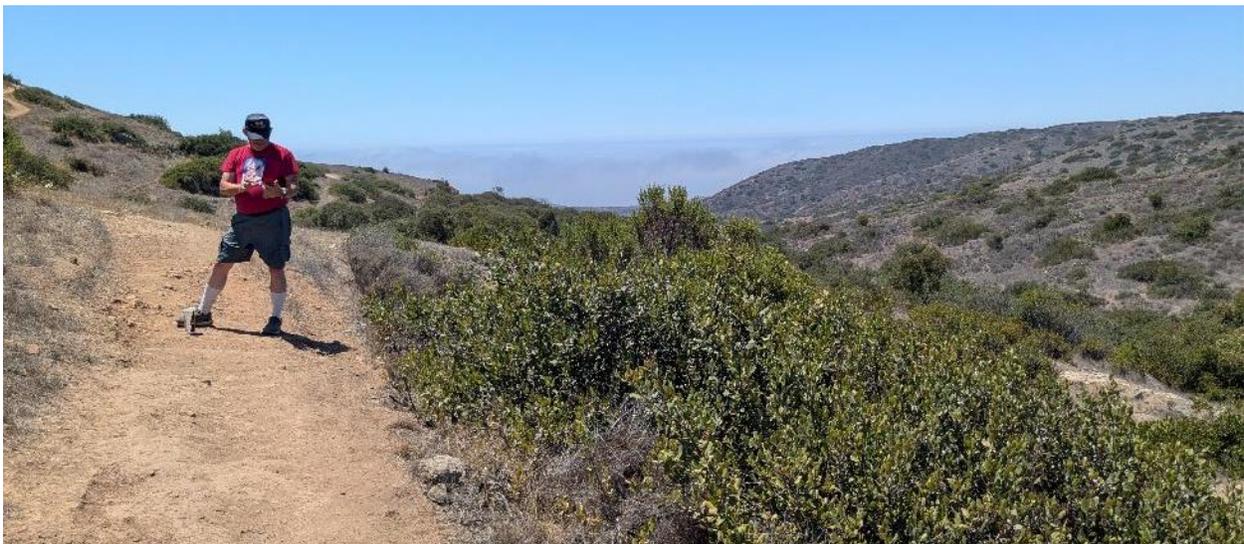
There was plenty of Prickly Pear cactus (cacti?) along the trail, making this old Texas boy feel right at home.



This is the location where Mujahid was charged by the bison. Fortunately for me, the bison were hunting hikers at a different location on this day. The bison charge was really a funny story, especially because no one was hurt. We think that story should be published here on the *Trailing Edge*. Send your e-mails to Evil Editor Zurg (eez@pobox.com) persuading and cajoling Mujahid to tell his story.



The story of the previous picture was so good that I had to immediately text the picture to a mutual friend of ours. Surprisingly, even though this looks like wilderness, the cell signal strength was quite reasonable here near the airport.



A look to the North from the trail over a nearby road out to the Pacific Ocean. Lots of water and lots of salt.



Coming around the approach end of Runway 22, you are still about 20 to 30 feet below the threshold, which makes a great place to watch airplanes coming in to land right over your head.



Departure

The topography of Catalina Airport lets you do something you can't do many places. After liftoff, climb to a comfortable altitude of about 10 feet above the runway and level off. As you fly past the end of the runway, the terrain rapidly drops away from you, and in almost no time you are several hundred feet above the ground.

- Russ Erb