Editor Bert Osborn

PUTTING WINGS ON YOUR DREAMS

VOLUME XV

ISSUE 5

Submitted by Jim Hudson
Membership and Safety Director -

Density Altitude
Turns Bold Pilots into Old Pilots real quick.... If you Survive !!

It's that time of the year again when things heat up and we start to feel the effects of Density Altitude. Not much has changed with DA, so I'll refer to the link on the club web page, site index, for the article that I wrote and have updated the last several years. http://www.t-craft.org/Reference/DA_Safety.pdf Also, look at the Bruce Meadows Crash in 2012 link in the article, or download the file Bruce_Meadows_Crash.wmv

From the FAA Safety Team | Safer Skies Through Education http://FAASafety.gov

Double Click for Safety
A shoulder harness is your ticket to a long career in flying.

A shoulder harness is your ticket to a long career in flying.

Years ago, it was commonly held that you were actually safer if you were ejected from the vehicle during a collision! Now it feels uncomfortable to move a car even a short distance without being strapped in. So it is a bit of a surprise to find that many of the same pilots who drive their vehicles to the airport while buckled and secured do not attach their shoulder harnesses when they go flying. We know that to be true because aircraft accident investigations often reveal the sad reality—survivable accidents aren't survived, and the ever-present crew shoulder harnesses that are required to be installed on all aircraft manufactured after the dates specified below have been neatly tucked away or secured behind the now-deceased pilot's seat.

§91.107 Use of safety belts, shoulder harnesses, and child restraint systems.
https://tinyurl.com/ybzzdfxo

The FAA has estimated that roughly one third of all general aviation accidents with fatalities would have been survivable if the pilots had been using their shoulder harnesses.
www.faa.gov/aircraft/gen_av/harness_kits/system_accidents/

For cars and aircraft, **it is the secondary collision that kills**. The dynamics of the deceleration sequence in a sudden-stop accident are straightforward and have been well understood

for a long time. The vehicle (either car or aircraft) undergoes a sudden and complete deceleration during contact with an immovable surface (ground or water).

The driver or pilot is still moving forward at the original velocity and now pivots from the waist, where he or she is secured only by the lap belt.

No one is physically strong enough to prop themselves up against the high g-force deceleration that may occur during an accident sequence, so heads and arms strike the dashboard or instrument panel violently.

These days drivers and their passengers may be saved by airbag deployment, but that is not the case in most aircraft. Pilots are often rendered unconscious or unable to extract themselves from the wreckage due to serious injuries or shock. Hypothermia, drowning or fire is often the second and final complication for the incapacitated crew and their trapped and panicked passengers.

Pilots of some airplanes have pointed out that the layout of the instrument panel and controls make it impossible to reach those controls when the shoulder harness is attached.

It is strongly suggested that you include a line "shoulder harness–fastened" on your pre-flight and pre-landing checklist and keep it attached whenever the aircraft is in motion, particularly during takeoff and landing. If you have to unfasten your shoulder harness when it interferes with cockpit duties, get into the habit of reattaching it as soon as you can. The risk remains that not attaching or removing your shoulder harness for whatever reason and continuing to fly without it will multiply the severity of any crash, perhaps, and most sadly, beyond the point of survival.

Henrik Vejlstrup, FPM, Purple Team.
412-886-2580 x 206
henrik.vejlstrup@faa.gov

T-Craft has installed dual restraint shoulder harnesses in all of our aircraft, except the C152, which has the standard equipped shoulder harness. (Dual restraint harness kits are not available for the C152).

Be careful out there, keep your head on a swivel, fly safe and don't do anything stupid.

Jim

From Jason Hull: Laser Attack

Last night (5/29) John Moen and I were doing some night refresher/currency work in 93F when we were hit by a green laser. It happened on our crosswind-downwind turn off of runway 29. I was looking backward to see his groundtrack trying to gauge winds and angles and I got hit in the face (thankfully not in my eye), fortunately John was looking forward and didn't see it. It was on us/in the cabin for less than 5-7 seconds. It only happened once, and we went around about 6 more times.

The guys at Boise FSDO were concerned, it's not an isolated incident. They did say that any laser or light activity aimed at an aircraft is illegal so they "may" contact the local authorities. They did want me to spread the word that any laser incident should be reported to the FAA or local controlling authority immediately.

June 2018

S	M	T	W	T	F	S
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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Calendar of Events:

The next membership meeting will be Tuesday, September 25, 2018. The next board meeting is June 12..

06/10/2018 – Accounts due
06/12/2018 - Board Meeting
06/20/2018 - Accounts past due
06/26/2018 - Membership meeting

June 2nd. Mountain Home AFB Gun Fighter Air Show

June 8-9 Garden Valley Fly In
June 9 - Buhl, Idaho Fly In
June 15-16 is the AOPA fly in at Missoula Montana.

If you have any ideas for safety meeting presentations or would like to arrange a presentation, contact Membership/Safety Director Jim Hudson

Fuel Reimbursement
$4.48 per gallon.

Articles or Pictures

If you have any pictures or articles for the newsletter submit them to Jim Hudson or Bert Osborn.

Ratings:
15 Student Pilots
68 Private Pilots
01 Recreational Pilots
12 Commercial Pilots
09 Air Transport Pilots
31 Instrument Rated Pilots

Member Statistics:
105 Members
17 on wait list.
36 Class I Members (36%)
70 Class II Members (64%)
08 Inactive (voluntary suspension)
16 Suspended (BFR/Med/Attend/Billing, Including 6 Inactive)
6 Social Members (non flying, not included in "Members")

(Please report any BFR's, IPC's, Upgrades, or new ratings to Jim Hudson or Bert Osborn)

Ratings
15 Student Pilots
68 Private Pilots
01 Recreational Pilots
11 Commercial Pilots
10 Air Transport Pilots
32 Instrument Rated Pilots

BFR
Gary Blecha
Cale Dobson

New Members
Brad Mabe - Class I Private Pilot
Charlie Wambolt – Class II ATP
Bill Howard – Class II Private Pilot

Scheduling

It's getting into the busy time of the year in the use of our birds, and other areas of our lives. Members are forgetting they have a plane scheduled and are not canceling their schedules!! Some reminders on scheduling. Please keep track of your scheduled appointments and cancel your schedule as soon as you know you cannot make it. If it seems like bad weather and no one might want to fly in it, cancel your schedule anyway, you never know there might be someone wanting to do some instrument training, or some other reason another member would like the plane. You should get two email reminders frim schedule master; 5 days and 1 day prior to your appointed schedule. If you forget when you're scheduled, you can get a listing of your schedules by selecting "My Schedules" from the Schedule Tab.

Safety is top priority, and canceling at the last minute due to weather forecast is understandable and will not be questioned.

* A reminder that club policy allows another member to take the plane if no/show in 30 minutes. Also, a 1 hour/day fee at the rate of the plane you have reserved may be assessed you do not fly as scheduled.

* If you are scheduling multiple days your flying hours should be equal to or greater than the days reserved. For example, if you have the plane from Friday evening through Sunday you should have 3 hours or more. This is meant to discourage short trips, say to McCall for several days. This is not a written policy but is a "guideline" rule we have tried to meet respecting other members access to the aircraft.

* Do not block out time you are not sure you will use. Blocking out aircraft so it is available "just in case" makes it very difficult for other members to plan time to use an aircraft. If pilots block out multiple weekends weeks or even months in advance and then cancel some of the trips at the last moment has a very negative impact on other members resulting in complaints.

* For those of you having trouble scheduling aircraft. Check with the pilots who have the slots you are interested in and see if swapping planes or schedule adjustments could potentially meet both members needs.

Schedule Master – 90 Day Attendance and Day/Night Currency

Some of you, in fact most by now have probably received email notices from SM that you're 90 day T-Craft attendance will expire on a certain date. A field was set up in the Status tab to show that expiration date in. This is a way to keep track and notify you of your upcoming 90 day attendance expiration date. You'll get a notice 30 day prior to that date from Schedule Master. You should also get a message after that notice when you log on to Schedule Master. As per club policy, your scheduling and flying privileges will be suspended if you exceed this date, and any future schedules will be canceled if you're suspended.

There are also two fields that you can use to keep track of your 90-day, day and night currency for carrying passengers. You can use those two fields if you wish to enter your expiration date and receive a notice 30 days prior to that date. Students can use the 90-day currency field to keep track of your 90 day endorsement to continue to solo.

Billing Director – Reggie Sellers Reminders:

Flight Log System: it is very important to log the plane out before your flight and then back in when you've finished the flight. Many are waiting until they get back from their flight to log the flight in and out. One reason of logging out before you leave lets us know your destination in case we need to get hold of you for some reason. If for any reason the computer is down, log your time in/out on the paper form near the computer, and let me know.

Contact information in Schedule Master: Our billing system is linked to the contact information in schedule master. Please inform me or Membership director Jim Hudson if you change any part of your Name, we can make the change between systems. You can make other changes in your contact information yourself.

From Member Lan Smith

Fellow flyers,

I am missing my Light Speed Zulu2 headset. I believe that I left it in 375 (the 152) in October. If you may have picked it up, please get it back to me by any means you feel comfortable. There will be no questions asked.

Thanks. Lan Smith (208) 365-1754 email: lsmith5833@msn.com

Aerospace Career Exploration

Aerospace Career Exploration (ACE) Academy is run by the Idaho Department of Aeronautics, and designed to introduce high school students to aviation and space related careers. As a participant in the ACE program, activities may involve field trips, forums, and a hands-on satellite project. This is held in several locations in Idaho and Oregon, see the web site and application for more information. In Boise, this is a 3-day event, with the final day consisting of a flight from Boise to either Smith Prairie, Idaho City, Garden Valley landing at Nampa for a tour of the War Hawk Museum. The flights are made by volunteer pilots. I have been doing these flights for about 15 years, and one of the students had become a T-Craft member at one time. Ken Kaae has also volunteered for several fights. This year the flights will take place on June 15th. If you would like to volunteer, let me know. You have to be BC Level 1 to fly T-Craft Aircraft. If you know of a student who you think might be interested in the program, the application and more information is listed below.

See the Application form for more details about this year's ACE Academy or go to the Aerospace Career Exploration (ACE) Academies website

- ACE Application – **Due by May 1, 2018** (even though we're past the deadline, there may be a chance of getting in – contact Tammy)
- For further information about this annual event contact Tammy Schoen: 208-334-8775 or tammy.schoen@itd.idaho.gov

New AME

Club Member **- Mark Turner M.D.** Contact 208-631-7762

Garden Valley – Fly-in / Breakfast June 9th

Four planes are still available to schedule to fly up for the event. Contact Jim Hudson if you would like to schedule a plane. You have to have a BC level 1 or have the GV exemption checkout to fly up or arrange for a BC CFI to go along with you. Jim Hudson, John Baglien, and Gordon Hall will be there to give free instruction. At the event, any member can participate in the flying festivities, however if you're not BC rated, you'll have to go with a CFI (no CFI charge). You can drive up and camp, or if you have a RV, you can park outside the airport perimeter, but still use the facilities. They have very nice restrooms including showers. Some members go up Friday and camp overnight and have a pot-luck dinner and tell tall tales around the campfire. The breakfast is Saturday morning, with the flying events to follow. The events are a bean-bag drop contest and landing contest to see who can land closest to a mark, if you're short of the line, you're disqualified. Winners receive a free hour of flight and their name engraved on a plaque. The Top-Gun award is given to the pilot with the best over-all combined score in the events.

CARE OF YOUR AIRCRAFT
Take Time After You Flight

We are continuing to see many instances of lack of care and taking the time to make sure that you're (and our) planes and hanger are put away properly. Gust locks, pitot tube covers not installed, flaps left down, doors not locked, seat belts not put away, master left on = dead battery, avionics master not turned off, lights not turned off (except its advisable to leave the beacon light on as a warning the master was left on), bugs not cleaned thoroughly from all leading edges, windows streaked, dirt and trash not cleaned out (plane and hanger), fuel card or keys missing from the key bag, key bag not zipped or put away, hanger door pins not fully secured, hanger lights left on, the hanger itself not locked, lock code not returned to 0000. There should be no need for any such reminders, as a matter of common courtesy we should leave an aircraft in a clean condition after we have flown it. We learned as early as first grade, if we create a mess, we clean it up. That's the grown-up thing to do. PLEASE take you time when ending your flight and be vigilant on taking care of these items.

PLEASE REMIT PAYMENT IN FULL BY THE 10TH OF THE MONTH.

Your account will be PAST DUE if not received by the 20th and there will be a $10.00 late fee. There will be a finance charge if your account is over 30 days past due and flying privileges will be suspended

PLANE WASH

We had a record turnout at the last plane wash. The planes were scrubbed and returned home in record time. Thanks to Vivian and Ben Brandt for the pulled pork lunch.

T-CRAFT STATS

Top 3 flyers

Reggie Sellers reported that the top three flyers for the month were:

Jiyun Li	11.3
David Thomas	11.2
Tad Jones	10.7

The top three aircraft flown were:

13686	42.2
67375	34.2
1293F	28.9

The top billing aircraft were:

7593S	3489
9989E	3172
13686	2996

President's report on the state of the Hangar

President Brandt reports that 60% of the steel cost for the hangar has been paid. When delivery is made we will have to pay the last $35,000.00. Since the costs have been locked in, any wait will not cost us money, but will give us more time to accumulate funds and we will be required to borrow less to finance the remainder of the hangar The city has the plans and made a couple of adjustments. There may be a ground breaking in 2 - 4 weeks. We had to do a cultural evaluation of the old building that is being torn down. If we had torn it down two years ago, there would have been no issue, since it was only 49 years old. Now it is 51 years old and we have to be careful that we are not destroying a piece of Nampa history. The old windsock will be coming down.

The search for the 8th Aircraft

The aircraft search committee has made its recommendation to the club and has recommended a 6 place aircraft. As has been previously reported, T-Craft is not in a hurry to purchase aircraft number 8 immediately. Right now we don't have a place to park it and we will probably not be actively pursuing a new aircraft until later in the year. After polling the membership, the aircraft search committee had recommended a 6 place aircraft. A Cessna 206 had been recommended as had a Cherokee 6.

New Rates

As with auto fuel price increases, aviation fuel has also increased, which obviously raises our hourly rental rates. Our T-Craft rate is $4.48/gallon, an increase of 22 cents- not bad considering the jump in auto fuel. This will be effective at the start of our June billing period 5/26/2018.

The board has adjusted the rates for each aircraft as follows:

Cessna 152	N67375 +$1.00	$61.00
Cessna 172M	N4464R +$2.00	$71.00

Cessna172M N13686+$2.00 $73.00
Cessna172N N1293F+$2.00 $84.00
Cessna 182H N1891X+$3.00 $119.00
Cessna 182P N9989E+$3.00 $125.00
Cessna 182Q N7593S+$3.00 $125.00

REMINDER-We receive a significant discount from the AV Center published prices. PLEASE REMEMBER TO REMOVE YOUR FUEL RECEIPT from the fuel pumps so others will not see our fuel price. Also, please do not broadcast our price to non-members.

HOURLY RATES (Effective 5/26/2018)

N4464R
$61.00

N13686
$71.00

N67375
$73.00

N1293F
$84.00

N1891X
$119.00

N9989E
$125.00

N7593S
$125.00

SQUAWKS

375 - The altitude encoder has been replaced. The ADS-B appears to be working again. The pilots seat locking device had broken and was repaired.

686 - During the annual the turn coordinator and the mixture control were replaced. We Replaced the flap servo mechanisms and the nose tire. The passenger side PTT was repaired. 686 was re-certified for IFR flight. The flap switch was replaced and switch motors were repaired and replaced.

89E - Finished its annual. The prop cable was replaced with a new one. Center console is on hand with installation to be determined. Should be done during the next 100 hour inspection.

93F - The passenger door arm rest was repaired. 93F suffered a dead battery after the master was left on. We installed a new LED beacon and repaired the pilot side window latch.

64R - The muffler was cracked beyond repair and is being replaced. The right side flap was serviced and is functioning normally. The engine is still as strong as ever. The mechanic is monitoring the engine closely. Cylinder compression remains strong and oil consumption is unchanged.

91X - Has been released to the club for flying. During her annual 91X had the audio panel replaced. The windscreen has been replaced. The lower plugs were removed and examined. They looked good. The baffling was repaired during the annual. We replaced the #2 probe on the EDM engine analyzer. Mike Metcalf painted the wing tips during the Annual.
A revised operating check-list is available on the club webpage, under the Fleet Tab.

Remember to report squawks on schedule master. The old clip boards for reporting squawks have been retired.

Aircraft annuals have been scheduled and calendared through August.

MEMBERSHIP DUES

At the Annual meeting in 2018 the membership approved continuing monthly dues at $60.00 per month. That rate combined with the low hourly rates (effective January 26th) for our aircraft, makes T-Craft the leader in high quality, low cost flying. Thanks to our Treasurer Dennis Wheeler for negotiating our lower fuel prices, and the great maintenance under the watchful eye of Maintenance Director Jim Eyre.

OFF FIELD FUEL REIMBURSEMENT

If you purchase fuel off site you will be reimbursed at the club rate per gallon, currently at $4.48 per gallon. In order to get the reimbursement, send your receipt(s) to the club mail address to the attention of Reggie Sellers, or scan a legible copy and email to Reggie Sellers. DO NOT put your receipt in the club pouch, these are for Nampa fuel receipts only and your personal receipt will probably get lost.

Remember. You use your credit card to purchase your fuel offsite. Submit the bill to Reggie and he will give you proper credit.

Some Aviation Axioms—And Opinions

RICK DURDEN

Nearly 20 years ago I began writing a column—The Pilot's Lounge—for AVweb
It eventually evolved into the position of Features Editor and writing two or three feature articles each month. As a result of my association with AVweb, I've been fortunate enough to meet many of the fascinating and delightful people that characterize aviation, learn a great deal from them and fly some memorable aircraft. I've also been lucky enough to be nearby and watch as flight worked its magic on people—widening eyes, softening harsh expressions and enriching lives.
As a pilot who has flown a wide variety of aircraft, spent some time as a freight dog and much more as a flight instructor, and as an attorney working in the world of aviation, I've written about the things I've learned, sometimes the hard way. I happen to like flying tailwheel airplanes and airplanes on skis and floats, so a fair proportion of my articles have been about techniques for flying those machines. As an aviation attorney I've looked into the causes of numerous accidents and worked with true experts in the fields of aircraft design, flight test, crashworthiness, pilot performance and human factors, so those became the topics of many of my articles.
I was recently asked to list what I considered, as a pilot and lawyer, to be some of the more important truths of aviation that a pilot should know and follow to help him or her get as much joy as possible out of flying and avoid as many of its pitfalls as possible. The following is that list—subjective of course—more than a little cynical, but as blunt as I can be. And, I couldn't help it; I tossed in a few opinions.

Weather

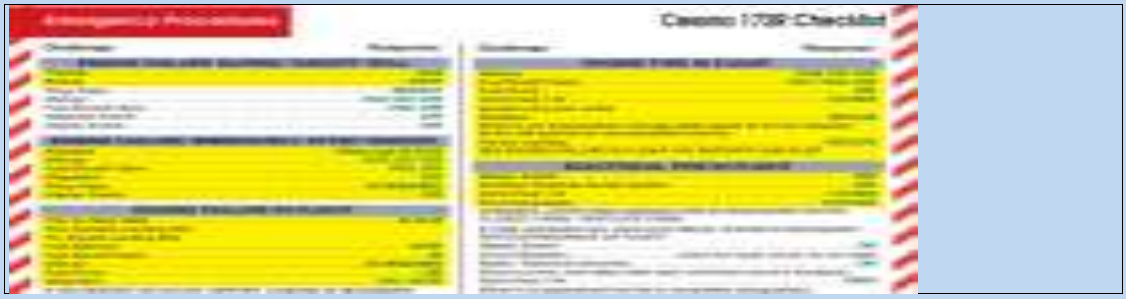
The weather is not going to get better in another five miles.
If you are trying to scud-run, the weather will get worse.
Towers and power lines are affected by weather: They get taller and move nearer to highways, railroad tracks and airports when the ceiling gets very low.
You are most likely to discover an unlighted tower when you are trying to fly low because of weather.
Power lines are invisible against backgrounds other than bright blue sky.
Scud running used to be a reasonable method of getting to one's destination in the flatlands of our country—now with the stunning proliferation of towers, particularly near highways, it is foolish. To do it with any regularity is suicidal.

One close encounter with a tower or a set of power lines appearing out of the haze or fog when scud-running, or going below minimums on an instrument approach, will give you years of the most hideously vivid nightmares you can imagine.
It's not the smartest thing in the world to duck under the glide slope after breaking out of the clouds so as to land short. Many more airplanes crash in the approach lights after an ILS than go off the far end of the runway. There are no prizes for the shortest landing following an ILS.

No matter what the weather, there is less gas in the tanks than you hope.
Especially if you are professional pilot, the worse the weather, the more likely it is that you will have a vocal passenger insisting that you go.
The posters on the walls in Air Force Flight Ops rooms were right: There is no reason to fly through a thunderstorm in peacetime.
When making a decision regarding weather, an effective tool is to ask oneself if this might lead to looking stupid in the NTSB report.
Being introduced to flight in ice by an instructor under controlled conditions is hugely valuable and probably a violation of the FARs. It is far, far better than trying to learn about it vicariously or as you start getting ice on the airframe for your first time without an instructor next to you.
If you do get ice on the airframe, do not use the flaps on landing. Go fast and do not reduce the power below what you carried on final approach until the wheels touch the runway. Pulling the power off in the flare will probably cause you to stall and plummet the last few feet to the runway with enough force to collapse the landing gear.
It's always better to turn back too early than too late.

Reality
Departing with one component of a redundant system out of service has a strange way of making the other one fail in flight.
When flying a tailwheel airplane in a crosswind, hard-soled shoes are an invitation to a ground loop.
Even pilots who fly every day need recurrent training. It's the stuff you don't do every day—emergency procedures—that will eat your lunch.
The longer it’s been since you took recurrent training, the greater your risk of an accident—especially one involving runway loss of control. As a pilot, the greatest gift you can give yourself, your family and your passengers is recurrent training every six months.
The human is the weak link in the airplane performance equation—the only way to strengthen it is regular training.

Read everything you can about aviation. AVweb's archives are a treasure trove, especially John Deakin's engine articles and Mike Busch's maintenance pieces.
Despite what fighter pilots say, it's better to be embarrassed than dead.
Saying "any traffic please advise" on Unicom is a waste of words and air time—it gains you nothing that you would not get from a simple position report and it aggravates enough pilots that those who would be of interest to you may say nothing.



Work sample weight and balance problems for any airplane you fly—inadvertently loading an airplane out of the forward or aft CG limit is a mistake that you may only get to make once. The only four-place airplane of which I am aware that you cannot load out of its CG range without putting anvils on one of the seats (or more than 120 pounds in the baggage compartment) is the Cessna Cardinal. As with every airplane you can, however, overload it.
A turning propeller is invisible. Nonpilots are known to walk into them. So are pilots.
Use all the power available on takeoff. The engine was built for it and needs that extra bit of fuel provided at full throttle for cooling. A partial-power takeoff in a horizontally opposed engine is harder on the engine than using full power. It also slows acceleration and rate of climb, prolonging the period of time of high-temperature operation.
The small problem with your airplane that you have delayed fixing will become a major problem at the most remote airport on your trip.
Trying to argue with a controller over the radio is akin to shaking your fist at bad weather; you can't win and you run the risk of making things worse.
Lean-of-peak engine operations are the best way to run your fuel-injected engine. Those who haven't caught on yet may simply be unable to learn or just unwilling.
(Note: Never run T-Craft Engines Lean of Peak)
There is no need to say "with you" when contacting a new controller. It's redundant, uses up air time on increasingly crowded frequencies and most controllers are sick of hearing it.
The world looks different when flying very low and trying to maneuver radically down low. For instance, turning back after an engine failure on takeoff, when you haven't practiced it, has a distressingly high fatality rate.
While speed may be life to fighter pilots, that's only in combat. The reality is that appropriate speed is life: too little after takeoff kills, as does too much on landing. Extra speed on final is not your friend, because energy is a squared function. You've got enough energy to dissipate on landing when touching down near stall speed; anything faster is adding to your challenge. Use all the flaps on landing; they help dissipate that energy effectively.
A pilot who intentionally frightens a passenger is nothing short of a sadist. The victims often come away from the flight despising aviation and may well join the groups that seek to close airports.

Aircraft Ownership

There is a lot of junk for sale out there. Insist on lots of photos and copies of the logbooks before traveling to look at an airplane. Interpret resistance to such a basic request as the owner trying to hide something bad—walk away.

Have a prepurchase exam done by a mechanic who knows the aircraft type and that you select—not that the seller selects. Do not ever omit this step when buying an airplane.

Budget one quarter of the purchase price of a new-to-you airplane for repairs that you will have to make in the first year—more if you are planning any upgrades.

Buy insurance—there is no magic bullet to protect yourself from liability if you have an accident. Having the airplane owned by a corporation does not protect you from liability if you were the one flying it. The rule is simple: If you have a risk, insure the risk. You own an airplane. That's a risk. Insure it.

Insure the airplane for its full value. Underinsuring it means that what is otherwise minor damage may mean that the cost of repairs is so close to the insured value that the airplane is effectively a "total loss" and you either get paid the insured value and have to give up the airplane or pay for the repairs out of your pocket.

Buy "smooth" coverage to get the full benefit of aircraft insurance. A "sublimits" policy—typically $1 million overall with $100,000 sublimits—only gives you $100,000 coverage for each individual hurt in an accident, not $1 million. Because you rarely carry more than two or three passengers, having a full $1 million available to settle lawsuits may mean the difference between a routine settlement and losing your house.

When it comes to the cost of maintaining an airplane, think of what it would cost to buy your airplane new, now. That is the airplane you are maintaining.

The Ugly Stuff: Crashes

Fuel tanks in a tank in front of the cabin or in wing leading edges are an invitation to post-crash fire. Nylon and polyester clothing melts in the presence of intense heat and sticks to you, causing serious burns.

It's been said by so many because it's so true: Fly the airplane all the way into the crash. So long as it's moving, never give up trying to control the airplane and making it go where you want to go.

Shoulder harnesses have done more to reduce the degree of injuries in aircraft accidents than any other safety device. Not insisting that your passengers wear their shoulder harnesses may subject you to liability should you have an accident. Not wearing an available harness has proven terminally foolish for too many pilots. It may be possible to retrofit shoulder harnesses on an airplane you own.

For example, shoulder harnesses can be retrofitted on all seats for all single-engine Cessna airplanes (and the Skymaster) back to the 1945 model year. The hard points were put in at the factory. Check our sister publication, Aviation Consumer, for more information.
Especially in a twin, if you have to put the airplane onto the ground, do it as nearly wings-level as possible and do not stall the airplane prior to touchdown. Airplanes, even old ones, are surprisingly crashworthy (if shoulder harnesses are worn) but not if you hit upside down or with a substantial vertical vector (as after stalling).

If you have to land the airplane gear up, do so on a hard-surface runway. If you screw up and stall, the runway will translate the force into a slide. On grass or dirt there is the chance the surface will compress slightly, forming a crater and then stop the airplane very quickly, injuring the occupants.
To the extent I have been able to chase accident records, there hasn't been anyone hurt in a gear-up landing of a civilian airplane since World War II—so long as the pilot did not try to "save the prop" by shutting down the engine(s). There have been a number of fatal accidents when pilots shut down the powerplant and proceeded to crash short of the runway or go off the end at high speed.
Going around if the approach isn't just right is never, ever an indication of incompetence unless, of course, you are about to run out of fuel.
There are Neanderthals in this world who will gather to critique landings and make snide remarks about pilots who go around. There have been accidents at flight schools and airports where this practice takes place because pilots pressed on and landed out of a bad approach because they knew they would be laughed at for going around. I'm hoping that there's a special circle of hell for pilots who criticize other pilots for making a go-around.
Successfully managing energy in the process of coming to a stop is the key to any landing—or accident. Slow is always better than fast when it comes to surviving. Going off the end at 25 knots is better than crashing short of the runway at flying speed.
As old airplanes get more valuable, if you wreck a true classic or antique—especially when doing something dumb—don't be surprised when more sympathy is expressed for the loss of the aeronautical work of art than for you. After all, you may just be the product of unskilled labor.
Even the slowest airplane goes fast enough to kill you and thus the most modest trainer deserves the same operational respect as the Mach 2 fighter.

Pilots
A fairly effective way to spot low-time pilots at an aeronautical gathering is to look for the ones sporting shirts and hats covered with patches and wings. Another technique is to watch for the ones who start their aircraft engine at other than nearly idle RPM.

A pilot with any poetry in his or her soul knows that it is always appropriate to quietly thank the airplane for a flight after putting it away. In fact, some assert that those who do not do so may have no soul and should not be allowed in the sky.
The clichéé is depressingly true: The chances of making a superb landing are inversely proportional to the number of people watching.
If a pilot has not practiced something, the accident reports make it clear that the chances that he or she can do that something in an emergency are lousy—be it scud run, turn back following an engine failure after takeoff or stop the prop and make a safe landing when the gear won't come down. A lot of people get killed each year trying to do something brand new when they have an emergency. So, go with what you know and have practiced, even if it means damaging the airplane. That's why insurance exists.
When in doubt about a clearance, ask. Even a snide remark from a controller (which happens to be extremely rare) is not nearly as embarrassing as a violation for deviating from a clearance or, worse yet, smacking into another airplane.
Pilots who have spent time in gliders and tailwheel airplanes tend to be much better stick and rudder pilots than those who have not. Significantly better.
Most pilots who make jokes about helicopters are secretly jealous and deep down wish they had the opportunity or money to fly them regularly.
If you do something moronic down low, such as buzz someone or something, don't be the least bit surprised if someone complains. With cell phone cameras and small video cameras, there's a good chance that when they do complain they'll also have the evidence to convict you. Remember, in the 1978 PSA San Diego midair, the 727 descended steeply, on fire, for fewer than 30 seconds. There are good-quality photographs of it. Nearly everyone carries a camera now.

Of Flight and Life
If you care about aviation, attend the local airport board meetings and try to become a member. Pilots are a tiny minority within the population and have to stay involved with the politics that affect airports and flight. Standing around and complaining doesn’t help—decisions about airports are made by the people who show up.
It is almost invariably worth it to get up very early so as to be the pilot in command of an aircraft taking off at sunrise. At the moment of liftoff the world transforms itself from black and white to full color. It is especially true in a balloon.

We are always ambassadors for aviation, for good or for evil, simply because there are so few of us. Our actions are watched and we are the source of comment, often when we least expect it or maybe even want it. Therefore we have no choice but to be a good example all the time.
The round rainbow around your airplane's shadow on a cloud is called a glory. The first time you see one the name will make eminent sense.

Pushing the prop to high RPM on downwind makes much more noise than you realize and pisses off far more people than you can imagine. And they are the ones who will vote to close your airport.
Spend as much time as possible on grass runways. They are good for the aviator's soul. If you can, take a walk on one (yes, avoid airplanes) and think about all of those who have come before you to use it as a place to reach into the sky. You might also consider it to be more than just a strip of grass, but as a place from which you can launch in the most modest of airplanes and proceed to go anywhere in the world. I'm not sure why, but a walk on a grass runway when it's not being used, perhaps of an evening, as a gentle breeze caresses your cheek, is one of the best ways to relieve stress of which I know.
No matter how modest, an airplane that lifts you into the sky is a real airplane; it doesn't get any more real than that; there are only differences in degree.
There is nothing more beautiful than this world when viewed from aloft.

This is my final regular feature for AVweb. Features are being taken over by Kate O'Connor. I wish her as much joy writing them as I have had.
Rick Durden is a CFII who holds an ATP with type ratings in the Douglas DC-3 and Cessna Citation and is the author of The Thinking Pilot's Flight Manual or, How to Survive Flying Little Airplanes and Have a Ball Doing It, Vols. 1 & 2.

Human Factors: Elevators

by JEFFREY MADISON

I had a flight instructor once demonstrate how to take off, fly a pattern, and land a Cessna 172 using only power, rudder, and trim controls. Many years later another flight instructor demonstrated the same thing to me during a Boeing 717 simulator session.
Granted, both departures were long, flat climb-outs. The approaches were also unusually long and shallow, but the point was made in both instances.
It may be possible in the right circumstances, in an emergency, to overcome a frozen or sticking elevator and land an airplane by using only power, rudder, and elevator trim.
Elevator problems tend to come in two types — problems with the elevator itself or problems with the trim control. The cause can be mechanical, meteorological, or human error.
One common reason for elevator failure is inexperience, like when a first-time CFI tried to demonstrate a soft field takeoff in a PA-38 Tomahawk. He rotated with the nose too high, which blocked the elevator's airflow. The airplane became airborne but failed to accelerate. The CFI then aborted the takeoff, but not before drifting off the runway's right edge.
In his report to NASA's Aviation Safety Reporting System, the CFI blamed the incident on his "minimal experience with T-tail, low-powered aircraft."
He learned that in a T-tail Tomahawk, elevator control is very different from a conventionally tailed aircraft at slow speeds. T-tails don't get the benefit of prop downwash airflow over their control surfaces.
The elevator is a primary flight control mechanism. Federal aviation regulations prohibit initiating a flight with a malfunctioning primary flight control.
The elevator trim tab is a secondary flight control. Unlike primary flight controls, regulations covering flight operations with a troublesome secondary flight control are less clear. I think most of us, however, would agree it is a bad idea to go flying with a known trim problem.
A Cessna Citation 560XL flight crew did just that — and lived to write a NASA report about it.

The reporting pilot indicated that on a previous flight he experienced a noticeable pitch down on short final the second he disconnected the autopilot. When he tried to adjust elevator trim, the trim wheel jerked but it didn't move the trim tab. The problem seemed to disappear after landing though.

Still, he notified his company's Maintenance Control. Instead of concern, what he got was pressure. "I felt I was being strong-armed by the company to fly and was told that I was 'not cooperating with the company,'" he wrote.

Without inspecting the airplane, Maintenance Control suggested that ice might have formed along the elevator control cables during flight and bound them together. Control then speculated that landing either dislodged the ice or that it melted on its own. The crew decided the argument was plausible and the likelihood of another such ice binding event was remote. They acquiesced to the company's demands and agreed to another flight using the same aircraft.

The crew dispatched, with passengers on board. In cruise, the trim worked fine. However, during their descent and approach, the elevator trim seized.

"It could not be moved electrically or manually," wrote the pilot. "There was forward pressure on the flight controls that the autopilot could not overcome."

When the pilot flying disconnected the autopilot, the yoke jumped forward.

"Pitch was barely controllable," he said.

They declared an emergency. Both pilots had to yank and pull on both yokes just to control the elevator through the landing.

During the landing rollout, the yokes suddenly made an uncommanded movement and the crew could again move the elevator manually. The elevator trim also regained functionality. The next day the pilot decided to check the status of that aircraft. The notes in the maintenance computer read: "They have found that the elevator trim is very dry and in need of lube."

Mark Twain wrote, "Good judgment is the result of experience and experience the result of bad judgment."

The Citation pilot gained some good judgment by surviving those two flights. The bad judgment he displayed was in failing to listen to his inner voice.

A lot of things can fail on an airplane during a flight, but only a handful will kill you. Inflight loss of an elevator is one of those.

Remember the Alaska Airlines MD-83 that fell out of the sky near Malibu in January 2000, killing 88 people? It crashed because of the inflight failure of the jackscrew assembly. The acme nut threads on the horizontal stabilizer trim system failed due to excessive wear due to a consistent pattern of insufficient lubrication of the jackscrew assembly.

The Citation pilot referenced that crash in his conclusion. He wrote that he would no longer be intimidated by the company into flying an aircraft that has “a reported, serious maintenance issue, before at least being examined by a mechanic before flight.”

Pilots face many different pressures to complete their flights. External pressures come from family, paying customers, and supervisors. Internal pressures include get-home-itis and the desire to please, as well as fear of loss of livelihood. All those voices can drown out one’s inner voice and lead us to make bad judgments. When we do, the best we can hope for is to survive the resultant experience. Hopefully, memory of it will lead us to listen to our inner voices and display good judgment the next time.

Pilots aren’t the only ones dealing with those pressures. In the aviation community, there’s an adage that states the worst time to fly an airplane is right after it’s been through maintenance. Mechanics are fallible, too, and the mistakes they make can sometimes be the result of the pressure to complete a task.

Beechcraft Baron

A Beechcraft Baron pilot was instructed to stop his climb at 7,000’ for crossing traffic 1,000’ higher, so he engaged the ALT HOLD function on his autopilot.

“I was startled by the yoke violently coming to the rear and putting the airplane in a somewhat severe nose-high attitude,” he wrote.

Thinking he had a runaway trim condition, he immediately disengaged the autopilot and hit the “trim interrupt” button.

Control regained, he completed his flight using manual trim only. Afterwards, the plane was sent to maintenance for repairs. The pilot noted that the Baron had just come out of the avionics shop. It had been sent there to have its autopilot and associated systems serviced.

One pilot picked up a Cessna 182 from a repair facility and wound up submitting a NASA report. The Cessna had gone into repairs to replace a damaged elevator.

“Did a thorough preflight with special emphasis on the elevator,” he wrote. His checklist included trim and autopilot functionality, which he verified.
The pilot then set the trim to takeoff position and started his takeoff roll.
“On the takeoff roll, the aircraft did an uncommanded rotation to an unsustainable climb angle,” he wrote.
The pilot had to push full forward on the yoke and trim full nose down just to stabilize the 182. He landed safely and taxied immediately to the maintenance hangar.
The mechanic discovered that the elevator trim system had been misrigged by 9°. Imagine if your climb angle for departure is 10°. That means the poorly rigged takeoff trim setting would put you at 19° nose up. In a single-engine aircraft like a Cessna 182 at high power, low airspeed and high P-factor, a 9° nose-up trim misalignment might quickly result in a very bad day.

The Cessna 182 Skylane.

Another Cessna 182 pilot suffered a similar incident, right after retrieving his plane from its 100-hour inspection. He conducted preflight and taxi checks to his satisfaction. He departed. Once he leveled off and set trims for cruise, he realized the elevator trim wheel was rigged backwards. He chose to adapt and continue to his destination. In his report he wrote that the snafu “likely occurred during 100-hour maintenance when elevator trim components were taken apart for lubrication.”
How best to prevent avoidable elevator mishaps like the ones above? Three words: Checklist, checklist, checklist. (This may already be part of the A&P’s repertoire, so apologies if it’s a common practice.)
It may be worthwhile to develop a post 100-hour acceptance checklist that includes specific subsections for items that were disassembled, serviced, and then reassembled.

Perhaps FBOs and GA pilots should also develop their own post-maintenance checklists. After all, the normal, published preflight, run-up, and flight control checklists don’t contain a subsection for maintenance acceptance flights or post-inspection flights.

Even during normal flights, published checklists fail to offer a method to determine the correct rigging of trim. The extent of the checklist for trim is usually “ensure trim set to takeoff position.”

You might think a pilot would take the time to dial the manual trim and run the electric trim full forward and aft to confirm that the controls are moving in the right direction in a post-maintenance or post-inspection situation.

You might think common sense would make that obvious. I don’t. I think, sometimes, common sense can only be revealed on a checklist.

FAA removes requirement for complex aircraft on some practical tests

MAY 1, 2018 BY GENERAL AVIATION NEWS STAFF 6 COMMENTS
The FAA has published FAA Notice N8900.463, which addresses a change in policy in the Commercial Pilot and the CFI practical tests, no longer requiring demonstration of a complex aircraft on certain tests.

A complex aircraft is no longer needed for certain commercial and CFI practical flight tests.
The changes eliminate the requirement to fly a complex aircraft for a practical test for the commercial practical tests and the single-engine initial CFI test.

FAA officials noted that, “the FAA finds that no longer requiring an applicant to provide a complex airplane for the initial commercial pilot with an airplane single-engine rating practical test or a flight instructor with an airplane single-engine rating practical test will not result in a decreased level of safety.”

However, the training hours and maneuvers in complex aircraft for respective certificates still remain in the certificate requirements. The changes became effective when the notices were published April 24, 2018.

Should vision testing be required for city officials?

MAY 1, 2018 BY JAMIE BECKETT 16 COMMENTS

After a fire in the Apollo 1 capsule took the lives of Gus Grissom, Ed White, and Roger Chaffee, NASA undertook an investigation. Not so much to lay blame as to understand why the fire happened. With a clear understanding of why, it would be plausible to assume similar tragedies could be prevented in the future.

Frank Borman testified before Congress with the results of that investigation. Frank is no slouch. He would ultimately go on to command Apollo 8, the first mission to leave earth orbit, travel to another celestial body, orbit it, and return. That's big stuff.

In his testimony he referred to a failure of imagination. The accident wasn't caused by negligence or malice. It was simply the failure of engineers, technicians, administrators, and the astronauts themselves to imagine what the ramifications might be of a long series of variables.

Thanks to that investigation, to that dedication to professionalism, the Apollo program suffered no additional loss of life. Considering the complexity of their task, that's amazing.

Here on earth, specifically, here in my adopted home of Winter Haven, Florida, there is a failure of imagination that is far less understandable, and considerably less excusable. I suspect the story will not be totally foreign to you, either. As unfortunate as that might be.

There is an abandoned orange grove immediately across a two-lane blacktop from Gilbert Field. It's a fine piece of land, bordering the road and the airport on the north and west sides, and Lake Hartridge to the west. The lake will one day soon become the new home of the Seaplane Pilots Association.

Arrow points to retired orange grove now set to become homes.

It's a beautiful piece of land in a very aviation-centric location. If you're interested, intrigued, or involved with the industry in some way, it would be harder to find a more perfect spot to launch a business, establish a school of aeronautics, or expand the existing airport to the waterfront for the benefit of seaplane operations.

Conversely, if you are not interested, intrigued, or involved in the industry, it would be a very challenging place to settle in with something like…oh, I don't know…private homes. And yet that is exactly what is happening.

With all the administrative levels the government operates, allegedly to serve and protect the public, the abandoned grove is slated to become a neighborhood of more than 100 single-family homes.

There is nothing about building a residential neighborhood next to an active airport that challenges the imagination. It's been done before. Many times. And with the exception of a few cases where those developments have been marketed specifically as a fly-in community, the results hardly vary.

The new homeowners begin to complain. They don't like the noise. They don't like the pollutants. They don't like the risk of imminent death they perceive to be an ever-present danger when situated near an airport. Ultimately, there are lawsuits.

It certainly can get ugly out there when the folks in charge of land use are asleep at the switch.

Add to all that built-in angst and paranoia that this particular piece of land will put private homes within a few hundred feet of a runway threshold, and a slightly shorter distance to an active fuel farm, and it's hard to see how anyone could be so myopic as to say, "Sure, let's rezone that piece of land from agricultural to residential. Who could have a problem with that?"

The answer to that question is, of course, anyone with a lick of sense.

We can reasonably theorize that nobody involved at the county level of government cared to give the thought much consideration, since they gave a green light to the rezoning. And the city officials who approved expansion of the city limits to include the development.

And to the amazement of people with fully functioning brains, the city is preparing to double-down on this lunacy by allowing an increase from 90 units to a significantly higher number of private dwellings.

It was explained to me only last week, by a high-ranking city official, the builder can fit more houses onto the land than originally planned because people don't want big yards anymore. It seems they want small yards, big houses, and ostensibly, close proximity to large fuel tanks, running engines, whirring propellers, and the occasional turbine zipping overhead.

Is it just me, or does anyone else wonder how it could be possible that none of those officials saw any problem with the plan? They have given a clear signal to residents and business owners alike – high-density residential housing and airport fuel farms are a good fit. Putting a few dozen kitchens and living rooms within a few hundred feet of a runway is okey-dokey.

I can only wonder how many of those officials will be beating a path to the developer's door to buy one of those homes? How many of them will take personal responsibility when the noise complaints come rolling in?

I'm trying to imagine exactly how many of those who gave a thumbs up to the development will show up in court to take a bow and explain the benefits of their vote when the homeowner's lawsuits begin to show up on the court docket?

I'm betting that number is very low. Something in the neighborhood of zero.

Perhaps there should be mandatory vision testing for people who are in a position to make decisions that affect the rest of us. Not with an eye chart, but with a map, a handful of artists renderings, and a detailed description of what they think the outcome might be.

Give 'em the same tools NASA used to take us to the moon and back. Imagination. Accept that errors will occur. But require that improvements be made as new information becomes available.

Sheesh. When will these folks stop shooting themselves in the foot? The fallout from their lack of vision is getting to be truly painful for the rest of us.