

FLYING

to

Catalina Island



**A Pilot's Information Guide
For Avalon/Catalina Airport**

By Marc C. Lee

DISCLAIMER

This document is informational only and cannot be considered flight instruction. None of the diagrams or maps can be used for navigational purposes and should not be used in a cockpit. The information presented herein is only for reference, to be used in conjunction with flight instruction from a qualified and certified flight instructor (CFI).

Any pilot flying to Catalina Island for the first time should seek out instruction from a qualified CFI experienced with Catalina Island and its unique configuration. No pilot should attempt landing at Catalina without a thorough Catalina check-out from a qualified CFI. Nothing in this document may be used as a substitute for official flight instruction, and it may not be construed as flight instruction.

HOW TO FLY TO CATALINA ISLAND

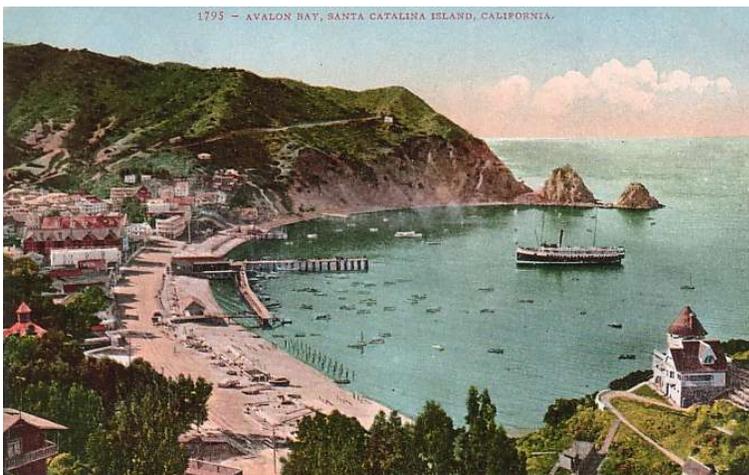
About The Author

Marc C. Lee is an Instrument, Sea-plane and Commercial rated pilot from Southern California. His passion is vintage tailwheel aircraft, and he owns a 1976 Great Lakes 2T-1A-2 biplane. Marc has been flying since he earned his pilot's license at 17 years old, and is a Contributing Editor at Plane & Pilot Magazine, where he has had more than 150 articles published since 2006. Marc also holds an Advanced Ground Instructor (AGI) certificate and teaches aviation at a Southern California college. He is a member of the Aircraft Owners and Pilots Association (AOPA), Experimental Aircraft Association (EAA), and Southern California Pilots Association (SCPA). A veteran of over 75 Catalina crossings, he is a frequent visitor to the Island.

Introduction

Santa Catalina Island is about 25 miles west-south-west of the Orange County shoreline. The island itself is 22 miles long and about 8 miles wide at its widest point, and is known simply "Catalina" to Californians. It is part of the Channel Islands of California archipelago and lies within Los Angeles County.

Catalina was originally named "Pimugna" or "Pimu" by the natives who originally settled there, who



were part of the **Tongva** tribe. The Spaniards were the first European settlers on the Island, claiming it for Spain in 1542. Over the years, territorial claims to the island transferred to Mexico and then to the United States. During this time, the island was sporadically used for smuggling, otter hunting, and gold-digging, before successfully being developed into a tourist destination by chewing gum magnate **William**

Wrigley, Jr. beginning in the 1920s. Since the 1970s, most of the island has been administered by the Catalina Island Conservancy.

The total population as of the 2010 census was 4,096 people, 90 percent of whom live in the island's only incorporated city, Avalon. The second center of population is the unincorporated village of Two Harbors at the island's isthmus. Catalina is mountainous with a lack of flat land. The highest point on the island is 2,097 feet (639 m), called Mt. Orizaba.

The island gained popularity in the 1920's with the advent of silent films. Hollywood discovered they could take crews to Catalina Island and use it as a stand-in location for everything from old-west towns to South Pacific beaches to pirate enclaves. On their days off, Hollywood stars would go to the island's secluded beaches or would relax in the remote beauty there, sometimes sailing their private yachts 6 hours to the island. Tourists soon followed, attracted by the same things, and the town of Avalon grew into a tourist mecca. Hundreds of films have been made on Catalina.

Airport History

There is only one airport on Catalina, privately owned and operated now by the Catalina Conservancy. Originally known as "Buffalo Springs" Airport, it traces its beginnings to 1939 when William Wrigley's son, Philip (who was an aviation enthusiast) decided to build an airport in the island's interior.

Prior to 1939, well-heeled passengers flew directly from the mainland (usually Los Angeles Harbor or San Pedro) to Avalon in seaplanes, preferring the 20 minute crossing to the steamships' 2 ½ hour (or longer) crossing, especially during rough weather which the San Pedro Channel is known for. Common folk arrived on two elegant steamships.

Wrigley's team blasted the tops off two mountains near the island's center (and near Mt. Orizaba) and used 200,000 truckloads of dirt to fill in the gaps. On top of that they placed a 3000' ft. paved runway, a terminal building, and a large ramp area. The hangar which is there today was actually built at Hamilton Cove, then dismantled, trucked to the new airport, and painstakingly re-assembled by hand at the current location. It was originally used to store Wrigley's DC-3.

World War II halted construction of the airport for 5 years. The U.S. government was afraid that Japanese attack aircraft would use the new runway as a landing point to start an invasion, so the U.S. Army covered the runway in steel debris so aircraft couldn't land there. Shortly after the war ended, the airport opened and United Airlines started passenger service in DC-3s.



Passenger service never took off (no pun intended) on Catalina mostly because it required a 30-minute bus ride to Avalon on a very steep and windy road that made many passengers sick or afraid of going off the cliffs. Today the **Wildlands Express** busses take tourists to Avalon on the same crazy road- and they still don't like it. In addition to the United service, many private pilots requested permission to land at

the then-new airport. After tiring of these requests, Wrigley – and a pilot named Dick Probert - opened the airport to the public in 1959, requiring only permission to land there via unicom (radio).

The airport is non-towered, but has a small office with a radio where the airport manager and his staff provide landing advisories. They are not air traffic controllers and have no responsibility for that. The runway and configuration remains as it was in 1946.



One of the last remaining **DC-3** commercial routes in the U.S. exists on Catalina. Every day, a DC-3 from Catalina Flying Boats brings cargo from Long Beach to Catalina Island. The company also operates Twin Otters to the island. 80% of the aircraft traffic to the airport is general aviation, with approximately 45 aircraft operations daily.



The Terminal Building at the airport, which now serves as the Gift Shop and indoor dining room, was once an actual terminal, complete with swanky chairs, couches and Catalina Tile game tables. The fireplace, which is the original, was once lit on cold days to warm guests. Pilots should note that the

terminal building also houses the DC-3 Grill restaurant, with its famous buffalo burgers and giant cookies.

Airport Information

Identifier: **AVX (Avalon)**

Airport Elevation: **1602 ft.**

Airport Hours: **(April 15 – October 15): 8:00 am to 7:00 pm**
(October 16 – April 14): 8:00 am to 5:00 pm

Runway: **04/22 (22 is the calm wind runway) Size: 3000' ft. x 75' ft**

Surface: **Asphalt, poor condition**

Lights: **PSIL- Pulsating/steady burning visual approach slope indicator (PVASI) to LEFT of RWY 22**
Provides 3-degree glide path

ATC: **Non-towered (landing advisories only).**

CTAF/UNICOM: **122.7**

WX ASOS: **120.675 (310-510-9641)**

SOCAL APPROACH: **127.4**

10 Things That Make Catalina Challenging

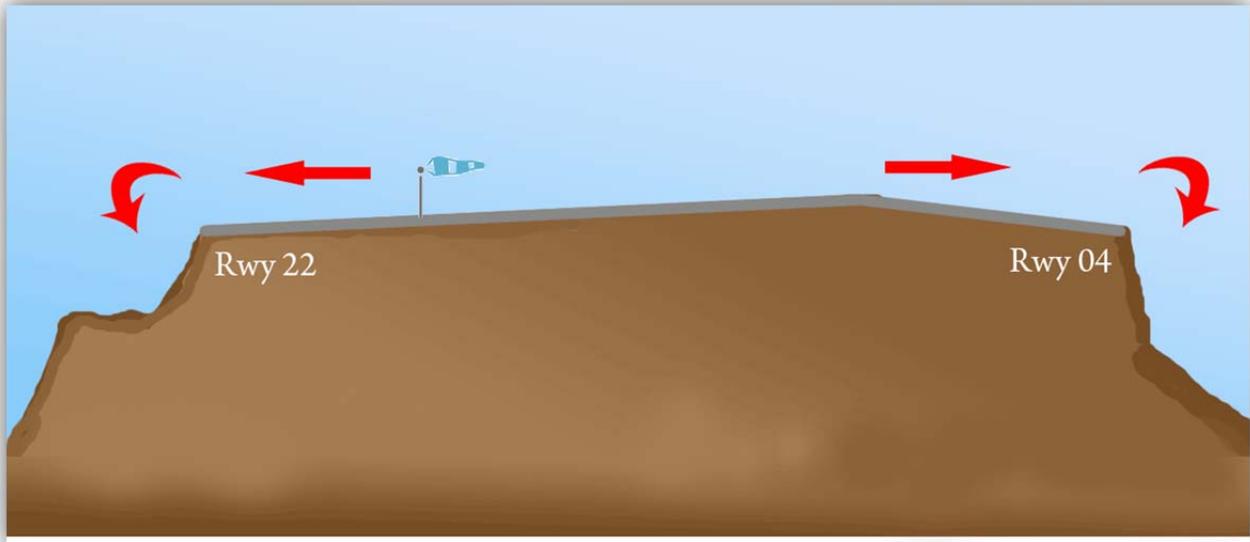
According to NTSB data, there have been 56 aircraft accidents in and around Catalina Island since 1983. Many of these accidents illustrate the same pilot mistakes and issues again and again. The airport has some unique challenges which any pilot flying there **MUST** be familiar with. It is not an airport that one can simply “hop over” to for a \$100 hamburger without having landed there previously. The traits that make the airport beautiful are also what make it challenging. It is not a dangerous airport, but one at which attention, skill, and preparation must be at their highest levels. It is an airport for pilots who are conscientious about their flying, and who are willing to play by the “rules” such as they are at this Island airport. Let’s look at these challenges:

ISSUE	NET EFFECT
#1. “Aircraft carrier” style runway	Runway is at the top of a flat mountain mesa, with 150-foot cliffs at both ends. It’s like landing on an aircraft carrier- no room for under-shoots or over-runs of the runway.
#2. Downdrafts	Prevailing winds spilling over the cliffs cause a sink in the area of short-final, especially on calm-wind RWY 22

#3. Runway is “humped” or bowed	Center of the runway is crowned so you land up-hill on RWY 22. You can't see traffic landing or taking off from the opposite end of either runway. Heavy aircraft often take-off downhill on RWY 4, even with a tailwind.
#4. Uphill runway & runway hump cause visual illusions	The uphill RWY 22 will make you think you're higher than you are due to its upslope. When you're landing on RWY 22, it <i>looks</i> as if the runway ends at the hump, when in fact it goes another 1000' ft. or more.
#5. High density altitude	During hot summer months the density altitude on Catalina can reach 5000' ft. Aircraft performance will degrade, resulting in longer take-off rolls and poor climb performance. The runway is only 3000' ft. and has a 2% uphill grade.
#6. Downhill RWY 04 makes aborts dangerous	You land/takeoff downhill on RWY 04. If you have to abort a takeoff, it will be very difficult to stop the aircraft before the cliff. When landing on 04, you'll have to work harder to stop the aircraft
#7. Runway surface is poor	There are numerous pot-holes, loose pieces of asphalt, divots and rocks on the runway. Low propeller clearance can be a problem, as will steering- especially in taildraggers
#8. Approach over land and water creates depth illusions	Standard right-traffic takes you over mountains, then ocean 1600 feet below, then mountains again. This can play tricks with your depth perception, especially if you're used to approaches over flat land and normal runways.
#9. No fuel or facilities	There is no fuel on Catalina. There is no mechanic, no tools, no oil, no maintenance, no air compressor, no parts. Pilots must plan accordingly.
#10. Mountainous terrain and quickly-changing weather	Catalina airport can go from VFR to IFR in a minute. The marine layer is a constant issue here. The highest mountain on Catalina is very close to the airport. Constant vigilance is key.

How to Address Catalina Challenges

#1. “Aircraft carrier” style runway



Since all good landings are determined in the pattern, careful work is necessary so you don't over or under-shoot the runway. Too many pilots come in high and hot due to the odd runway configuration and the intimidation factor of the airport. They try to “save” the landing in the flare, which is a recipe for disaster. Instead, fly a normal approach, using your altimeter as a guide for your base and final turns. Use the same speeds in this pattern as you'd use at your home field. If you haven't touched down by the windsock, go around!

#2. Downdrafts

Prevailing winds spilling over the cliffs cause downdrafts on short final approach. However, these downdrafts tend not to be as strong as many pilots think. On days when the wind is 15 knots or less, the downdrafts are there but mild. Here is how to fly the approach:

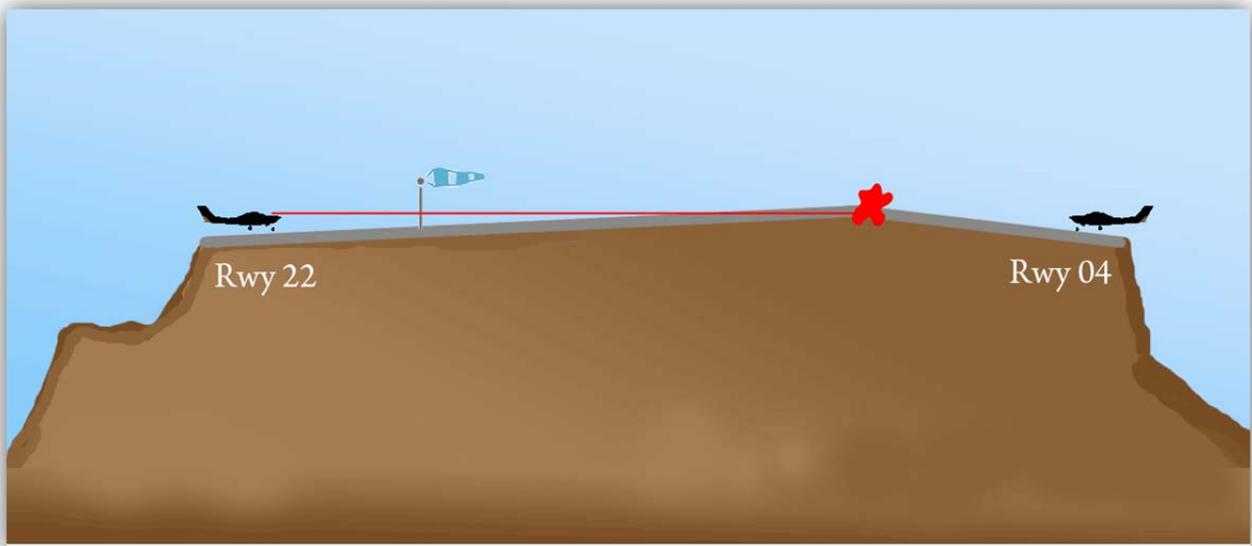
1. Don't “drag” it in behind the power curve. If you're low, go around
2. Come in so you're 15-20 feet above the numbers. Don't come in *too* high
3. Anticipate the sink with your hand on the throttle and be ready to add power
4. You could fly final with a *little* bit of power and cut it over the numbers, But stay on airspeed
5. On windy days (over 15-20 knots) stay home. Catalina is no place to prove your mettle.

#3. Runway is “humped” or bowed

The land under the runway is bowed so there is a hump past the center of the runway length. When landing on runway 22, you have a 2% uphill grade until about 2/3 of the runway. Then it flattens out. The diagram below is slightly exaggerated to illustrate the effect. The crown in the runway causes traffic

on one end to not see traffic on the opposite end. It also creates an illusion to pilots landing on runway 22: it looks as if the runway crest (the hump) is the end of the runway. Inexperienced pilots who have fixated on the cliffs mistakenly think the hump is the end of the runway. In the past, pilots have smashed on their brakes to stop the aircraft from going over the (non-existent) cliff, collapsing the gear.

1. Pay attention to radio calls while still 8-10 miles out. Listen for traffic departing or landing on the runway opposite yours
2. Never start your takeoff roll until sure there is no opposing traffic
3. When taxiing for takeoff from Catalina make your initial radio call from the ramp, clearly saying which runway you'll use
4. Study the airport diagram before-hand. Use the runway turnoffs as your landmarks to determine how much runway you have left. Don't fixate on the cliffs.
5. Calculate your takeoff distance taking into consideration the 2% uphill grade

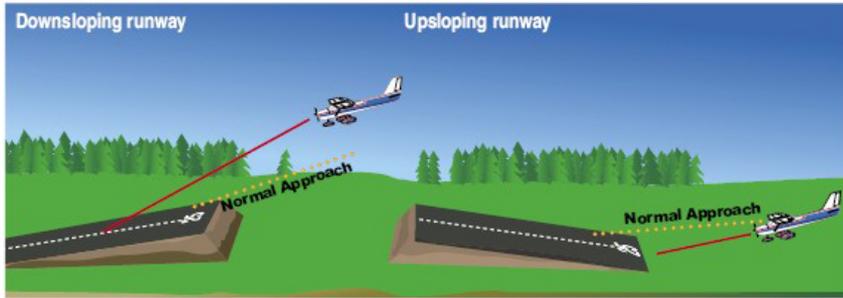


Opposing traffic will not see you due to the runway hump

#4. Uphill runway & runway hump cause visual illusions

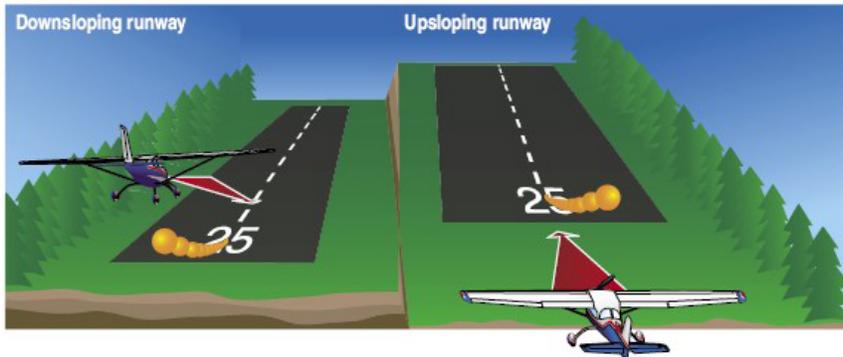
The uphill runway (on 22) causes two illusions: 1) it makes you think you're higher than you really are, and 2) it makes the runway look shorter than it is because the runway hump appears to be the end of the runway.

The entire key to landing on Catalina safely is to make an approach that is not too low, and not overcompensated by being too high. It takes some practice to adjust your visual cues so that a normal approach can be made. One trick is not to do a long final.



Runway slope illusion

- A downsloping runway can create the illusion that the aircraft is lower than it actually is, leading to a higher approach.
- An upsloping runway can create the illusion that the aircraft is higher than it actually is, leading to a lower approach.



An uphill-sloping runway presents the illusion that you are higher than you are. At Catalina, what looks like a normal approach will put you too low. This combined with the downdrafts combine to create a dangerous approach. The key is to be aware of the upslope and the downdrafts discussed previously. Any approach that looks too low on Catalina should be abandoned with a go-around.

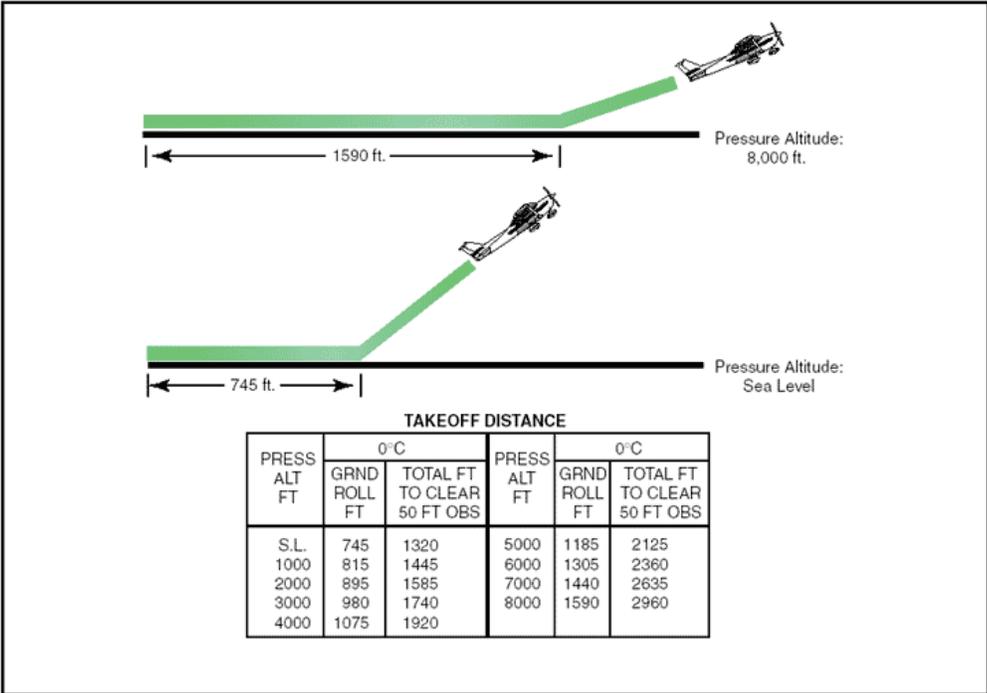


The crown of the hump looks to pilots to be the end of the runway, with the cliff ahead.

#5. High density altitude

Catalina airport is at 1602' feet elevation. During the summer months, density altitude can reach 5000' feet on a warm day. This causes decreased aircraft performance (a longer takeoff roll, less engine power, slower climb). An airplane that is at max gross (or over) may not be able to get out of ground effect, and will go over the far end of the runway. Sadly, this has happened too often. The antidotes are simple:

1. Density altitude is given as part of the Catalina AWOS on 120.675 and by phone at 310-510-9641
2. Calculate your takeoff roll prior to your flight. Know before you land whether or not you can takeoff (projecting temperatures based on the forecast or previous day's temps.
3. Don't overload your aircraft anytime- especially on Catalina



#6. Downhill RWY 04 makes aborts dangerous

Remember that runway 04 is mostly downhill. In the event of an abort (a door pops open, engine issue, etc.) you may not be able to stop in time before reaching the far cliff. There is only 3000' feet of runway, so be extra cautious when departing from runway 04. Do an extra-thorough run-up, and abort early if you suspect any issues.

#7. Runway surface is poor

The runway at Catalina received a new slurry coating in 2012. However, the elements make it difficult for the runway coatings to last. The runway has several pot-holes, divots, rough areas, loose pavement and rocks in different areas. The taxiway leading to runway 22 is especially bad, so slow taxiing is

suggested. Aircraft with low propeller clearance (like the Piper Malibu/Meridian series) need to be extra cautious. On landing the key is to not relax when the wheels touch (which is a tendency too many pilots have). Stay in control and ride those rudder pedals (especially in taidraggers) all the way to the parking ramp.

#8. Approach over land and water creates depth illusions

Pilots are accustomed to airports where the surrounding terrain is consistent. On Catalina, your pattern will take you over land just 1000' feet under you, to suddenly-dropping terrain, then suddenly over ocean which will be 2600' feet under you- all in the span of a minute or two. The key is not to let the changing terrain affect you. Use your altimeter to keep pattern altitude, then fly a normal approach; putting in flaps where you normally do, and keeping the same speeds to do everywhere else. Accidents have occurred because pilots make abrupt changes to their approach because they are intimidated and confused by the changing terrain.

It's disconcerting to be at slow speeds in landing configuration when you're 2600' feet over the ocean with cliffs ahead. That's another reason why doing with an experienced CFI first makes sense.

#9. No fuel or facilities

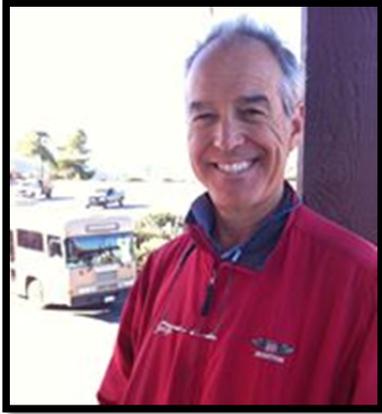
There is/are no fuel, oil, parts, mechanics, hangars, or even an air compressor at the airport. No maintenance facilities are available. Curiously, the large white hangar that everyone is familiar with is used for storage of non-aviation items such as freight. There is no aircraft storage on catalina and the large hangar is NOT available.

If you encounter a mechanical difficulty with your aircraft, you must fly a mechanic, tools, and parts to the island airport to repair it. The only other option is to dismantle the wings, truck the aircraft to Avalin and use a freight service such as Catalina freight Line (<http://www.catalinafreight.com>) to barge the aircraft back to Wilmington, then truck it to a maintenance facility and reassemble the wings.

1. Fill up on fuel before departing your destination (based on density altitude and your load that day)
2. Bring basic tools, extra oil, extra hoses, hose clamps, heavy duty tape, etc
3. Don't come with bald tires

#10. Mountainous terrain and quickly-changing weather

Catalina airport can go from VFR to IFR in just a few minutes. The infamous California "marine layer" can creep over the runway making a VFR departure impossible. To add to that, the minimums on the instrument approach are high, meaning you really can't get in or out when there are low clouds and fog on the runway (which are common). Be prepared to wait out the clouds, don't come if it's marginal, and keep an eye on the forecast from Flight Service.



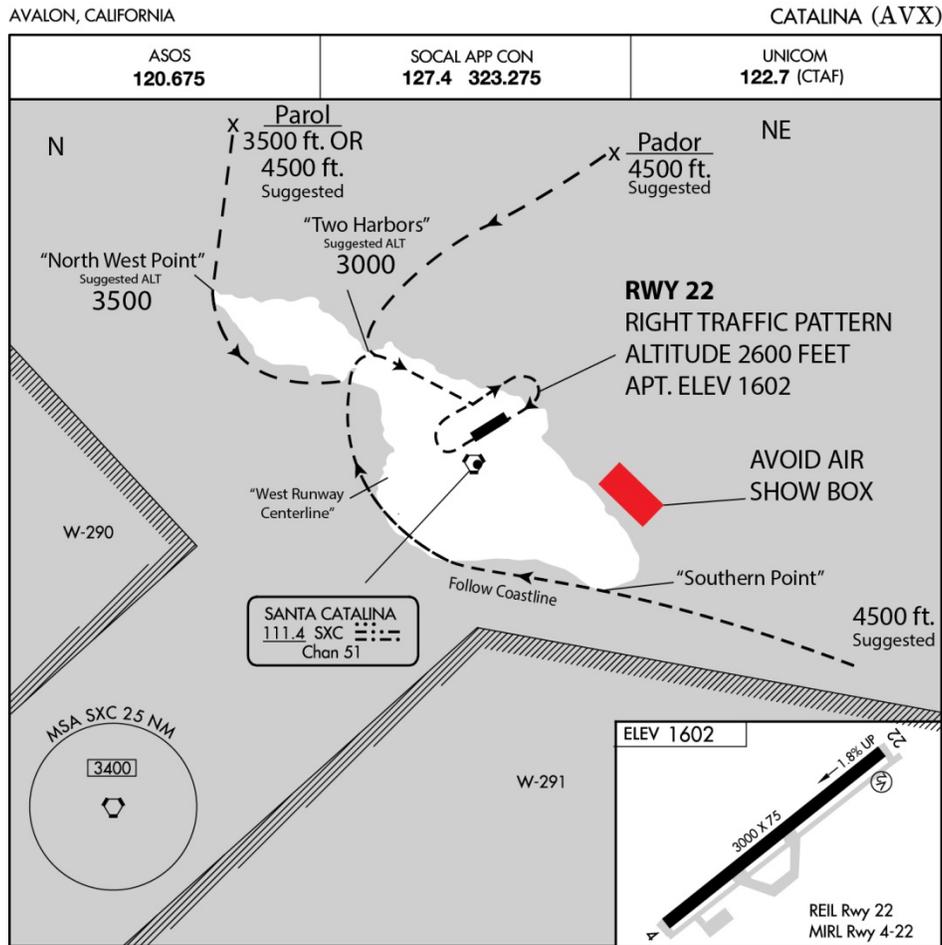
Pilot Mistakes - from the Airport Director

Jorge O'Leary is the current Airport Director on Catalina, and his assistant is Justin Bollum. Jorge made a list of important items he feels pilots need to know about. This is his list below (Thanks, Jorge!)

- 1. GO-AROUND!** Not executing a go-around when it is apparent that the landing approach will lead to touching down past the 1/3 point of the total runway length. There are significant drop offs at each end of the runway and not much room for error. When landing on runway 4 it is especially important because you will be landing downhill.
- 2. RUNWAY IS NOT FLAT.** When landing on runway 22 you will have a 2% grade uphill. This needs to be factored in on your landing and takeoff roll. Rnwy 22 is the preferred runway for landing, even with a slight tailwind. Heavier aircraft benefit more from landing uphill due to the reduced roll distance off the upslope.
- 3. WHERE ARE YOU EXACTLY?** Pilots that do not accurately report their positions in the pattern or in the general area. Know your compass positions with respect to the airport, and island features. Give distance and altitude. Announce legs accurately. Note that the VOR is off the field and will not reflect a true distance to the airport as a GPS will.
- 4. A PATTERN IS A PATTERN IS A PATTERN.** Fly a standard pattern; NOT a Downwind that is five miles from the runway centerline, or a Base that starts off an extended downwind, unless you say so through your CTAF reports. On a standard pattern, other pilots will know where to look for you when you announce your Legs and help avoid those midairs.
- 5. HERE I COME, GET OUT OF MY WAY.** An aircraft flying a straight in approach must give way to aircraft that are already in the pattern if there is a conflict. It is preferable to fly-the-pattern. A straight in is not a standard recommended pattern entry in the Airman's Information Manual.
- 6. ANYBODY ON THE OTHER END?** Communicating over the CTAF prior to takeoff is very important at KAVX. On calm wind days heavily loaded aircraft may opt to take off downhill while other aircraft are landing uphill. The change in runway grade prevents seeing an aircraft that might be taking off in the opposite direction.

Entering the Pattern

NOT FOR NAVIGATIONAL PURPOSES Suggested VFR Arrivals - October 3, 4, 5 2014 Scheyden Catalina Air Show



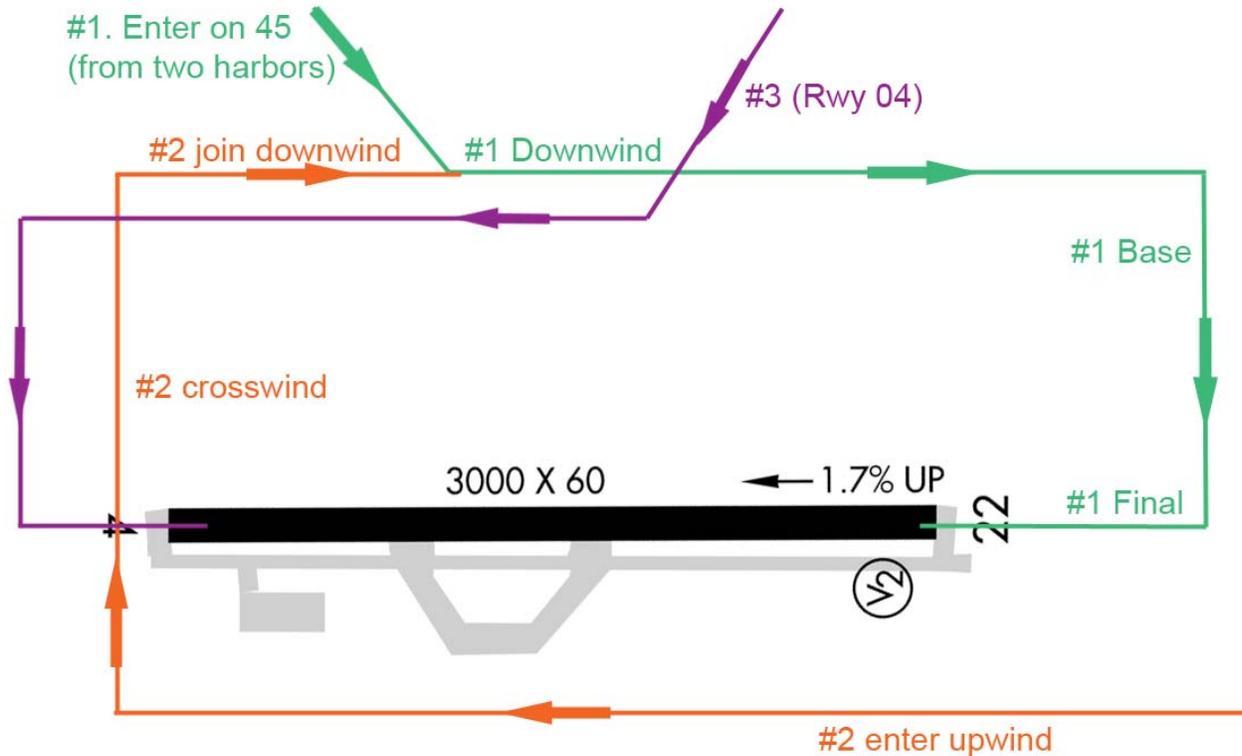
The best way to enter the pattern from any direction is to proceed to "Two harbors" and descend to 3000'. Then turn east and head toward the airport. The pattern altitude is 2600' feet. Always enter on the 45 for RIGHT TRAFFIC, runway 22, or LEFT TRAFFIC, runway 04. Note that both Mt. Orizaba (the highest point on the island), and Mt. Blackjack are just East of the airport so patterns are not allowed on that side of the runway.

An alternative method that can be used when the airport is quiet (not on a weekend), is to enter upwind on runway 22 and proceed into a normal pattern for runway 22.

STRAIGHT-INS: Straight-in approaches are frowned upon by the airport and by pilots used to the airport.

Straight-in approaches are a bad idea on Catalina due to the unique nature of the airport. Pilots in the standard pattern are not accustomed to look for traffic entering straight in. It invites mid-air collisions, is inconsiderate, and is considered poor form for island airport. In short: nobody likes them.

NOTE: As of October, 2014, the FAA has pursued legal action against pilots involved in incidents at non-towered airports, where the pilots entered the pattern straight in. The FAA cites that a "straight in is not an approved or standard traffic pattern entry."



Pattern Entries Rwy 22

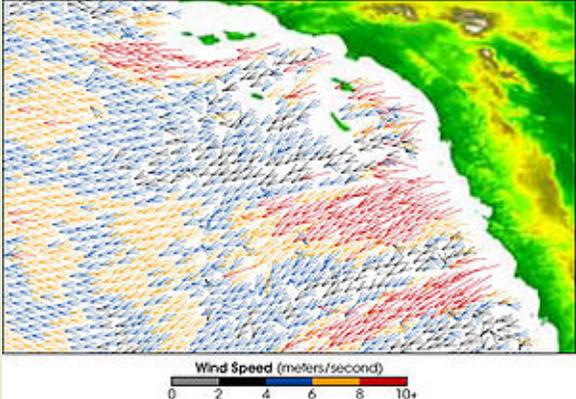
Not for navigational purposes

Two safest options for entering Runway 22 pattern shown. #1 is always best, especially on busy days



10 CATALINA TIPS

<p>1. Always request Flight Following to/from</p>	<p>Perhaps the most reassuring benefit of flight following is the knowledge that you'll receive immediate assistance if you experience an emergency situation. Since you're already on-frequency with an ATC facility, you can request vectors to the nearest airport or you can alert ATC to your position if it's necessary for you to make an off-airport emergency landing. In either case, ATC can get emergency response services in motion immediately.</p>
<p>2. Carry a PLB and life vest</p>	<p>You will not be able to tread water for long so you'll need the life vest. A PLB will pinpoint your position for rescue crews.</p>
<p>3. Pick a VFR cruising altitude that allows a glide close to either shore</p>	<p>Also consider your passenger's ears on the descent. It's about 12 miles from the center of the channel to either shore.</p>
<p>4. Enroute look for boats and oil platforms to ditch near</p>	<p>This has saved the life of pilots in the recent past.</p>
<p>5. Review ditching procedures prior to your flight</p>	<p>http://oas.doi.gov/library/handbooks/library/awds_92.pdf</p>
<p>6. Bring your own chocks and tie-down ropes</p>	<p>Catalina has cables in the dirt areas but no ropes or chocks.</p>
<p>7. Purchase Wildlands Express bus tickets online prior to your trip</p>	<p>https://www.catalinaconservancy.org/index.php?s=visit&p=wildland_express_service</p>

<p>8. Join the aero club if you will visit more than 6 times/year</p> <p>http://www.catalinaconservancy.org</p>	<ul style="list-style-type: none">• Unlimited landings at the Airport in the Sky for one year*• 20% off Wildlands Express shuttle service for member and their guests• Invitations to social and special events at Airport in the Sky• A free Killer Cookie with \$10 entree food purchase at Airport’s DC-3 Gifts & Grill• One annual Freewheeler bike pass• 50% off Conservancy campground fees, ask the Tower about underwing camping!• Complimentary subscription to Conservancy Times newsletter and UPDATE Online E-newsletter• Discounts at various Avalon merchants
<p>9. Aero club members can camp near end of Rwy 04. Ask manager</p>	
<p>10. If it’s windy at the airport, stay home</p>	

HELPFUL RESOURCES

AOPA Airports Info- Catalina	http://www.aopa.org/airports/KAVX
Catalina Conservancy (tickets, camping, buses, etc.)	http://www.catalinaconservancy.org
DC-3 grill (restaurant)	http://www.catalinadc3.com/
Catalina tourism information	http://www.catalinachamber.com/
Info on requesting Flight Following	http://www.avweb.com/news/avtraining/183268-1.html?redirected=1
Catalina museum	http://www.catalinamuseum.org/
Catalina Island's aviation history (by Jim Watson)	http://www.channelcatalina.com

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