



March 2024 Newsletter

New Mexico Pilots Association

NMPA operates exclusively for charitable, educational, and scientific purposes for promoting general aviation, aviation safety and education, and pilot camaraderie; preserving airfields and airspace; and to engage in any activities permissible for nonprofit corporations, organized under the laws of the state of New Mexico.

New Mexico Pilots Association Officers

President John Lorenz (johnlorenz@geoflight.net)
VP Ken Summers (ken@ksummers.net)
Treasurer Dave Staples (d_staples@comcast.net)
Secretary – Jeff Gilkey (jeff_trike@nmpa.org)

NMPA Newsletter Contributors

Editor – Lanny Toning, lt@flyrallye.com
Here is Your NMPA – John Lorenz
Back Country – Ron Keller, radarpapa182@yahoo.com
As The CFI Sees It – John Lorenz
Advocacy – Jim Covington
NM Airstrip Network – Joyce Woods, niner3echo@flylonecone.com
Day Trips - Lanny Toning, lt@flyrallye.com
Obscure & Scenic New Mexico - Jeff Gilkey, jeff_trike@nmpilots.org
Mountain Flying – Cliff Chetwin, kestrelair1@gmail.com
Tech Corner – Will Fox

Table of Contents

- Editor's Log – p 3
- Upcoming Events - p 4
- Here is Your NMPA – pp 5-6
- Advocacy – p 7
- NMAN – pp 8-9
- Back Country Beat – pp 10-11
- Mountain Flying – pp 12-15
- Obscure & Scenic NM – pp 16-22
- As The CFI Sees It pp – 23-24
- CFI Resource List – p 25



March Cover Aviation Day at NM 2024 Legislature

From left: NM Aviation Director Pete Rael, NMPA President John Lorenz, and NMPA volunteers: Harv Martens, Lanny Toning, Joyce Woods, Ron Keller, and Rod Billingsley

The Editor's Log

by Lanny Tanning



Living the dream in N 60 BF....

Is Aviation That Much of a Mystery?

There have been a number of news stories in recent months about aviation accidents. One report about a recent accident morphed into other aviation topics seemingly unrelated to the incident that generated the story in the first place. I may be missing something, but when a plane goes down, I want to know why. What happened? I know ATC is short staffed. I know we are low on commercial pilots. I know that there are a lot of drones in the sky. But none of those issues had anything to do with this sad case. Me? I just want to know specifics about the plane that had the problem.

The story that put question mark over my head was about the Bombardier 600 that lost both engines and tried to land on a Florida highway. Unsuccessfully.

According to the report, I learned that ATC is short handed. That airports are busy. That we need more pilots flying commercial. What I don't know is why both engines flamed out...or quit as the plane was setting up to land at an airport. I'm guessing that being out of fuel wasn't the problem since the plane burned upon impacting a wall along the highway, killing the pilot and co-pilot. Listening to the calm and very experienced pilot report his problem to ATC tells me that the accident wasn't a result of panic in the cockpit. Or a problem with ATC. Or a drone strike. Or an ATC overload issue. I'm guessing that the flight recorder might provide the answers when NTSB gets it sorted out. But with all the other stuff that got stuck into the story that had absolutely nothing to do with this particular accident, I have to wonder what the purpose might be. If there is a purpose. If or if not, this kind of reporting has to have the effect of making the public question the safety of aviation. Aviation safety is not perfect. That's a given. And why we have multiple agencies, websites, magazines and watchdog groups constantly seeking improvements. The airspace is busy (although that's why we have ATC and pilot training and upgrades in communication and navigation systems going on continuously.) The record on aviation safety is all but unimaginable given the fact that many, many planes are constantly defying gravity at high speed. That there aren't more accidents doesn't just happen. Maybe it's just me, but 'just the facts, ma'am' seemed like a missing concept in this particular bit of aviation accident news.

Upcoming Events

NMPA Members can login and post any aviation events on the [Events calendar](#).
Or send announcements to nmpa@nmpilots.org
and we'll post for you!



Upcoming Events

March 2

[66th Cactus Fly In - Casa Grande, AZ](#)

See full schedule including Fri 3pm reception and Sun AM donuts/coffee til 9am. No charge for FlyIn aircraft. Register pre-1957 aircraft for judging.

April 12-14

[Truth or Consequences Weekend Fly-In \(KTCS\)](#)

Fri - Sun, Bring your tent! Spot Landing Competition, Awards, Food Trucks, Vendors, Saturday Open House. See link for details. Pilots - pls RSVP by text: 760-646-5301

April 13

[Grants-Milan Wings 'N Wheels](#)

Free Admission. Aircraft registration requested. \$1 off 100LL

April 20

[Sacaton/Rain Creek work party](#)

Save the dates! A work party is being planned for April 19-21, 2024 at Sacaton/Rain Creek (NM16) in order to pour a concrete stoop for the new vault toilet.

These dates are tentative subject to USFS availability. Watch for further details.

Click on Links for Details

Here is your NMPA

John Lorenz, President



John Lorenz is a 6000 hour CFII, MEII, glider, and sand-lot acrobatic pilot. He has given over 2000 hours of tailwheel instruction. During the day he is a consulting geologist.

Board Meeting Short Takes, Low Passes Over Muddy Runways

NMPA Board Meeting: Quick takes on the 2-24-24 board meeting (full minutes and the treasurer's report will be posted on the NMPA website):

-Finances: Our bank account has grown significantly since 2008 when we were barely solvent. We have a Grants program and have tried other ideas to help redistribute these funds to the aviation community. The most successful program to date, due to a small but dedicated group of pilots, has been investing in Back Country airstrip rehabilitation and maintenance efforts in the Gila region of the state. At the board meeting we decided to invest dollars into wider PR efforts such as membership in the NM Airport Manager's Association, advertisements on Airnav.com, and in underwriting meals and maybe door prizes for pilots at fly-ins. There was also talk of re-instituting the NM Pilot's Bash, volunteers welcome.

-Ruidoso: Rob Taylor reported that there is a strong and pro-active group of pilots in the Ruidoso-Carrizozo area who are ramping up their activities and involvement with airport decisions; more power to you guys! They are looking for an aviation mechanic to relocate to Ruidoso, what a great opportunity.

-G100UL: Tylor Hall reported that General Aviation Modifications Inc. (GAMI) would like to use New Mexico as a demonstration state for infrastructure development and distribution of the new G100UL aviation fuel, helping to underwrite the cost of the STC needed to use this new, cleaner, and environmentally-friendly fuel. With the inevitable phasing out of 100LL, this could be a chance for NMPA to help with a national transition. If your airport would consider re-purposing the fuel farm to G100UL for this demonstration, please let me know and I will connect you with Tyler.



Unrelated to anything in this piece: Charles Fink recently gave me this WWII era "Bailout Bottle", portable oxygen for high-altitude aviators in a hurry. The pressure gauge goes up to 3000 psi, and the rubber end presumably plugs into a face mask. Those guys had chutzpah. Thanks Charles, be well.



-*Small victories*: 1) An NMPA letter was instrumental in having the FAA require lighting on the cell tower near the Cuba airstrip. 2) Outfitters and fishing guides can provide transportation from the Navajo Dam airstrip down the mesa if you fly in and intend to use their services (see business cards will be posted on the NMPA website). 3) A pilot lounge will soon be available at Reserve airport (T16) due to Ron Keller's persistence: come join the work party there May 3-5 and bring your paint brush. 4) Aviation day at the state capitol was a rewarding effort, with 6 NMPA members manning the booth and making good contacts with legislators and administrators. I'm always amazed at how many such contacts are needed, and that need to be continually renewed, to make progress: for example, the Santa Rosa airstrip on the L-Bar ranch is not yet a dead issue.

-*New Officers*: We will need several replacement officers for upcoming two-year terms. If you have an interest in becoming part of the NMPA board, please let me know and I will put you in touch with the search committee.

-*Annual Meeting*: Our next board meeting will be the Annual Meeting to be held June 15th at Moriarty (0E0) at the FBO, with a paid-for lunch at the Commemorative Air Force hangar.

Support for AOPA: NMPA was also recently asked to lend our name to AOPA's lobbying effort in support of Senator Ted Budd's bill S. 2675, the Backcountry Aviation Protection Act, (see <https://www.congress.gov/bill/118th-congress/senate-bill/2675/text?s=1&r=52>). We whole-heartedly support this bill, which would require the Federal Aviation Administration (FAA) to add an exception to the minimum-altitude regulation (14 C.F.R. § 91.119). The exception would allow low-altitude runway-inspection passes at back country airstrips. The FAA recently revoked the license of one prominent pilot for doing low passes over an airstrip before committing to land. Damn bureaucrats. If I had landed on the N-S Negrito airstrip yesterday my plane would be upside down in the mud today and the FAA would have gigged me for *that*. A low pass revealed mud and puddles on the N-S runway whereas the crosswind strip was dry. I still managed to taxi into a boggy area and we spent an hour or so working the airplane free.



Pilot's dilemma: Do you do a low pass, currently illegal, to assess runway condition before landing and risk being gigged by the FAA for it, or do you land without inspecting the runway and risk being gigged by the FAA for wrecking your airplane?



Advocacy

by Joyce Woods

Advocacy Committee Member



Joyce Woods was introduced to flying by her husband Art, who grew up around aviation. She got her license in 1994 and is multi-engine and instrument rated. Besides continued service to NMPA, she flies Young Eagles and actively volunteers with the EAA, 99s, NM Airstrip Network, and was named 2016 SW Region FAASTeam Rep of the Year.

NMPA at Aviation Day at the Legislature

We didn't expect too much aviation related success with the short session and after great 2023 successes. Statewide airports are actively spending the \$55 million approved last year for airport infrastructure. Also in 2023, the aviation funding sunset clause was removed after many years of trying, and the Aviation Division's operational budget was doubled. We heard rumblings of similar infrastructure funding this year but we are not aware that any was included.

NMPA volunteers staffed a display and spent a productive day reconnecting with legislators, their staff, and the public regarding our efforts supporting NM general aviation. Topics of most interest were developing aviation tourism and economic development opportunities, aviation access to outdoor recreation, and our track record with restoring and maintaining backcountry airfields.

Legislation Updates:

SB 105: Repeal Taxes. We were not disappointed that the tax bill died in committee. Along with virtually every other current GRT exemption, [this proposal](#) by Senator William Sharer would have repealed the hard won GRT exemption for aircraft and aircraft parts and services approved just a few years ago.

SB 120: Create The Unleaded Aviation Fuel Grant Program. Recognizing the complexity of the full transition to unleaded fuel, NMPA supported this proactive approach (with suggested modifications) to provide an incentive for communities to offer nonethanol Mogas or new aviation fuels. Introduced by GA pilot Senator Soules of Las Cruces, [this bill](#) would have established a grant program providing \$200,000 to "publicly owned airports". "for . . . installing an unleaded aviation fuel dispensing system or otherwise providing unleaded aviation fuel at an airport." Stay tuned for next year.

HB 40: Intrastate Airline Task Force. [This bill](#) proposing a temporary task force to study and provide recommendations for adding scheduled interstate commercial service. It was determined that such task force could be established without a legislative mandate.



From left: NM Aviation Director Pete Rael, NMPA President John Lorenz, and NMPA volunteers: Harv Martens, Lanny Tinning, Joyce Woods, Ron Keller, and Rod Billingsley.

New Mexico Airstrip Network (NMAN)

by Joyce Woods
NMAN Facilitator



Joyce Woods was introduced to flying by her husband Art, who grew up around aviation. She got her license in 1994 and is multi-engine and instrument rated. Besides continued service to NMPA, she flies Young Eagles and actively volunteers with the EAA, 99s, NM Airstrip Network, and was named 2016 SW Region FAASite Rep of the Year.

NMPA and NM Aviation Division members meet monthly as the core planning team for the network. Here's an update on three current priorities.



The Voice of Aviation in New Mexico

New Weather Stations: Over the years, our members have offered our wishlists for various airport upgrades. Long thought to be a pipe dream, one is becoming a reality! Thanks to 2023 infrastructure funding, the Aviation Division has initiated AWOS installations for Reserve, Crownpoint, Shiprock, and Zuni airports! Gallup's system will be upgraded. Additional airports are planned as well. Along with improved weather info, these airports will concurrently get RNAV approaches.

Will Fitzpatrick has been working with statewide groups including emergency response and AirMed organizations to identify priorities. Utilizing MesoTech technology, they will be AWOS 3PT which means they'll include precipitation and thunderstorm data, providing the minimum info for IFR flight. This approach mirrors the model used in Wisconsin and Minnesota where the state funds all the AWOS sites.

We're told the Reserve Airport (T16) installation will be first!!! *Thanks to Will Fitzpatrick and Director Rael!*

Cuba Landing Field (NM2): this field is still NOTAM'd closed because of badly needed maintenance. It has been held up until a state road right of way could be granted to the BLM and airport users. We've been told the right of way has been approved and await formal documentation. Hold on a bit longer, it's coming!!!

Santa Rosa Peak Airfield (US 3295) – we remain interested in gaining support to reopen the airstrip on NM Game Commission lands acquired last year. No progress here except that we're learning more. The airfield remains intact, while the fence was removed to support pronghorn movement. The Department of Game & Fish (NMDGF) has now issued specific rules, expanding the previously existing Marquez Wildlife Management Area (WMA) to include the L Bar Ranch. "General Outdoor Recreation activities are allowed outside of the closures listed" which include wildlife viewing, photography, hiking and horseback riding. No camping is allowed. Parking lot access points are noted. The airstrip is located just east of the "East Canon de Santa Rosa road, and just west of Cerro De Jacobo on the map: [MarquezLBar-Access-for-Website-01_02_2024.pdf \(state.nm.us\)](#) Also of interest are the general rules for all State Game Commission Lands: [General-SGC-Land-Rules.pdf \(state.nm.us\)](#) This info helps us understand limitations as we continue to pursue preserving air access to this historic field. We hope someday to gain Game Commission support. If you have ideas and especially if you can help, please let us know.

Members of the New Mexico Airstrip Network (NMAN) share a common interest in promoting aviation access to New Mexico's unique cultural, historic, and recreational resources. Info at:
nmpilots.org/NMAN

NMPA Grant Program – Enhance NM Airports

We are looking for ideas! Maybe for your favorite airport?

We are interested in supporting small projects to attract pilots or enhance the visitor experience to New Mexico airports. Any publicly used airport. We have limited funds but are requesting proposals for projects that our members could help implement with local airport support.

What can we do to attract aviation visitors to stop in New Mexico and perhaps stay a while? Or give New Mexico pilots another reason to fly? We want to encourage more on-airport picnicking, camping, or access to local recreational activities. For instance, a picnic table, bench, fire ring, or a simple shade cover. A new sofa or coffee pot in the Pilot Lounge? Signage that makes it easier for transient pilots to access airport or local amenities?

Give us your ideas, whether at your airport or one you think would benefit.

Submit your proposal for consideration to: nmpa@nmpilots.org.

What we need to know is:

- 1) Describe the opportunity including what, where, and why
- 2) Provide a cost estimate and plan for who & how to implement
- 3) Indicate current level of airport support (Already approved / Need to gain support / No support)
- 4) Contact Information (Name, Email, Phone)

For approved projects, payout to the Grantee shall be as a reimbursement for expenses aligned with the grant proposal request. Submission of an itemized list of expenses with receipts for primary items is required. Photographs of the completed project are desired where applicable.

If you have an idea but can't formalize a submission, let us know what you are thinking. Or a question?
Contact us! 2024 Grant Committee Co-Chairs: Rod Billingsley and Joyce Woods

OR want to help us support such projects? [Donate to NMPA](#) today!



Picnic Tables & Fire Ring, Reserve Airport (T16)
NMPA 2017



Ron Keller installing the Fire Ring at Reserve,
one of many he's made possible in the Gila!

Backcountry Beat

by Ron Keller



Ron Keller flies a C-182 and has been involved in aviation for the better part of his life. Ron retired from FAA Technical Operations in 2011 and has stayed busy ever since, including working for the New Mexico Aviation Division, and currently serves on the NMPA Board of Directors and as Co-Chair of the NMPA Backcountry Committee. Ron is a Recreational Aviation Foundation Liaison and serves on the New Mexico Airstrip Network Steering Committee.

Spring Forward...

Forward for our clocks and forward for progress in the backcountry.

We have good news at Reserve Airport. A method to tie-down the pilots' lounge building has been identified and should be included in the preparation of the remodeling plans. The building must be anchored to the ground in order to get an occupancy permit. So, I'm still hopeful that the building will be ready for use by summer. Also, an AWOS has been approved and funded for Reserve Airport! I estimate the equipment alone will cost around \$125K, but thanks to a grant from the Aviation Division, the equipment and the installation should be pretty much covered.

I was told that the long-awaited Right-of-Way to (legally) access Cuba Landing Strip by road has been granted. So that will enable someone with a motor grader, possibly Sandoval County, to repair the severe erosion that has closed the runway for months. Also, I will be able to mow the adjacent sagebrush again.

The bulk of the Gila backcountry airstrips have had snow cover more than usual. I saw on a local weather report that the Gila had close to 150% of snowpack as of mid-February. It has definitely delayed my visits to those locations, but as of this writing, the snow has melted and I plan to do some runway drag work at Negrito. John Lorenz will likely join me to help me wrestle the drag off the trailer and



Early setup work



Typical AWOS, courtesy of Flying Magazine

Backcountry Beat, continued

reload it. I hope many of you have noticed the winter flying tip I posted on the NMPA website. The link is a highly accurate, near real-time map of snow cover on the Gila backcountry. If you know about where the airstrips are, you can get a good idea if there is snow cover. Then you just have to give it a few days or so to dry out, once the snow has melted. It seems like Sacaton and Beaverhead get the least snow, probably due to elevation and geographic location.

Jeff Gilkey and I stopped by the New Mexico Outdoor show on February 16 to represent NMPA and the NM Airstrip Network. We met some prior contacts and some new people representing various outdoor recreation interests. One thing we heard is that there is a new shuttle service at Navajo Lake. We will investigate that and see about availability of transportation to and from the Navajo Lake Airport.

We still have work parties and fly-ins scheduled on the NMPA website event calendar. Our first backcountry work party is scheduled for April 19-21 at Sacaton Landing Strip (NM16). Our next work party is scheduled for May 3-5 at Reserve Airport (T16). Our first backcountry fly-in is scheduled for June 7-9 at Reserve Airport. The RAF will be donating a nice prize for a lucky winner. Further details and registration will be coming soon on the website for all of these events.

Until next month,
Fly Safe and Often!
Ron



Lateral erosion on the runway at Cuba
Will Fox photo

Safety Briefings are available on the NMPA website for all the [Gila USFS Airstrips](#). Note that some require prior permission – just a phone call.

Another great resource, is www.Airfield.Guide, thanks to the Recreational Aviation Foundation (RAF)

Hold On To Your Hat!

Mountain Flying

by Cliff Chetwin



Cliff is a retired National Park Service pilot and a Master/Gold Seal CFI with over 40 years experience flying in the Rockies, Sierras, and Alaska. He currently lives in Kremmling, Colorado and owns a Superhawk.

There are two broad categories of wind that we pilots need to be familiar with for safe mountain flight. In meteorological terms these are broadly classified as “general winds” and “convective winds”. This month I’ll summarize the general winds and then move on to the less well understood but very important convective winds next month.

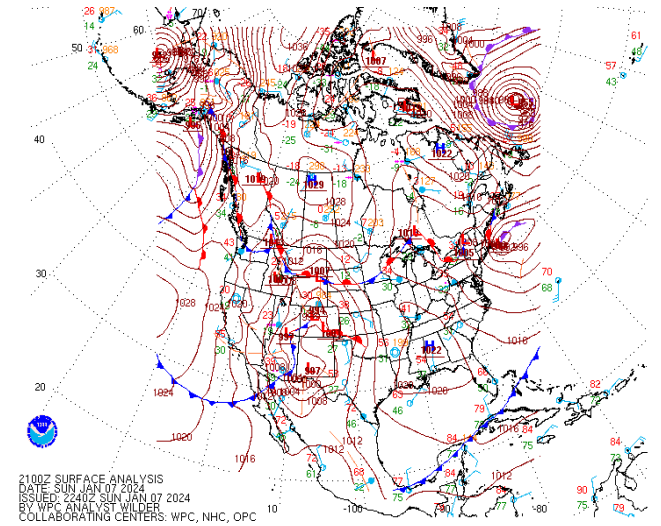
General winds are the ones we get in our winds aloft briefings. These winds result from the large-scale pressure patterns that dominate the troposphere, which is the part of the atmosphere those of us lacking an astronaut rating fly in. If you recall those pesky wind correction angle and flight time questions on the FAA written exams, these are the winds you were being asked about. These winds vary in horizontal speed and direction as the synoptic scale highs and lows develop, move, and ultimately decay.

All winds have the characteristics of direction, speed, and gustiness (turbulence). In our New Mexico latitude, which ranges from 32°N to 37°N, the general winds, which we refer to as the westerlies, are produced by the Coriolis force that we pilots are well aware of and the broad scale pressure gradients resulting from temperature differentials over large areas. These are shown on synoptic weather maps which depict the pressure gradient lines along with fronts, high and low pressure areas, and dry lines.

When taken together we can get a pretty good picture of the horizontal and vertical movement within the broader atmosphere and therefore the likely winds aloft that we will encounter during flight.

All of these elements are important but the most telling one for us as far as understanding the likely general wind in the mountains is the pressure gradient at the 700mb (~10,000’msl) and 500mb (~18,000’msl) level. If the pressure gradient is small (lines on the pressure chart are far apart) we usually see relatively light winds aloft forecast in our briefings and a potentially smooth ride. These winds rarely exceed average GA pilot skill levels when flying in the mountains. When the gradient becomes stronger (lines on the chart are closer together) the general winds can easily exceed aircraft capability. Flying over California’s Gabilan Mountains at full throttle I once even managed a negative ground speed; a C-152 isn’t exactly a speed demon but this illustrates the point. The mountain ride is also likely to be unpleasant, possibly even dangerous, and certainly fatiguing.

As we in new Mexico know the pressure gradient lines on the synoptic scale charts get real close together here in late winter and spring bringing strong windy conditions just about every day, generally from about 230° to about 280° magnetic. For non-mountain areas these synoptic winds predominate in the lower atmosphere all the way to the



Surface Analysis Chart showing relatively light winds over New Mexico

ground and the decision to fly or not can rest on fuel and bladder endurance, runway alignment, and pilot crosswind skill levels. In the mountains these winds usually dominate only down to the top of the friction layer (roughly the surface up to about 2,000’ agl, but sometimes as high as 5000’agl) and often do not reflect the winds we will encounter near the surface, thus our need to talk about convective winds next month. As we might expect, general winds can be strongly affected by the type of surface over which they flow, and that the amount of influence is largely dependent on the wind speed and the stability of the atmosphere. Stable air flowing over relatively even surfaces, such as found in the high plains of eastern New Mexico, tends to be smooth, or laminar, with relatively smooth rides. On the other hand, unstable air or strong winds aloft flowing over rough surfaces, such as in the various mountain ranges throughout New Mexico, can be very turbulent. If the general winds are strong, or convective winds are weak, other mountain topographic effects such as canyons, ridges, and passes can also channel the general wind, increasing its velocity and the number and strength of resulting eddies.

When the airflow is from higher to lower elevations, as is often found in the coastal mountains of California and Oregon or the eastern slopes of the Wasatch and Rockies, the air warms adiabatically and foehn winds are produced. These general winds have local names, such as Chinook, Santa Ana, etc., and are the cause of very strong and turbulent winds aloft.

Frontal activity also has a major influence upon general winds in the Northern Hemisphere. You should recall that the general winds tend to shift clockwise with the passage of fronts making it pretty easy to determine approximate wind direction as long as you know your location relative to a given front. There is also a direct correlation between the speed of the frontal advance and the strength of the generated winds, the faster the front is moving and the closer you are to it the stronger the general winds will be. If you spend a little time with the pressure charts its pretty easy to plan where the general winds will be blowing from and their strength for any point on your route of flight.

Another consideration in understanding the general wind is that pressure systems higher in the troposphere can differ markedly from those at the surface. With height, there may be gradual changes in the distribution of highs and lows causing the troposphere to become stratified producing different wind speeds and directions in the separate layers. A common cause of this stratification is the overriding or underrunning of one air mass by another causing layers that differ in temperature, moisture, or motion, or any combination of these. If the stratification is strong the horizontal wind direction may change abruptly between these layers. The difference in direction may be anywhere from a few degrees to a complete reversal. Colorado’s Hagerman Pass commonly exhibits this 180° reversal and is the home to a number of crashes as a result. In the absence of marked stratification above the friction layer wind direction at adjacent levels tends to be uniform even though the speed may change with altitude. Looking at the chart to the right we might conclude there is stratification at the lower altitudes, but we must also consider that while the temperatures are colder than ISA the lapse rate while not standard is quite uniform through 21,000’ indicating some stability. We are more likely looking at the effects of the friction layer upon the general winds as we approach the higher terrain with a possible stratification as we pass 18,000’ where we see fairly stable wind direction but also we also see warming against the standard ISA. I would expect shifting winds on climbout and maybe some light-moderate turbulence, depending on the underlying terrain. Mountain wave activity and increased turbulence are likely as we approach 12,000’and there is good potential for shears up in the flight levels.

In the mountains the general wind can also have a very strong vertical speed component as well. The two broad categories of vertical general wind are shears and mountain waves. There are four common sources of low-level wind shear developing in the general wind. These are thunderstorms, frontal activity, temperature inversions and strong surface winds passing around natural or man-made obstacles. From the earlier Surface Analysis Chart the only one of these sources obviously present would be the frontal line along the Arizona/New Mexico border. From the widely spaced pressure gradient lines, except for the bootheel, I wouldn’t expect low level shears to be an issue on this day but further investigation, such as checking the Temperature and Winds Aloft Chart or the Skew-T Diagram is always advisable. Mountain waves result from mechanical interaction between the terrain and the general wind. This interaction begins at the surface of the mountain terrain (ie: the ridge top) and continues up through the friction layer to as high as 6,000’ or more above the mountain terrain, or commonly to around 20-24,000’msl here in the Rockies. If conditions are right, it can go much higher. Mountain waves start forming when the general wind exceeds 20-22kts at any point in this layer of interaction. Thus, when planning a mountain flight it is wise to exercise caution anytime the general wind exceeds 20kts at ridge tops (pretty much any spring day here in New Mexico!) and to not challenge the mountain gods when the wind is 30kts or more.

DEC 22, 11:00 PST		
3,000	1°C (ISA-8)	226° at 10 kts
6,000	-5°C (ISA-8)	258° at 13 kts
9,000	-11°C (ISA-8)	272° at 19 kts
12,000	-16°C (ISA-7)	286° at 24 kts
15,000	-22°C (ISA-7)	289° at 32 kts
18,000	-28°C (ISA-7)	287° at 40 kts
21,000	-32°C (ISA-5)	292° at 55 kts
24,000	-35°C (ISA-2)	297° at 82 kts

Temperature & Winds Aloft Chart (Foreflight)

An additional concern with mountain waves is that they can create much stronger surface winds on the lee side of the mountain terrain. As we all know forecast conditions are not always realized but it would be a good idea to dig a bit deeper into actual weather conditions before flying anytime mountain wave formation conditions are present. Fortunately, with the advances in Doppler radar both wind shears and mountain waves can now be observed with quite a bit of accuracy and included in our weather briefings.

How should we use the general wind info?

1. Start by remembering that the wind forecast in the surface analysis is based upon NOAA's atmospheric soundings and therefore reflects only the general wind. Terrain induced friction and convective winds often affect the forecast general winds but not necessarily in an easily predictable manner. The 700mb (~10,000'agl) and the 500mb (~18,000'agl) constant pressure charts should be reviewed as well as the standard Surface Analysis Chart, and compared to the winds aloft forecasts in your briefing. Unfortunately the constant pressure charts are increasingly difficult to find and more often all you will have is the surface analysis graphic and a numeric winds aloft chart in 3,000' foot intervals. It takes longer and requires a greater effort at understanding on your part but by looking at the pressure gradients on the surface analysis and then assessing increased wind speeds, directions, and air temperatures at 9,000', 12,000', 15,000', 18,000', and 21,000' you should be able to build a fairly accurate mental picture of the pressure gradients aloft and the likely wind conditions that you will really experience in your mountain flight. As we will see next month the real time temperature and wind data provided by ASOS/AWOS and semi real time METAR includes the effect of the convective wind and is more accurate for actual surface conditions.

2. You should examine the synoptic winds at least 6,000' above your cruise altitude, usually up to at least 18,000' of 21,000' in order to reasonably assess the mountain wave potential. For the next few months, it is not unusual here in the southern Rockies for these conditions to exceed aircraft capability and the decision to safely fly or not should be pretty easy.

3. Use the general winds for fuel consumption/time en route calculations but do not expect these will be the winds you will experience as you approach/depart mountain airfields. You will need to consider the convective winds as well to determine approach and departure conditions as well as cruise within a few thousand feet of the terrain.

4. Always look for PIREPs before a mountain flight and compare them to the forecast conditions. If they aren't close, then you need to determine why not and adjust your flight planning accordingly.

5. Adhere to the 20kt/30kt rule. If the winds aloft forecast exceeds 20kts at the height of the surrounding terrain you should consider the possibility of mountain wave formation and both horizontal and vertical wind conditions that might be challenging. Caution is advised, especially if you are unfamiliar with the mountain route you intend to fly or have an underpowered aircraft (ie: less than 180hp). If the forecast is 30kts or greater at the height of the surrounding mountain terrain and on up to around 18,000+ msl you can bet the farm that you will encounter mountain wave activity along with its dangerous lee side rotors. The strength of this wave depends on a number of additional factors but you can count on a rough ride at best and expect that potentially dangerous conditions for all light aircraft will be encountered; experienced mountain pilots elect to not fly on these days.

6. Remember that the "surface winds" in our forecasts are actually the winds at the top of the friction layer, typically 2000'+ agl. These forecasts are an interpretation of the 850mb soundings which can be anywhere from 2000'agl up to around 5,000'agl. These winds, and those above, blow parallel to the lines of pressure gradient and in the mountains are rarely representative of the winds you will find at or near the actual surface. When evaluating potential crosswind conditions always check current ASOS/AWOS reports along your route.

7. Remember that NOAA samples the pressure gradients and resulting general winds only every six hours and a new forecast is developed. These are at 0000, 0600, 1200 and 1800 UTC. The data you are looking at in planning your flight could easily be up to six hours old. This is an eternity for wind conditions in the mountains. Also take into account how long your flight will be. You might have a fairly current forecast at departure, but it could be pretty outdated before your mountain flight is concluded.

This only scratches the surface of general wind theory and volumes more could be written. As we all know, weather is extremely complex, and the wind component is not always well understood or accurately forecast even by NOAA's professionals. The unique physical influences created by the mountains makes this task even more daunting. Safe mountain flight requires that the pilot take extra steps to understand the unique weather conditions that will be encountered in the mountains flight and their impacts upon the proposed flight. Of these, wind is often the most significant and frequently the most hazardous condition. There are several weather tools available from NOAA and third-party vendors to help gain an understanding of the likely general winds that will be encountered and what the flight results will be. Too often pilots who are new to the mountains do not take the time to identify these tools, to understand the information they provide (*understanding* level of learning), correctly apply this information to their flight (*application* level of learning), and to understand the consequences of the interaction between their airplane and this weather (*correlation* level of learning). The safe mountain pilot takes the time.

There are an almost inexhaustible range of academic and anecdotal materials available regarding weather and the general winds. The following references were used in developing this article and you might consider starting your journey to better understand the mountain winds with these. Some are a bit long in the tooth now, but the weather information remains valid.

Buck, Robert, *Weather Flying*, Macmillan Publishing Company, 1976
Collins, Richard, *The Next Hour*, Sporty's Pilot Shop, 2009,
Federal Aviation Administration, *Aviation Instructor's Handbook*, FAA-H-8083-9B
Federal Aviation Administration, *Aviation Weather*, Advisory Circular 00-6B
Federal Aviation Administration, *Aviation Weather Handbook*. FAA-H-8083-28
Federal Aviation Administration, Denver FSDO, *Tips on Mountain Flying* (video)
Imeson, Sparky, *Mountain Flying Bible*, Aurora Publications, 2005
National Wildfire Coordinating Group, *Fire Weather*, PMS 425-1
White, Dale and Florek, Larry, The Viking Press *Tall Timber Pilots*, 1953

Also:

Holicky, Ed, NOAA Aviation Weather Center, personal communication, 2022

Until next month, enjoy the mountains and fly safely.

Obscure and Scenic New Mexico

by Jeff Gilkey



Jeff Gilkey has been flying his Aerotrike Cobra (ELSA, weight shift control) since 2004. He has logged over 2400 hours on cross country adventures into nearly every corner of New Mexico, with many extending into Colorado, Arizona, Utah and Texas. For more information, visit his YouTube Channel at <https://www.youtube.com/user/jeffttrike>

Happy Canyon, Utah

Last fall (October 2023), I took a week-long backcountry flying and camping trip in southern Utah with friends. At the beginning of the trip, we flew upstream over Happy Canyon on our way to the Canyonlands Area. Towards the end of the trip, we returned to the area to fly down one of the tributaries of Happy Canyon and follow it downstream past the airport and on the to Dirty Devil River. Having scouted this remote canyon just a few days earlier, we knew the canyon bottom was mostly flat and clear, providing plenty of bail out options and had gentle turns along our path downstream.

The winds were calm and smooth that morning. Paul cruised up to the edge of the canyon and dove in. I was right behind him.

Over the edge



French Spring Fork



This upper tributary of Happy Canyon is called “French Spring Fork”. It has a gentle turn to the left (image above), followed by a second gentle turn to the right. Tall pinnacles rose above the canyon rim. The bright speck in the shadows ahead of my trike is the wing of Paul’s trike.

Second Gentle Turn



After the gentle turn to the right, we had a clear shot for 5 or 6 miles down to the Happy Canyon Airport.

Happy Canyon Airport



We overflow the runways at Happy Canyon Airport (UT97). This airport is maintained by the Utah Backcountry Pilots and has emergency supplies in the old wooden shelter. We have landed here on past trips, but today we pressed on down the canyon for the Dirty Devil River.

Slot Canyon



The lower end of Happy Canyon narrows into a slot canyon. I have wanted to check it out, but it's a long hike from either the Dirty Devil Airstrip or the Happy Canyon Airport to reach the slot canyon. Someone had a better idea – land a mini-helicopter near the entrance of the slot canyon on the Dirty Devil.

Landing at Dirty Devil Airstrip



We turned north, following the river to the Dirty Devil Airstrip. I was last to land and you can just barely see 3 trikes at the far end of the runway (Paul's, Bruno's and Adrian's.) Warning: The usable runway is only about 1000 feet long, ending at an abrupt cliff. Do not attempt without specialized training.

After setting up camp at Dirty Devil Airstrip, we took a thermally mid-day flight and very mellow sunset flight up the Dirty Devil River Canyon.

To be continued in next month's column . . .

Happy Canyon
Airport

Dirty Devil
Confluence

Dirty Devil
Airstrip

French Spring
Fork

Descent into Upper
French Spring Fork

FLY SAFE

Remember as "Pilot in Command", you are ultimately responsible for the safety of your passengers and aircraft. Proper planning with respect to the weather, terrain clearance and traffic hazards is critical to having a safe and enjoyable flight.

As the CFI sees it

by John Lorenz



John Lorenz is a 6000 hour CFII, MEII, glider, and sand-lot acrobatic pilot. He has given over 2000 hours of tailwheel instruction. During the day he is a consulting geologist.

PARTNERSHIPS

If you want to own an airplane but can't quite afford it, you can significantly cut costs, starting with the purchase price, by partnering with one or more like-minded pilots. Here's a short discussion of some of the many considerations for partnering in the ownership of an airplane. Most of my own partnerships have worked well: the Mooney partnership lasted compatibly for a remarkable 32 years during which membership varied from three to five partners, but there are horror stories out there too.

Start with the premise that everyone should be on the same page with how the operation and its finances will be run, which means that there should be a written partnership agreement. Some groups go whole hog and form legal entities to own/operate the airplane, others just print out a written agreement for everyone to sign and have a copy of. Without a written agreement it's easier for partners to get crosswise over misunderstandings. Agreements can specify the following:

Scheduling: How will scheduling be done? Is one of the partners a designated scheduler, will everyone use a scheduling app? First come first served? Or does one partner in rotation have priority each month in case of conflicts?

Costs: The fixed costs of owning an airplane, i.e., costs to be born whether or not you fly it, include hangar, insurance, annual inspection, and registration. Per-hour flight costs consist of fuel, oil, maintenance, and maybe an engine-rebuild reserve. One way to cover these is to charge everyone a monthly fee to cover fixed costs, and an hourly fee for the hourly flight costs. This helps compensate for disparities in usage of the plane between partners.

Finances: will there be a bank account kitty to pay bills and accept everyone's payments for flight time and monthly fees? Who manages the account, reminds people to pay up, and pays bills?

Major Repairs: For standard wear and tear, major repairs will be assessed at 1/4 cost per partner at the time of occurrence. Upgrades (agreed on by all partners) will be paid for in the same way. For accidents, the pilot in command is responsible for the insurance deductible.

Insurance: We are carrying \$10,000 hull damage insurance (deductible is \$500 in motion, \$100 not in motion), and \$1,000,000 liability.

Scheduling: Each partner in rotation will have a month of priority flying: other partners will phone this man to see when the plane is available, on a first come-first served basis. We will keep a priority-month schedule in the plane. Generally, flexibility is the key: if a partner's mother-in-law is in town for a day and just has to be taken flying, try to accommodate the poor guy. If the priority partner will be out of town during part of his month, especially on a weekend, call the others to let them know to schedule with the partner who has the following month's priority.

Excerpt from one of my early partnership agreements, for a Taylorcraft. The insurance value of \$10,000 dates it to the mid 1990s.

Maintenance: Who keeps track of the required maintenance such as oil changes and annuals? Who arranges for a mechanic to take care of issues?

Sell-outs: How will you handle it if someone wants to sell their share? Do the other partners get right of first refusal for that share? At what cost, the original buy-in value or adjusted up for inflation/down for wear and tear? Do the other partners have the right to vote down on prospective a replacement partner?

Buy-ins: How will you handle it if the airplane is not being used as much as anticipated and there's room for an additional partner?

Use: How will the airplane be used? Can partners take lessons in it? Can a CFI partner give lessons in it? Can it be taken on long cross-country trips? Can the airplane be loaned to pilots outside the partnership?

Fuel State: After a flight, will the plane always be left full of fuel? Will fuel be part of the hourly cost to the partners regardless of actual per-gallon cost paid at different airports, or will fuel for each flight be the flying partner's responsibility? We found fuel costs, even at recent high levels, to be a small consideration in the sum cost of ownership, plus it was more hassle than it was worth to try to keep track of pennies, so it was simpler to just lump all fuel costs into the per-hour wet rate we charged ourselves.

Insurance: The partners need to agree on hull value and the limits of liability that will be carried. If there's an accident, will the accident pilot or the kitty pay the deductible? A low-time partner may drive up the premium, especially for a complex or high-powered airplane: does that partner need to cover more of the premium for a couple years?

Disbandment: How will you handle selling the airplane if the partnership decides to disband? How will you handle a partner's share the partner is hit by a bus?

Abuse: Most partners will treat the airplane well and abide by the agreement, but it happens that someone may consistently "forget" to re-fuel after a flight, or may loan the keys to a friend: how do you exclude such a partner? A difficult discussion, but better to have it now than figure it out on the run.

Work parties: What about getting together for a Saturday to change oil, change tires, open up for annual inspections? Is everyone willing to contribute this kind of sweat equity to the partnership?

Partnerships usually work because most airplanes don't actually spend much time in the air, find some friends and go for it.

Meanwhile, even on a calm day, tie it down. A big twin turbo helicopter taxied by my plane recently, would have blown it to Oklahoma if it hadn't been tied down for the 15 minutes it took me to duck into the FBO for a cup of coffee.



Work parties are a good way to learn the workings of both your airplane and your partners.

CFI Resource List: A Member Benefit for Students and CFI's

NMPA Certificated Flight Instructor Resource List updated 3-28-2020
NMPA members who are CFI's and who would like to be listed here, or who need to modify their information, please contact John Lorenz at johnlorenz@geoflight.net



Instructor: Suzanne Azar

Contact: email suzanneschmeckazar@gmail.com

Primary areas of instruction: *Private, Commercial, Instrument, Multi-engine Instrument*

Airports you instruct at or will travel to: *El Paso, TX, Santa Teresa, NM, and Las Cruces, NM*

Do you have access to an airplane for instruction and if so what kind: *Cessna 172 and Cessna 182*

General summary of experience: *I have been a pilot since 1980 and a flight instructor since 1984. Among my many students I taught both of my daughters to fly. I have flown numerous air races through the US, Bahamas, Hawaii, and Canada. I hold a commercial pilot's license and am rated in single engine, multi-engine, glider, and seaplane, with an instrument rating. I fly a Lancair IVP a pressurized, retractable, high-performance composite experimental as my personal aircraft, and instruct in Piper and Cessna singles. As a Multi-engine Instructor, I have flown many aircraft from the 1956 Apache to a 690B Rockwell Commander turboprop. I also hold licenses as basic and advanced Ground Instructor and have earned the FAA's "Gold Seal" flight instructor license.*

Instructor: Mike Dellas

Contacts: (505) 699-7297, captdellas@aol.com

Located at Santa Fe (KSAF)

General summary of experience: *Currently flying for AAL, experience in Aeronca Champ to a Twin Beech D18/Douglas DC-3 and aerobatic planes such as Citabria and Decathlon, owned and operated a Luscombe, C-180, and C-310 including instruction over 45 year flying career.*

Instructor: Scott Burnett.

Contact: email ssburnettnm@gmail.com

Single and multi-engine CFI teaching in the student's aircraft. Specializes in tailwheel and Maule check-outs, private instruction, and ferry flights. Located at Mid Valley (E98)

Instructor: Peter D Murphy, contacts peterdenismurphy@gmail.com, 505-946-7777. CFII MEII LSP. Flight Design CT

Instructor: Diane de Souza - Taos - contact info is dyeingtoweave@gmail.com

"Information about these CFI resources is provided for the benefit of our CFI and student members. The NMPA and its officers do not endorse any of these resources. We urge all members, CFIs and students, to use good communication skills and show respect in all of our engagements with other members."