

MORE THOUGHTS ON "FLYING TOUGH"
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Two things prompt revisiting Mark Van Baalen's 1981 notes on this subject, and adding my own thoughts as well. One is that we in API are tending more and more to "fly tough", perhaps without realizing it, for a whole bunch of reasons. Flying tough is a concern of long standing within the club, and perhaps should be addressed anew, now that we're about to upgrade the radios and gadgetry.

The other, of course, is the recent high-profile JFK Jr. disaster. The NTSB will, of course, have the last word, but from what is already known, that trip was "flying tough", and for him, way too tough. Disaster or no, his management of that trip was definitely not how to do it. He could very well have survived that trip if he'd only known how to fly tough.

There is a right way to fly tough. The pros do it every day for a living. We just kid ourselves if we think we are in the same league as the pros -- flying that tough by low-time or relatively inactive high-time pilots (read: typical API members) should definitely be avoided -- but given that we're all flying tough to some extent, everyone should know what it is, how to do it, and be able to recognize when they are doing it. It's important to understand what the real problems are, and how one actually manages such flying.

Mark Van Baalen addressed some key aspects of the subject in the aftermath of Bob Longpre's crash back in '81. [Bob was an excellent pilot, a former pillar of API and a great guy, who eventually left the club to buy his own 210. Alas, not long thereafter, he and his son fell to earth out of a big afternoon buildup out in the Midwest. The crash investigation was inconclusive (pilot incapacitation was suspected), but the event struck close to home, and prompted a hard look at the way we were flying.] Back then, Mark wrote the following:

FLYING TOUGH

"Flying Tough" is a term heard often around API, and I have never quite understood whether it is intended to be complimentary or the opposite. I think that all of us know in general what it means, and think of particular individuals and their flying style in association with the term. Anyone who has followed the career of Richard Collins, reading his books and articles, would have to agree that the "flies tough". Unfortunately, none of us would be truly surprised to unfold the morning paper and read that he had tempted fate once too often.

What does it mean? I believe that someone who "flies tough" squeezes some extra utility out of his aircraft by reducing his margin for error below what you would accept yourself. It's kind of like the definition of a "gas guzzler", that is, any car which attains fewer MPG than the car you

presently drive. It is in the eye of the beholder. Flying tough does not mean violating any particular regulation or doing something grossly unsafe or stupid (as in "busting minimums"), but it does mean reducing your options in case the unexpected happens. Take the example of a zero-zero IFR departure from Nantucket, into a dense but low fog bank, with otherwise VFR conditions prevailing. You would only be in the "soup" for 30 seconds on climbout. Is this unsafe? Well . . . it depends. Are you feeling like a tiger or a pussycat today? Have you practiced your instrument flying, including zero-zero takeoffs, recently? Are there possibly going to be thunderstorms up there above the fog bank which would ordinarily make you want to turn around and land? Do you have a plan for exactly what you will do in case of compelling need to land right away? Did you empty your bladder right before getting into your plane? Depending on the answers to questions like these, that zero-zero takeoff is either perfectly reasonable or a dumb move. And so it goes with flying at night, or IFR, or near (through?) thunderstorms, ice, or over water or uninhabited terrain. What about just a routine VFR flight on a cold winter day over Vermont or New Hampshire? If you don't have some survival gear on board (sleeping bag, tent, warm clothing, food, etc.), you are "flying tough". In none of these situations does one violate any FAR or API rule.

I do not feel it does any good to lecture people at those FAA safety seminars, because the wrong people always show up! The guy who is too busy to go to the seminar is the same guy too busy to perform an adequate preflight. All of us learn from our experiences, some more than others. What is reassuring to me is that many of us have learned the same things (truths?) from our different experiences. I find, for example, in speaking with API's more senior pilots, that many share my feeling of being more confident about going up to take a look at questionable weather, but being much quicker to make a 180 and chicken out when things begin to look bad. Is this the correct attitude? Is this what increasing amounts of flying experience have taught us? Well, some of us feel that way. A recent example of this in my own flying was a trip from Chicago to Fitchburg on a cold day. The briefer read out no less than seven sigmets covering my route of flight, for heavy icing, turbulence, thunderstorms, falling pigeons, and other hazards. Well, Chicago was VFR so I decided to make a start VFR underneath. As it turned out, I made it all the way to my destination without encountering any weather at all. Did I fly tough? You decide. I think that in my own experience the most important thing I have learned is that my own capabilities vary widely from day to day. The plane flies pretty much the same every day, but I sure don't. What this means is the most important part of the preflight is the pilot. Look buster, are you really up to flying today. No? Then the hell with it. Cancel!

In the wake of Bob's crash, I think all of us have to ask ourselves some questions. API should issue everyone a

mirror and each pilot should take a good look. Did any of this have relation to Bob on his final flight? Bob, by general agreement, did not "fly tough". So what is the answer? Perhaps, like Icarus, Bob merely flew too close to the sun. Rest in peace, Bob.

Mark Van Baalen
Littleton, Mass.
August 28, 1981

Now, almost twenty years later, "flying tough" continues to be an issue at API. And in the recent news, we have this very obvious failure to do it correctly. We are forever being told not to fly tough (and now we will have regulatory attempts to forbid it, just you wait and see!).

[My own 'good advice' on the subject is to fly as much as possible in the style described in the API Op Notes "VFR Touring with Passengers Aboard", i.e. in a manner *anything but* tough. This style of flying very handily got me (with only 100 hours and no instrument rating back then) and my family safely through a big tour of the U.S. and Canadian West in 1968. We put over 50 hours on N3562F, then a brand-new 182 that rented for \$20/hr. in those days, and we never had a bit of trouble. Even though on that trip it was necessary to avoid terrain, fly VFR-on-top, dodge tornadoes, get past a warm front full of imbedded thunderstorms, and land in some really godawful places, none of it was flying tough. Always, if something wasn't quite right, or there weren't enough "outs", we diverted or canceled. In our present age, flying like that might be considered an impractical, time-consuming luxury, but as a general style, it is still greatly to be recommended.]

But right here and now, we are flying tough! In New England we are always flying tough whether we know it or not! Just ask people from Kansas or Illinois, out here for a visit, what they think of our kind of flying! Those folks shudder when they look down at our gloomy, uninhabited mountains, forests, and swamps, our rock-strewn pastures and tombstone-filled cemeteries, our oceans shrouded in fog, our giant urban areas with nothing down below that would be soft or cheap to hit! They fear our ice-machine in the Berkshires, our twilight-zones along the coasts, and all the rest of our famously unpredictable weather, and they're absolutely petrified by our complicated, aluminum-filled airspace! They say that if by some great misfortune they had to move East, there would be no help for it but to sell the airplane and give up flying altogether!

We have made our peace with these conditions, and we fly in them almost at will, but it's important to realize that when we do so, we are flying tough! At the very least, the conditions deserve respect, and some careful thought about what kind of risks you really want to run in exchange for greater utility.

Then, too, we're flying tougher than we used to, partly due to the last 20 years' improvements in radios and equipment. Radios used to need constant tweaking, and they generally died when you needed them most. Electrical systems were jokes; handhelds or cell phones just weren't there, either. Radar, where it existed, was all skin paint, with identification accomplished by making turns; otherwise you made the reports and estimated the ETA's as you went along, just like it says in the AIM. While these operational shortcomings made for a certain amount of flying tough back then, the toughness was all up-front and very obvious. Today, we can almost routinely count on flying to Philadelphia for an 11am meeting next Tuesday, and with this new confidence comes a subtler form of flying tough, which is flying under the assumption (of both ourselves and others) that of course we will make it, and be there at the appointed hour. Add to this expectation the ever-growing hassle and unpleasantness of commercial airlines travel, the general pressure to do much more work in much less time, and the feeling that the ghastly expense of our kind of flying must somehow be justified -- and you produce the stress and deadline-pressure kind of "flying tough". Weather and equipment can still present difficulties, but the more usual problem is pressure to fly when fatigued, or in the grip of distracting business or technical problems, or enmeshed in the toils of an overly-complicated schedule. None of these things amount to "flying with a known impairment" as forbidden by the regs, but flying under their influence risks impairment, and is definitely "flying tough".

Then, adding to all this, there's the so-called "unrealistic expectations" problem that has, on occasion, led people to fly tough who really must not do it. Beginning in the '80's we started to see a subtle escalation of expectations on the part of many new people coming out to fly. What was it? A change in the occupational, educational, or financial mix of people coming our way? An uncritical assumption that all the new radios, stormscopes, and other navigational gadgets had made everything stupid-safe and stone-simple? A "me'-generation" kind of thing? Something in the water? Hard to say! Whatever it was, its extreme manifestations were astonishing! Certain individuals (who are no longer with us) displayed a breathtaking, heretofore-unseen amount of presumption. They thought that by simply plunking their money down they could take the keys, climb into the airplane, and immediately attempt operations for which they had only the barest of nominal qualifications (and none of the real ones, should something go wrong!). With others, it took the form of an arrogant sophistry. By a process of air-tight, deductive reasoning from whatever it said in the Op Rules or the POH, they would arrive at preposterous conclusions that ignored all the "yes, but's" of the pilot's art. (We had to point out that airplanes didn't work like that!) And then there was the fellow who seemed to do everything with impressive, practiced ease, but who taxied into position one day with the fuel valve off, and on another occasion, ran the engine out of oil!

All these "paper-trained" types lacked any sense that underneath all the modern procedures and gadgetry, there were some very concrete, "dumb", and critical physical processes, and that in managing them, you had to start with some utterly dumb, elementary notions like "the air is an unforgiving, alien environment", "airplanes are full of closely-figured compromises", "engines need fuel (plus air, sparks, compression, cooling, and lubrication)" -- and, I suppose, "you could die" -- stuff our aeronautical

ancestors knew in their bones! And here they were, ignorant beyond belief, expecting to fly tough in our airplanes!

API itself may have been responsible for some of this. The club was founded, after all, to promote single-pilot night and instrument flying in single-engine planes -- at a time (1948 -52) when any of this was considered tantamount to suicide. We (and a few other pioneers around the country) showed that such flying could be done safely, and now everyone does it (although you will still hear its general wisdom argued by old mossbacks).

Also, the club promoted (and still promotes) the idea of ownership, where a member's airplane is his to fly, "tough" or not, at his discretion. Since the other owners are extremely interested in how anyone flies what is, after all, their airplane too, this is an awesome responsibility. Most people meet it in a very positive way. But to some candidates of the era it looked like an invitation to be as selfish or foolhardy as they pleased. Asked to leave (and, alas, insufficiently persuaded by us to give up flying entirely), two of them, at least, are known to have come to bad ends.

The ability to fly tough is not all bad. Progress in using light airplanes for "serious" purposes does depend on it. But it's still true that the gadgets can quit (as they do from time to time in any airplane), and it's still true that weather, fatigue, and other conditions can gang up on the pilot, to where his feathers might start to fall out. Then, it soon becomes apparent, sometimes in a pretty stark manner, whether or not the pilot was truly capable of flying tough!

The test is not simply whether he made it to his destination, or that in a jam, he survived to fly another day. Supposing the pilot did hold it all together through a tough-flying session that escalated on him, and that he did survive: the questions now become: did he then draw the right lessons from his experience? Did he lie awake at night and realize -- in his bones -- that it's all for keeps and all for real, and in other circumstances, it could have been all she wrote? Will he weave the lessons learned into his flying competence? Will he now be even more warier, 'forethoughtted', and circumspect?

Or will he consider the adventure to be just one more proof of his charm, manhood, and general invincibility? -- in which case he is not a pilot who can fly tough, but a fool!

No question, for Kennedy's level of experience, time in type, injury status, etc., etc., launching VFR into coastal 5H at night was flying tough. Everyone says, "Oh no! He shouldn't have done that!" Well, of course he shouldn't -- but consider this: he might conceivably have flown all that tough and more, and been quite OK, had he lined up a good set of viable alternatives and solid "outs" that he was both prepared and willing to use.

For starters, he could have done any number of accident-defusing things (like not launch in the first place, or land inshore on the mainland and rent a car) if he felt what he was doing wasn't all that smart -- and then, when it finally dawned on him that he really was in trouble, he could have done a good old 180°, or climbed, or declared an emergency -- or just punched the button on the autopilot for goodness sake! (Or if he was using the autopilot, and it had started the fatal screw up (as I have seen them do!), he could have disengaged it.)

Dumb as depending on the autopilot might be, and as illegal as it might have been to be in IMC as he apparently now was, he had those options, and he should have used them. Also, given the deteriorating conditions, he should have considered the moves he might have had to make to recover from a developing spiral. (I don't know about the Saratoga, but in a real, live, spilled-gyro jam, the 182 can be kept upright indefinitely with the T&B, or if all else fails, by flying E or W while watching the mag compass and steering with the rudder!). Admittedly, once well into the spiral, at his level of airmanship, he was probably a goner, but at any time up to and including the spiral, he should have made his survival moves, and then with any luck -- and severely chastened by his experience, perhaps -- he might still be here today.

Well, if doing hairy, normally-inadvisable things can be twisted into being "OK-in-a-jam", what really wasn't OK? Getting into the jam in the first place, obviously. What was terribly "not-OK" was his (reported) launch at passenger insistence, and then his pushing on into conditions famous for their ability to deteriorate suddenly. He had no business doing this without having his "outs" all figured out -- and the intestinal fortitude to face down the roars and howls that would come his way from passengers and family if he canceled -- or the possible enforcement actions from the FAA if he declared and had to be vectored or let-down out of IMC! Had he stood up to his passengers and faced up to his responsibilities, he would have been on the side of the angels (and he might have been spared becoming one). And finally, when he got into really big trouble, he should have used the basic survival tools we were all taught to save his hide! People who can't take on this kind of responsibility or take these actions obviously don't belong in flying. Alas, in their all-too-likely modes of exit, they're apt to take innocent people with them.

Mark put his finger on an absolutely key thing about flying tough in his second-to-last paragraph, when he says he learned that his own capabilities varied widely from day to day, and that it's necessary to make a hard-eyed look at these when estimating just how tough you want to fly.

To Mark's experiences and thoughts, I can add my own:

Once, back in the early '70's, I undertook the coordination of manufacturing operations in three geographically-separated companies, using N35562F, the very same airplane I had toured the West in. The

plane was by now a weary wreck of its former self, but I didn't know any better -- all the FBO rental planes I was familiar with were pretty doggy -- and I was flying in a situation where I was under hideous pressure from customers, bosses, and investors.

[We were making the memory-elements for an early distributed-memory, computer-controlled communications system. One of the first uses of our system was to stop the credit of guys who didn't pay their bar bills at the Playboy Clubs -- a truly wonderful application of the sophisticated data compression technology we had developed for the Air Force . . . but that's another story!)]

Computer screw-ups and process trouble frequently meant that key people in all three companies had to make frantic arrangements to work all night, while I did a fly-in-a-bottle act, carrying critical data, parts, and test instruments from one place to another. For the sake of this horseshit project (which everybody knew to be just a stock promotion), I would usually go from Hanscom to White Plains, then to Bridgeport, and back to Hanscom in the space of a night, making desperate engineering "saves" at each location. That was fatigue-ridden, red-eyeball flying of the worst sort, into low-visibility NYC pressure-cooker airspace and out again, usually on instruments at night, with my head stuffed with manufacturing problems and an ultimate deadline to meet at dawn -- and me with a brand new instrument rating, flying a weary airplane (albeit one I knew very well).

What fun! And what foolishness!

Fortunately I had had the prior experience of commuting to SUNYA and General Electric, and had plenty of experience in making the necessary go/no-go/make-alternate-arrangements decisions -- experience easy to come by in crossing the Berkshires every week in ice-season! But it was still startling how different deadline-pressured flying was from innocent touring, joy-riding, or class-attending. Now besides accomplishing the manufacturing mission, I soon realized I had to accomplish something completely different, and much more important, which was to survive! And, after landing at the same destinations over and over again, week after week in all kinds of weather, I gradually began to see how to manage such flying.

The first thing, of course, was to realize that nothing, nothing at all was worth taking undue flying risks to achieve. I would let the late-staying plant people rage, the investors holler, and Playboy's freeloaders run up their bar bills some more -- unless I had several workable alternatives, including at least one gold-plated one, for whatever I was about to do with that airplane. They could always get themselves another customer, more money, another idiot -- but I was the only idiot I had.

This policy paid off then, and many times since then, when even on a simple trip, one thing after another packed up and failed. Keeping all your options open is like being a

steel bearing-ball on top of many shifting layers of Swiss cheese. The layers may have holes, but if there are enough layers, and you take precautions against letting certain holes line up, then it is highly unlikely you will drop straight down through the stack and hit the floor.

No question, I needed the layers. That poor 182's engine didn't run right any more, its old Narco radios were erratic, and its electrical system was a joke. That it did as well as it did was more a tribute to the basic toughness of the design than anything else. Having a full deck of alternatives and options for any excursion in that machine was a must. (The worst thing that happened was the night I was left over NYC, in somewhat-frosty cloud, with just watch and compass in that airplane -- but I knew Bridgeport was clear, and I could have made it to Cleveland if I'd had to!) Generally speaking, things usually didn't get that dramatic: the usual thing was to encounter a whole series of little stress-raisers, like the panel lights all going out, or a carb-ice? stumble from the engine, but without any humidity for miles and miles around! -- (they never did figure out what made it do that!).

I learned that the pilot's condition needed just as much attention and backstopping as the airplane's! For example, it was critical to completely shift gears when coming out to fly: to put aside all the other stuff and concentrate on flying, and only flying, when anywhere en-route between one tiedown to the next. It was also necessary not to get too tired. If, once in the air, I discovered that I was acting tired, then I needed to realize that I had an emergency of sorts, one that required extra concentration, and a completely "dumb" checking and re-checking of all the important things, and a landing as soon as practical. Then, once safely on the ground, I found that long walks to work off the adrenalin and short naps to recover alertness were much more effective than coffee.

The main thing was just to realize that if, for whatever reason -- weather, fatigue, stress, or ailments of man, machine, or electrical system -- things weren't working out, I needed to go to Plan B, Plan C, or some other plan -- or scrap everything and go straight to Plan Q ("I quit!"). Then I would land, make a few phone calls, send the critical stuff ahead in a taxi, and spend the rest of the night in bed -- sometimes removing the goddam battery and leaving at a gas station to trickle-charge, or taking it with me to a motel so it wouldn't freeze.

The FBO knew what I was doing with his airplane, but he said he had confidence that if he ever had to go looking for it, he'd find it tied down on a ramp somewhere, with me sacked out in a nearby motel (which I took as both a compliment and an admonition).

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Thus, the first big point about flying tough: always have not one, but several workable "outs" on hand, all thought-out, practiced, and ready to be taken -- sooner rather than later, just as Mark points out. These outs should include all the mental exercises to stay out of trouble in the first place, and all the recommended maneuvers needed to get out of trouble if it happens, plus a few non-recommended ones, like being able to fly no-panel,

land downwind, or fly the ILS clear down to the ground, get ice off the windshield and land, recover from a wake turbulence upset, etc. The non-recommended ones might never be used, but they should still be there just in case.

The second big point is to pay close attention to what you're up to, so that you notice, say, the ammeter giving an unusual reading, some wisp of cloud in a valley where it shouldn't be, or various other little signs of incipient trouble. And if you find that through fatigue or stress you're not paying close attention, you had better land (after making a deliberate effort to get your act together well enough to make a safe landing!).

The third big point is to always be able to set aside your own ego, or your own tendency to be helpful, or your own natural confidence that you will make it, or your ability to jury-rig a kluge -- whatever it is that might be tempting you in over your head -- and likewise be able to dismiss anyone else's expectations of getting to a destination that day, if pushing on just isn't smart. "To hell with it; I cancel!" isn't difficult to say if adequate alternate arrangements have been made. But, if these arrangements are lacking, or have fallen through, and you and everybody around you is inconvenienced, disappointed, or even livid with rage, you still need to be able to say it! Your true accomplishment for the day (and theirs) may be just to survive!

(And if the problem is the weather, it wouldn't hurt to consider if you really want to be up in the air that day in *anyone's* conveyance! Once, after refusing to fly from Newark to Boston myself upon hearing the conditions, I also refused to get on the airliner with my associates, who told me later that they wished that I had been as adamant about not letting them climb aboard as I had been in telling them we weren't going anywhere in the 182! Apparently, it had been an absolutely terrifying ride -- pitch darkness, ice, severe turbulence, lightning and St. Elmo's fire, the works! They never made trouble about any refusal to fly tough again!)

The Op Note "Landing and Ground Handling Damage" of 5/81, attached, amplifies some of the above points. As you will see, the topics discussed there apply to events in the air as well, and need to be thought about carefully by anyone who flies tough.

SUMMARY AND CONCLUSION

By all means, fly, and get all the utility out of the airplane that you reasonably can! Just be aware that here in New England, we're already flying tough. Then realize that modern instruments and expectations may be tempting you to fly tougher yet -- or they may be lulling you into a false sense of security. If our new radio gear packs up or goes bananas, will you be able to do as well as old-time pilots did with no (or really terrible) equipment? How's your partial panel? Your pilotage and dead reckoning? Your competence using back-up gear? What about its batteries? Where are you going to run to for gold-plated good VMC? And when you get there, what if it isn't?

Think about just how tough you are flying, and how tough you really want to fly, and prepare yourself to handle the things most apt to go wrong, or most apt to snowball into a bad situation. And then, recognize that, whatever your hours and ratings, your true competence to fly tough -- the ability to keep the mill going and the wings level no matter what, plus the ability to deploy that right-there-in-a-pinch competence (or inspired improvisation capability, as in Iowa City) you might need to snatch your cookies out of harm's way -- can vary a lot from day to day and time to time. You need to fly a lot to stay calibrated on how well you flew last Tuesday, and how well you're apt to fly today! If you're not flying a lot, then you shouldn't assume too much!

And if, in the previous hour of flying, a lot of stuff has come tumbling out the pipe, recognize that you've been under stress, and that your brains may be turning to mush! Better to land and walk around than to push on! If you're tired, off your feed, or think you might be coming down with something, then don't push on, or try to patch things up with coffee or aspirin: check everything important doubly carefully, land, take a short nap, then see how you feel. Always, on the ground or in the air, listen to the subtle messages coming from your ass or your hind-brain that say, "I don't care how the fancy neurons up front might be justifying it, this isn't smart! This isn't working! Don't do it! I want to live!"

And above all, never be too committed to getting to your intended destination (or too hung-up on your own ego, or too helpful, or too easily intimidated by others, or too confident that everything critical is going to work -- any of those things --) to say, "To hell with it! I quit!"