

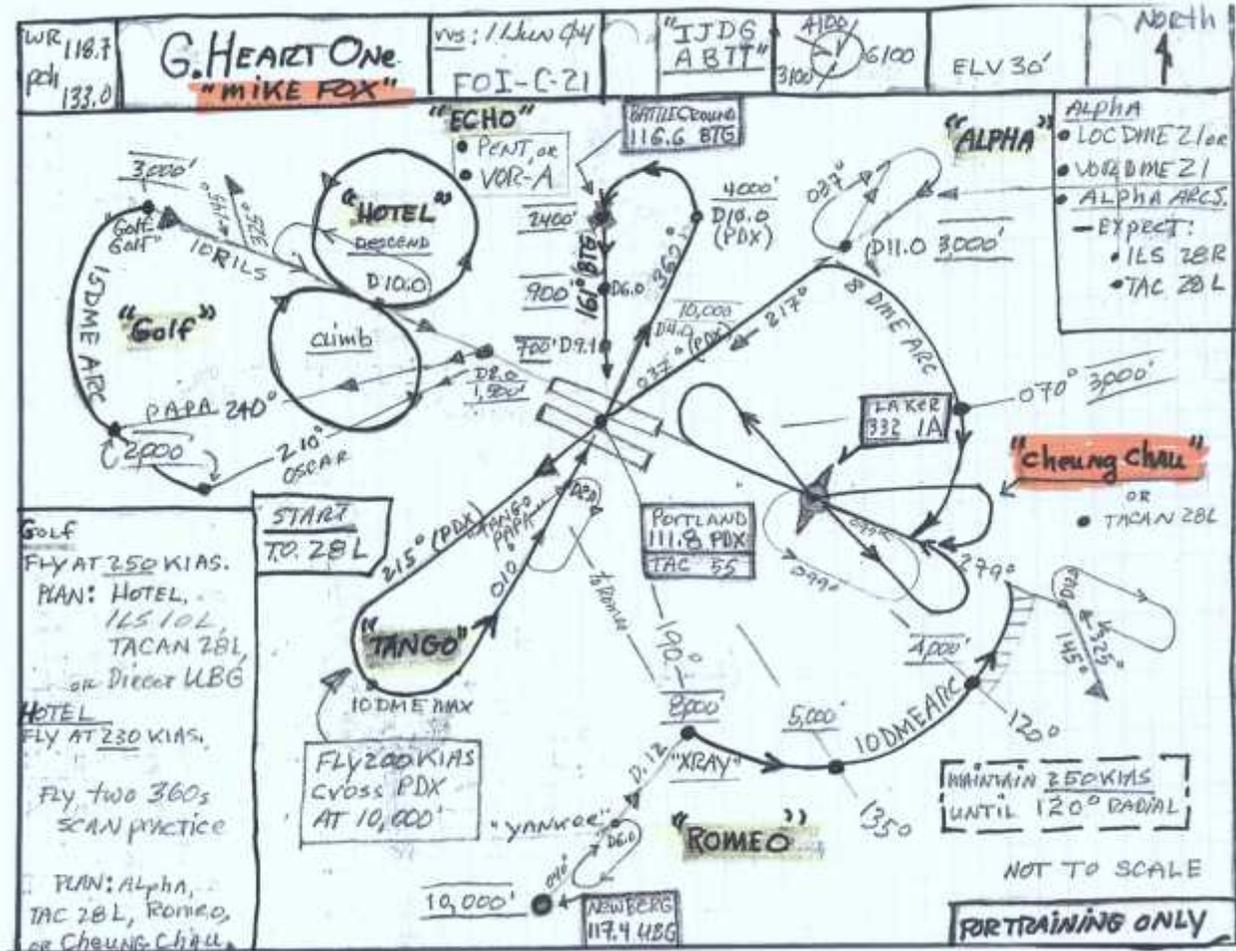
Chapter 11

MIKE FOX and Cheung Chau

"Fame 21, fly Golf, call on the arc and passing 'Golf Golf.' Cleared for takeoff runway 28 right."

You could say "Let the games begin!" Maybe "I got five bucks says you can't get around this and find the field..." Ah, just a challenge – actually, a piece of cake.

Lots of luck!



This is the play book. All of us going into the sim will need to have the map for where we are going to fly. This Mike Fox is kin to the notes on the wrist of a quarter back or a good catcher. Maybe a cue card would fit? Well, the adapt students in G. Heart Country studied this before we stepped to the jet...

It was not designed in one weekend and is a compilation of more than one approach or departure from around the world. For instance the Cheung Chau approach is from a Hong Kong NDB approach – more on this one in a minute. Flying ALPHA and coming off of the 8 DME arc was designed from an ILS approach in Mexico City. The end of ECHO is the published VOR approach at Portland. There is a meaning to my madness – and the graduates of having flown from this page in history will attest they had to pay attention. Course, I had as much fun watching as they did flying and even on more than one

occasion would say “Lieutenant, get your ass back here and let me fly this SOB!” Sometimes this was not a very good idea...they jacked with my wind, weather, and engines and played like God trying to kill me.

Mike Fox was originally set up to save some time. Rather than me (ATC) giving departure/arrival instructions this was created to be looked at with a glance and know the play. Yes, we all spent some time reviewing each section – one must study before dipping your nose down into the abyss. Although there are 8,753.5 different ways to fly on this page it is full of tips, tricks, and traps. If a pilot is not 16 miles ahead of his jet he may stumble on something – and by design. The real word to hold the productive learning from the page is FUN. If you are not having fun you may miss some of the “glory.”

History

Over the years we flew the sim out of New Orleans, Houston, Oklahoma City, Portland, and Moses Lake. The fields were chosen where the most approaches could be flown and perhaps where the crews were flying in and out of. The standardization of having one field just made the training that much more efficient. The instructors and students all had the appropriate approaches for these airports and the simulator was kept up to the changes at these airports. (I was the only one with a Mike Fox to fool with.)

This sim training is so important I could spend days discussing the exact ins and outs of each runway, each approach, and each event we covered in the training sessions; however, I just want to expose a couple for ole times sake.

The Box

Once we go down the stairs into the sim, get strapped in – just like the jet – turn on the motion, and start flying, it is another world. The glory I mentioned earlier has to do with the magic of this wonderland . We can do just about everything. Pushing the magic buttons and flying in this virtual airspace sometimes exceeds the reality of flying the jet in real time...I am not claiming this is la-la land, no, it is the marvelous ability to move around and change the environment to meet the training goals.

You want wind? We got wind. You want wind shear? We got wind shear. You want night, in cloud, in the rain (with lightning), and rough air? Hang on, we got that too. This is not as esoteric as it may seem but to meet filling the squares for training in the simulator will accomplish the tasks in a very efficient manner and again it is just serious fun!

Side bar – Back in the good ole days for me was flying a Boeing 727, well about 10,000 hours’ worth, and the simulation from the late 60s thru the 80s was amazing. We moved from Love Field to DFW and at that time Braniff had a big ole bill board at the end of the old runway 17 left perched right before the crossing east-west highway. This Braniff bill board was in our simulators so we got to watch it go by taking off south and up close flying over it landing north.

Part of my check airman training (working in the office) was to be qualified to fly the 727 on ‘engine out’ ferry operation. Sometimes a ship had to be ferried back to DFW or DAL to have an engine changed and us office boys would ferry with only two engines running. This was a big deal as the intake had to be covered up, light fuel load, no passengers (of course) and other restrictions depending on which engine was inoperative.

The training called for simulator time to practice the longer take off distances and some of the ‘other things’ that could go wrong. So, I’m sitting in the left seat being trained by a check airman in the right

seat. Number one is INOP and so we are taking off with number two and the pod number three engine. The flaps are at five degrees rather than 15 so we will have a long takeoff roll. I thought it would take all day to get airborne and after the first six thousand feet I was correct. Just about the time we got to V1 (or GO) my instructor pilot reached over and failed the center engine, to which I replied with something like ‘what the blank are you doing – this sumbitch won’t fly with one engine!’ He said “Yeah, it will. Keep it coming!” We were eating up the rest (ALL of the rest) of the runway. I knew it was going to be close but it finally had enough flying speed to rotate and fly – which we did...gracious! We made it!

And then we flew right through the **Fly Braniff!** sign.

Back in the C-21 sim

In the later years I came up with, in my mind, a rather unique exercise that took a high degree of proficiency and a high degree of skill to make it work. The pilot’s had just about an 80 foot window to keep from scraping the airplane on a “little ridge between two hills” south of PDX.

Issues for this event were a push in situational awareness, meeting second segment climb performance, and dealing with an unexpected diversion. It took me more than one ‘test flight’ to get this down to the short window of success but if you want to talk about focus in a crew when in (more or less) mountainous terrain and it is going to be close, this is it.

The departure is set up for runway 21 at PDX – the short runway. The weather is ok but the visibility is down to about four miles. They know there will be an engine loss at GO so they are expecting this. The instructions are to maintain runway heading after takeoff. They know this track will put them between two peaks in the east-west ridge 6.5 miles south of the end of runway 21. We are working on flying the exact speed during climb out - it is called V2 and is a few knots above rotation speed – so when they come off the runway they must pitch and maintain the speed as this is the best speed to clear obstructions – in this case the little ridge/valley between two peaks both at 2049 feet. The valley is about 1800 feet as I recall so they have to climb out about 1800 feet in the six and half miles to clear the ridge.

The takeoff data card says/shows this not a problem. What they don’t know is I have put the weight of ship (fuel) to make on the heavy side meaning they can’t dilly dally (a professional aviation term most people do not understand) during the climb out.

We discussed after the V1 cut to immediately jettison fuel – which is about 2400 pounds and at a rate of 500 pounds per minute or about five minutes (the fuel drains out by gravity through a port on the end of each wing tip tank). This too is going to be a factor as they still will have some fuel left to jettison when they get to the ridge– maybe a 800-1000 pounds.

The second thing on the V1 cut is to set the max power (N1 gage) and NOT push past this mark for more thrust – as they do in light planes – because the additional thrust added may be more than the rudder can hold even when at the full rudder stop. It is VERY difficult to teach a pilot if needing more altitude – and they push the power up and the nose begins to turn – that he then has to reduce the power...long story, but must stay with the N1 of the day!

Here we go. (I am taping/recording the cockpit and making a hard copy of the climb out.) They are cleared for takeoff. At GO, I fail an engine. They rotate at VR, , positive rate of climb, set the climb speed to V2, call for GEAR UP, and start the fuel jettison.

The distraction was put in by me before they broke ground and I am now watching and waiting for them to see – yep, here it comes. The copilot says “The f’ing gear didn’t come up!”

Now we have a ball game...tell me how much fun this is! I am watching the reaction of the crew as they know the gear hanging will degrade the climb performance but how much? Will they miss the ridge? Are there other options? I wait.

The pilot says “See if we can turn back. We’ll make a shallow turn over town and make our way back to the field.”

“Negative! You may run into a building turning – not saying you would but the space on the straight ahead climb out is protected if you can meet your climb schedule” ...more mumbling.

I point out to them (being nice of course) the airspeed must be kept right on V2 for the best rate of climb, meaning keep ‘er going. Then I point out to them where the crest is in the ridge and suggest they aim right at it...and then almost subvocal, said “Lots of luck.”

Pucker time...We are all watching the gap in the ridge (it is above us of course) but we are gaining on it. The radar altimeter is now going to below a 1000 feet as we climb the slope and will continue to go down to zero if we run into something or it will show the altitude in feet how high we will cross over the ridge. The three plus minutes go by fast and we watch. It is obvious we are going to be close as we can see the crest getting closer. The airspeed has been nailed and we are doing the best we (he/they) can. The ship is still getting lighter and more responsive in gaining altitude as the fuel burns down.

Now we are close. Show time is seconds away. The radar altimeter is reading lower and lower to where as we skim the ridge it goes from 80 to 60 and finally 40 feet as we cross. They made it! High fives for the crew and then I say “How are you going to get back to the field?”

The next 20 minutes is another game. There are a lot of options and I pick one.

And this goes on for four hours.

My joy is watching at how well they all do – a product of a lot of things – but this sort of training is the most fun.

Some of the options after missing the ridge an instructor could issue:

1. Turn left to 180 degrees, climb and maintain 4,000 feet. Intercept the 10 NM ARC of PDX and arc north for a TACAN approach to Runway 28R.
2. Turn left and go direct to the PDX VOR while climbing to 3,000 feet. Expect Cheung Chau approach.
3. Could be to the VOR and more than one Mike Fox approach back to the field or even radar vectors.

Did you say Cheung Chau?

Cheung Chau

This approach first showed up for me when I was getting my rating ride in the Boeing 747 simulator back in 1990. Cheung Chau is an approach into Hong Kong and is unique with the pattern to be flown using an island radio beacon named Cheung Chau (CC) and then VFR to another beacon (SC) where a 90 degree turn to the right is accomplished going past the checker boarded side of a ridge. This checkerboard is designed to be seen so as to turn inside of the orange and white squares to line up with the southeast runway.

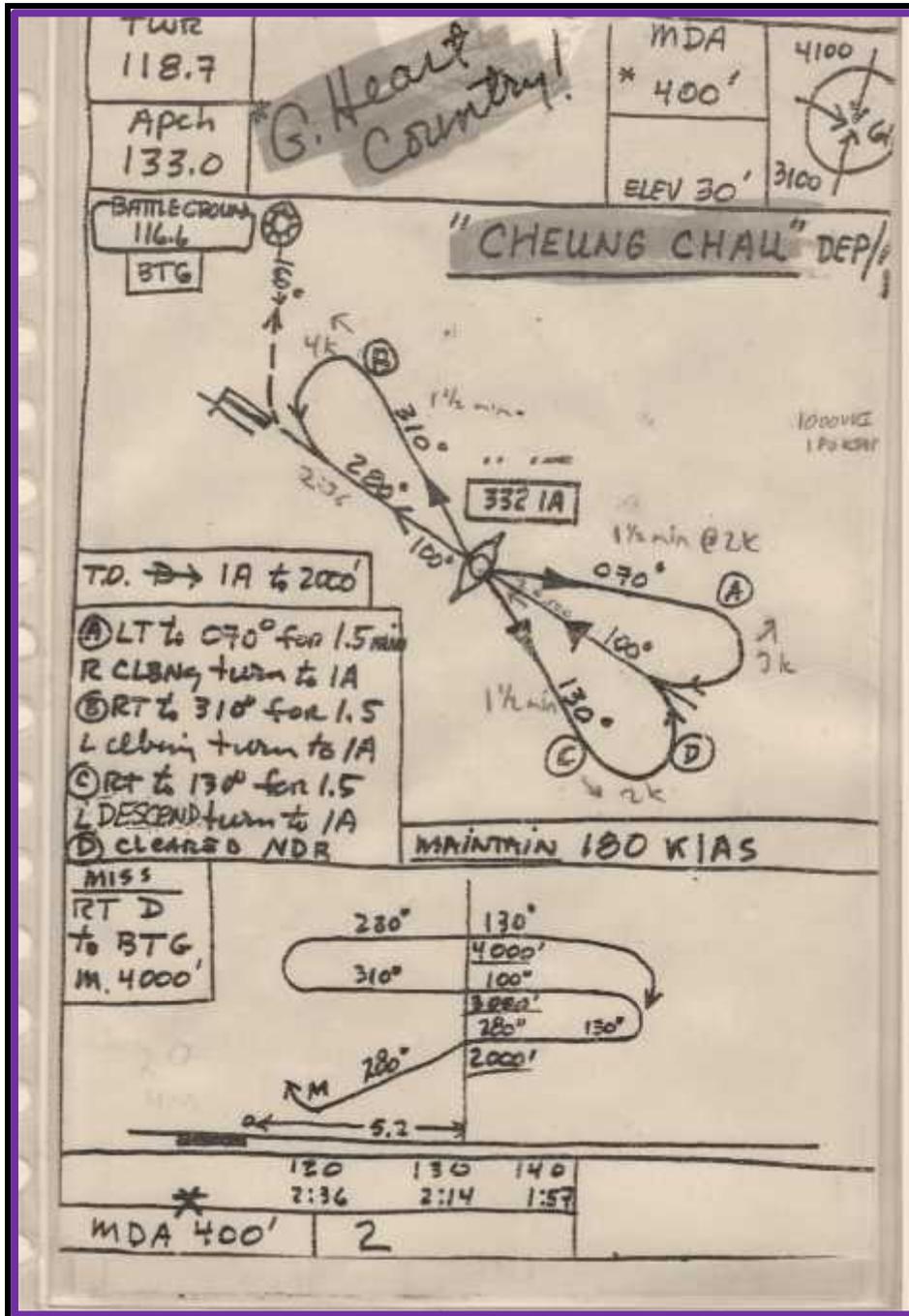
More than one photo has been taken of aircraft during this final turn.

This picture below shows a Boeing 747F (Korean freighter). To say the least the folks below the approach path get a good view the low flying aeroplanes – the pictures are even spectacular.



The approach plate used for designing my Cheung Chau came out of my Jeppesen book dated 1978. The airport at that time was the old Kai Tak Airport with just the one long runway. (The new airport 15 miles to the west opened up in 1998.) The CC NDB to Rwy 13 required a full figure 8 to be flown with a 9.4 mile approach over water to the SC beacon where the 3.5 mile 90 degree right turn is started.

This approach looks convoluted – and by today's standard it is – but we spent time in the classroom going over exactly what was required to fly Cheung Chau using the NDB with no DME and no Radar help. The approach has three loops, a climb of 1,000 feet in each of the first two turns and then a 2,000 descent in the last loop. One climbing turn to the right, one to the left, and a descent to the left. The 5.2 miles takes around 2:15 minutes. You have to do one Cheung Chau approach to say you have “been there and done that!”



The classic masterpiece

Simulator – Instructor’s Screen “God’s view of the approach”

This shot is a view from above at the World Airport in Oklahoma City (KOKC) as we were training up there for a while and I taped a red heart flown by a distinguished graduate of my class. Actually, I had him turn to the left on a turn then he did it again to the right to get the heart shape.

A heart track is easier to explain to my civilian readers than showing something exotic like Cheung Chau.



“One of the gifts of age is, with impunity, you can treat an elderly son of a bitch for exactly what he is.”

Actually, I had some surgery done to my left eyelid recently and have determined next time to have a correction to my eye very similar to the example below...may help my Colt and Kimber disposition.



Attention to Detail

One of the reasons for spending so much time on details is to learn the trade for remembering the things that happen in the jet during especially training so an instructor can make the statement with confidence what he says happened – or it didn't. Being correct, being observant, and paying attention will give an instructor needed, desired, almost demanded credibility. This attention to detail will pay off in life no matter what you do (well, wouldn't push it too much back at the house – but you know what I mean).

Have mentioned the G. Heart Country patch was on the screen when the students came back from a break and as they came in I mentioned in a very short time some things to distract them from looking at the patch. This was the first time it was shown in the class. Then I turned the slide off and asked them to take 60 seconds and draw what they saw on the board – most did quite well, less spelling of course.

Have you seen all the descriptions of the patch spread out in this book yet? Are you able to take the parts I have discussed and able to explain each one? Well, this chapter may not be toward the end but it should – and I have covered most all of them except why the yin yang is not red on top. Or should it be?

Attention to detail – Part II



Had this picture pinned on the board for a while and as there were no Anchor Clankers in the class I addressed the issue myself by asking a question “What is the name of the ship?”

This one took a while...what do you think right now? Can you determine the name? Go for it!

I’ll bet my little brother could answer it without calling Dr. Google.

You really got to look at this. Answer the question “What do you see?”

Hint: I told my brother I no longer have a bucket list when I called him from San Diego. He did know, by the way when I sent him this page a couple of days ago.

“Ok lieutenant, I’m gonna kill You!” (OKLIGKY)

Set the stage

This segment of simulator training is actually not only the most productive lesson but is quite piercing to both students and the instructor. One tries to crash the airplane, the other tries to keep it from crashing, and the sim IP just hangs on. Then we reverse roles and do it some more. The words are instructive as they change seats, “You bastard, pay back is a bitch.”

What kind of wisdom is there in letting this sort of training happen? Why would an instructor let them play these games?

Actually, to really goof up a takeoff to the point of letting it crash is a test because they just never get to that point and doing so is just against all self-serving survivability...THIS IS THE REASON WE DO IT.

Somewhere in the class we talk about “you only have three seconds.” Once you see the airplane start out of controlled flight you have three seconds to react and save the ship. Then I spend a few minutes on discussing some of the ways to die, some ways to prevent dying, and then tell them I lied about the three seconds – “you will be lucky to have two!”

Which means during (for instance) takeoff if you are setting over there with your feet flat on the floor, arm on the glareshield, and thinking about happy hour you are dead meat. Once the nose starts drifting from the center line, or the airspeed gets a few knots slow, or you look outside at the world, you may end up next seeing and feeling your last breathing moment. It don’t take very long.

So, here is the deal. Bucket of rocks will decide what to do to put the ship in the dirt. The IP candidate will monitor and take over as soon as he sees “this ain’t going right,” holler “I HAVE THE JET!” and then do whatever it takes to keep from crashing, scraping a tip tank, or taking out the control tower.

Some examples

For take off - the student will be flying and the IP will pull and engine to idle at GO. The student will feed in the correction too slowly, too fast, or not at all. He could just leave his feet on the floor. He might pull the other engine to idle or slowly reduce the power on the good engine. Maybe put the flaps full down. Maybe try to land rather than fly away like he is supposed to.

A lesson in this ‘bucket of rocks’ example and then being able to swap and try to kill his buddie will give both pilots a damn good idea of just how far you can let a student (or anybody) go with the jet before you have to recover by taking it away from him and getting back to a controlled aeroplane.

These examples are just a few of what “common errors” look like. I promise you (as we all should know) seeing these in the simulator will give you pause for letting it go too far in the jet. It happens ‘pretty damn fast.’

Note: we all take this training with as much seriousness as we can bestow on ourselves and our wingman. This is really “NO SHIT” training...or however you say that

For landing – the student flying will let the aircraft get into a position that will cause harm and the IP student will “TAKE THE JET!” This scenario also is an eye opener. In my opinion listening to some anecdotal stories the training has saved some bacon. Note: I am not the only one to administer “common error recovery techniques” but we all have an appreciation of learning in the sim.

This event is set up with a single engine approach and a called go around with the pilot making an error(s) of his choice to activate the “I HAVE THE JET” mode to save the day. This maneuver also has, for the lack of a better term, some “Jesus” moments.

Notably, when the go-around is called the student will do a lot of the same input items done in the takeoff scenario. They happen at the same rate. One moment you are just dandy and the next the tower is 90 degrees in the window as you are knife edge and micro seconds away from being a flaming fire ball. Again, at the call to go-around, no rudder is used when max power is applied to the good engine, or not enough rudder and no aileron is used, or just aileron with not rudder. The ‘saving pilot’ must “Point the nose, level the wings, and get some smash” noting, of course these three steps are done at the same time or better, simultaneously.

We spend some time talking about making a simulated single engine approach with one in idle. When it comes time to GO AROUND all throttles are pushed to MAX power, I have a picture I used to place on our little NOTAM board in the room (we could see the messages but the hall walkers couldn’t). The pix below with tongue-in-cheek B-52 throttles says “EVERY ONE GRAB AN ENGINE AND PUSH ‘EM UP!”



Last G. Heart Country Sim Event

All through the training we have been emphasizing electricity, circuit breakers, and smoke and fumes. We even set up a time to go through shutting down one side or the other while 'parked' so you could take your time and learn what to do if you had fire.

This landing story will be truncated somewhat as it would almost take another book to get it all said – well, another class anyhow. Let's step smartly to the jet get it air born and we'll end this in a cloud of safe dust.

Somewhere toward the end of the four hour period, I will announce you have smoke coming from one side or the other. They will have to fly and fight at the same time. Yes, the engines will start falling off before you land – but you already know that.

Watching a well prepared crew go through this drill will water your eyes. It takes both of them to make it work. One can't just fly or just fight as they must work together to shut down one side, stop the smoke or re-establish power to the side they just shut down and turn the other side¹ off – both have their own issues as to what operable equipment you have when the smoke finally stops.

Once the fire is out, half the jet will be shut down. Let's say it is the left side. The flight instruments will be only available on the right side and is the worse-case scenario. Normally, the right seat pilot would fly because the instruments are in front of him and easier to see. But no, not in G. Heart Country. The instructor pilot candidate must fly cross cockpit to land the ship – that's just the way it is. He must think ahead about what is working and what is not going to be available: will the gear come down or does it have to be blown down? How do you jettison the fuel from the left tip tank? What navigation equipment is available for the approach?

Next half of the sim the other pilot will fly cross cockpit and direct the training, flying, and fighting the fire. Then they can discuss between them, or in class, what the differences are.

Course, I'm sitting back in the back making sure each item is addressed or discussed or I will throw a wrench into the gears...I say that, most will, like I have said "water your eyes" getting the ship down safely and not endangering the passengers.

Is there any doubt about the last engine failing before they land?

Wonder if I can "trick" them into landing gear up? Yes, I can. But I can't trick them if they are 16 miles ahead of the jet

When they get this one stopped with all the grinding, skidding, smoke, swearing, no engines, low weather, no brakes, and anything else I can throw in there is great relief when the ship does come to a complete dead stick stop. I then ask my last question:

"Lieutenant, tell me how good it is in **G. Heart Country!**"

¹ See the Smoke & Fumes Quick Reference page in the Dart 21 mishap in Chapter 7.

Connecting The Dots

There was once a man who conveyed a message to me through a series of “dots,” or points that he believed to be important. This man may have been crazy, or he may have been brilliant; the jury is still out on that. In either case, he got me to start thinking, and I believe that was his ultimate goal.

The first and most important dot that he gave me was simple: “when you come to a fork in the road of life, which path will you take?” One path may be easy. It may lead you to quick and empty pleasures. It may lead you to the upper echelons of the company. It may lead you to a lot of things, but perhaps not to a clear conscience. So I ask you: do you have the motivation to try the harder path if it means doing the right thing? Do you have the will, the stomach, and the balls to say to those around you that you will not follow the path of least resistance simply because those before you did? I certainly hope that I can and that others will try.

Of course this lesson applies to all of life, but since I am writing this as part of my instructor pilot upgrade, I should probably tie this in to aviation. Let’s say I fly with a copilot that is doing the bare minimum. He is not necessarily lacking, but he is just doing enough to get by. Be it in his systems knowledge, his understanding of the Dash 1 and other publications, or his general flying skills, he is just barely there. I could say to myself, “He’s not doing anything wrong, and I want to hurry up and get home. He’ll be okay.” This path gets me back to my home with my family. This gets me to my nice dinner followed by my warm bed. This leads me to a nice relaxing night with the people

I love. That is where this path will lead me. But my choice doesn't take me down a path by myself. This same path may lead this copilot to a smoking hole in the ground someday. The choices I make and the paths I take do not only affect me.

Some time later, this copilot may upgrade to an aircraft commander. He may have been allowed to get by knowing only what he needed to pass a test. This may lead to an accident investigation board blaming a Class A mishap on this pilot's poor understanding of the aircraft, or the regulations, or how to fly the plane safely. If this comes to pass, could I say that my conscience is clear and my hands are clean? Could I say that I played no part in what happened to him and the others on his aircraft? NO! I would have failed him and everyone involved. If I had taken some time to sit down with him and explain to him the importance of doing more than the minimum required, he could still be alive. My choice, my path should have been the right one. I should have done the job the best way I could. You must strive to be the best at what you do and try to motivate others to strive for the same. You should be able to hop into a jet and say, "I have a huge dick and I can handle anything this son of a bitch can throw at me because I know what I'm doing!"

With that being said, you must also realize a very important truth to keep things balanced in your life. You need to understand that you are trying to walk two paths at once: one personal and one professional. You had better be damn good at flying the aircraft because that can end your life. At the same time, you need to make your family a priority, because that is what makes your life worth living (in my opinion). A wise man once told me that when they reach their arms up to hug you, you have to pick them up. So, do you volunteer to host a charity event, a change of command, or a

squadron party? Do you stay late at work so you can make the final touches on your reports to the boss? Are these the things that are important to you, or do you make it to the ball games and dance recitals and help with homework? Make your choices wisely and try to keep steady on both paths as best you can. It may not be easy, but it will be worth it.

I'll end this with a bit of a grim thought, but a good exercise: imagine what would be said in your obituary. I hope it's a good one. I hope that people cared about you in life and care that you are gone. I hope they say you changed their lives for the better. If not, I hope this motivates you to do better; to be better. Remember that you are always influencing those around you one way or another, so lead from the front and be the example. Make the tough calls and take the right path. Know that once simple act or even one sentence can change someone forever. When your tombstone says DOB – DOD, would you be proud of the dash?

The Dots

- At the fork in the road, which path do you take?
- Who did their job? Who is to blame? Who did it right?
- Would you accept special treatment and leave your people behind?
- When they reach their arms up to hug you, you have to pick them up.
- What will you fall on the sword for? Where will you draw the line?
- One sentence can change someone forever.
- How do you get someone interested in what you're teaching?
- If a student isn't learning, the teacher isn't teaching.
- That, like most accidents, shouldn't have happened.
- The dash is what really matters.
- Shut the fuck up and fly the jet!