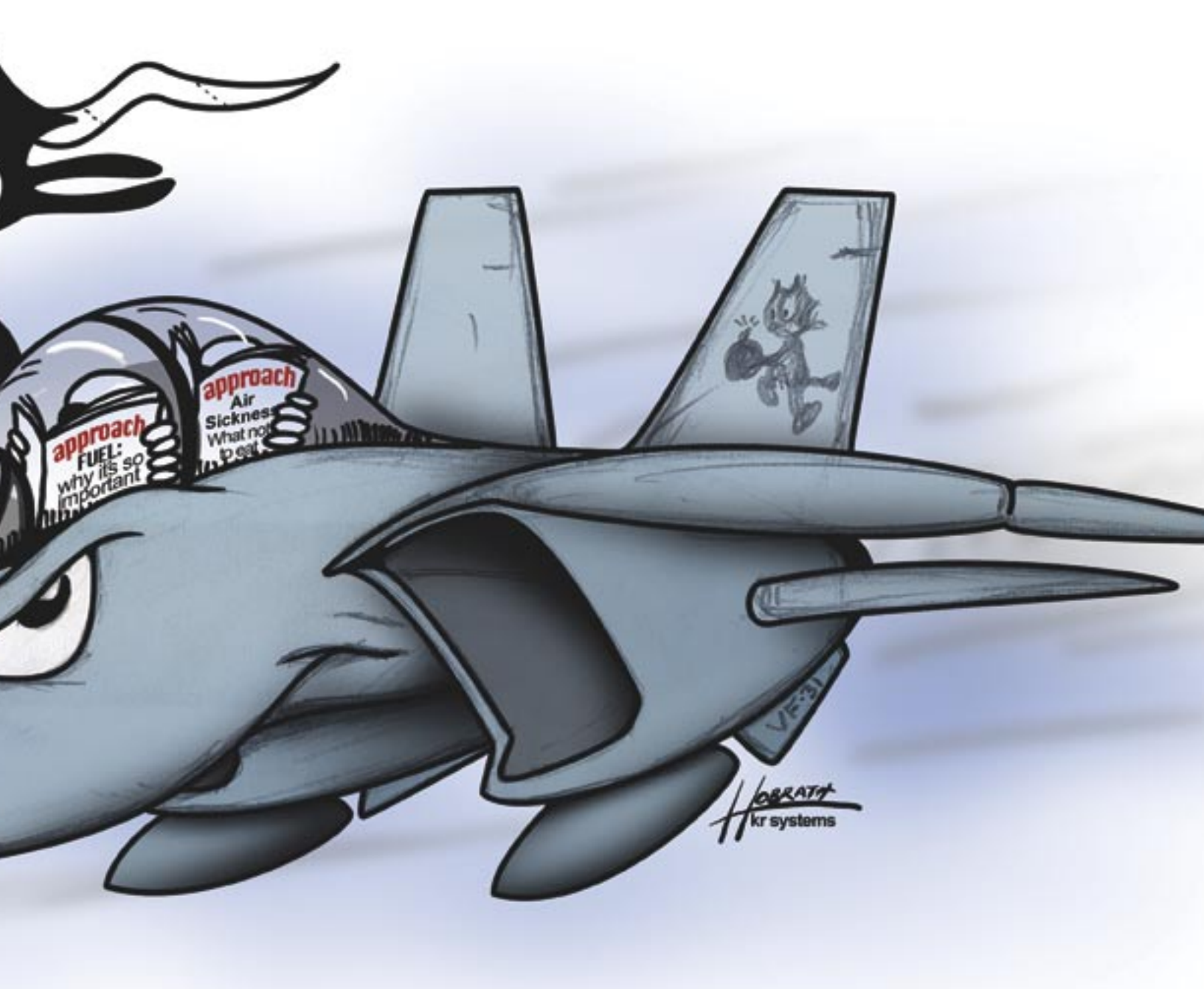
Stupid Chocolate Cake

By LCdr. Chris Wiseman

This story takes place during a weekend in March 2004. I was the safety officer at VF-31, and we were deep in the heart of our work-up cycle for a summer WestPac deployment.

The squadron maintenance officer (MO) and I finally had a plan for a weekend cross-country trip. We built a reasonable training plan to get us down to Atlanta, exercising some of the systems in the aircraft, so we could log the appropriate training codes, and submitted the cross-country request. The only sticking point in the entire approval process was that the squadron was departing for the West Coast at the end of the week, following our trip. We convinced the CO it was a good idea, and he signed off on our request.

The trip was incredibly uneventful, and the weekend was superb. The only potential downside was that one of the people we were visiting had contracted some sort of stomach flu just before our arrival and was a bit under the weather, praying to the porcelain god every few hours. We shrugged off that problem, and enjoyed a spring weekend in Atlanta. The friends we were visiting knew some people, who knew some other people, and we wrangled pit passes and owner's box passes for the Atlanta 500 car race. To make a long story short, we ended the afternoon at the race, sitting in the owner's box and enjoying one of the best buffet spreads I've seen in a long time. The final course offered on the buffet was chocolate cake that was about as far from shipboard cake as possible. I might have overindulged just a little on the chocolate cake.



We left the race early to pack and prepare for the flight home that evening. We had arranged with maintenance to have a duty crew come to the squadron to catch us around 8 p.m.

We arrived by the aircraft with plenty of time to file a flight plan and get started. Then the problems started. The aircraft was out of gas—a situation easily remedied. However, getting a gas truck on a Sunday night, at a reserve base, can take a while. That gave us plenty of time to get the flight plan together and to check the weather.

By now, I realized the second slice of chocolate cake was a mistake. "Oh well," I thought, "just press through, and we'll be home in a couple of hours."

We finally got fuel into the jet, and then the typical Tomcat huffer-ground-power dance started. The two ground crew "launching" us seemed like they'd never seen a starter unit, but, after many hand gestures and trips up and down the ladder, we finally got air and power on the jet. Just as the pilot cranked the first engine, though, the huffer died. The ground crew suspected it was out of gas. Off they went in their tractor to find another huffer (remember this is a Sunday night on a reserve base). We anxiously sat in the jet, awaiting their return.

The pilot wasn't anxious, but the chocolate cake was getting my attention—or was it the start of the stomach flu our friend had? I'm not sure, but I was sure that, after the second huffer failed to work, I had to get out of the jet. I hustled down the ladder (if you ever have tried to get a Tomcat ladder down from above, you know it's not easy), cruised over to the little operations

shack, and gave the chocolate cake back to nature. Five minutes of vacating the products of that superb buffet from my stomach made me feel surprisingly better. I returned to the aircraft just as our trusty ground crew returned from refueling the original huffer, at whatever gas pump one refuels huffers. I climbed into the back seat and started to strap in as the pilot began the start sequence. Sitting there, I thought, as I have on previous occasions, "Wow, this feels like it could be an *Approach* article." I had no idea how correct I was.

The start takeoff and climb-out were uneventful. We convinced the controllers that letting us go directly to Oceana was in everyone's best interest, and we put the nav point on the nose and began to speed home. If you look at a map, you will note that Atlanta to Oceana direct is not very far. The pilot looked at the time-to-go and decided that .97 to .98 Mach would get us home to make our original recovery time.

Meanwhile, I was experiencing another cycle with the chocolate cake. I tried my hardest to keep what was left of my lunch (I had to maintain my record of never being sick in the aircraft) and willed the jet to go faster toward home. Somewhere around the dividing line between North and South Carolina, the pilot gave me bad news. The jet suddenly decelerated, and he told me that we had a fuel split—normally not a big deal. Several procedures in the PCL address fuel malfunctions; the easiest of them is to select the high fuel side and let the system balance out. We tried that, but nothing happened. What he actually saw was the "feed" windows on the fuel indicator showing we were burning only the fuel resident in the right feed group. The remainder of the right fuel system seemed unavailable. The pilot said we had somewhere around 800 pounds (normally 1,600 pounds) available in that system and asked me to start looking for a procedure.

Did I mention the battle with the chocolate cake? Well, this is where the cake decided to counterattack.

It was dark, the cockpit was vibrating, and I had to get out the PCL and see if I could find the procedure to address the fuel malfunction. Out came the blue book, and, after a glance through the fuel procedures, I found nothing that addressed a diminishing feed group. However, there was a new procedure that might have addressed it, but, because of several errors during the copying of the replacement pages, the title bar was entirely left off the procedure. Nothing from the PCL could help me. And, the chocolate cake wanted to visit again.

I long since had stopped flying with an airsickness bag, but I fortunately had a couple of piddle packs in my nav bag. I broke one out and examined it for returned-chocolate-cake suitability. Good fortune again was on my side; I had one of the newer bags with a funnel built into the open end to prevent spillage. In my case, I determined this funnel might cause some very unwanted "blow back," so I modified the bag just in time.

Meanwhile, the pilot was up front killing his snakes, dealing mostly with the fuel system. He figured we had some sort of major fuel emergency. Fuel emergencies were fresh in everyone's minds, as VF-213 had lost a jet the year before to fuel issues, and we had been experiencing degradation of our fuel systems. As he asked me to find a suitable divert in the area, I had another cake-revisit magic moment. I mumbled something about "hold on" and, after completing my little situation in the back, turned to the chart. Again, the darkness, poor cockpit lighting, and small print on the chart combined to make me turn to the modified piddle pack one more time.

I finally got something typed into the nav system. We had reasonable diverts on the way, but we decided to continue to Oceana. The pilot set very specific gates of fuel and distance, and he continually updated our decision to continue. We felt it would not be a good idea to divert an aircraft away from home base after a good-deal cross-country the weekend before our detachment. We also considered that our jet contained two department heads, including the MO.

The pilot slowed down, kept the attitude off the airplane, and let the fuel systems try to sort out themselves. We finally got close to Oceana and were handed over to approach control. As they began to vector us, we threw out the "emergency" word and told them we were going directly to Oceana runway 5. There was a bit of discussion about our intentions over the radio, but using the "E" word really was effective. Norfolk approach handed us over to Oceana approach, and, again, we had to explain the entire situation. We had no idea what we had in the way of useable fuel, and we just wanted to get the jet onto the runway by the quickest means. That meant telling approach, even though Oceana was landing

runway 23, we intended to land on runway 5.

As we approached the runway, the pilot kept the nose down to prevent the fuel from migrating aft and being further inaccessible. Nose down also made our approach a bit faster than normal. As we approached the runway, we saw a C-130 (actually, all we saw was a large cluster of lights) heading straight for runway 23's threshold. We heard approach tell the C-130 an emergency aircraft was on final for runway 5 and to wave off. The lights kept coming—really—all the way to touchdown. We were astonished. Approach told us we had to sidestep to the left runway, a shorter runway, but still with plenty of concrete for our needs; we began to sidestep. Tower yelled at the C-130 pilots to clear the runway to make it available for us. They finally complied, with just enough time for us to sidestep back to the right and to make an uneventful landing.

I was in no shape to do anything but crash on the ready-room couch for about an hour, within easy reach of the head, before I could drive home.

Our maintainers later found that we had broken the high-pressure, motive-flow line that runs from the right engine to the right feed-tank boost pump. This fuel is used to drive the boost pump, which provides motive-flow fuel for fuel transfer within the right system, as well as provides high-pressure feed fuel to the right engine. This problem explained the right fuel-pressure caution light the pilot had seen.

A number of automatic features of the fuel system should have kicked in with the fuel-pressure light, including the opening of the sump-tank-interconnect valve and other valves throughout the aircraft. The pilot forced similar actions by moving the fuel-feed switch to the high side, aft and left. This action opened and closed valves in the fuel system in an attempt to balance out the system. We are not sure if any of these things had any effect on the system during our flight. Maintenance tore open the fuel cells and discovered the break in the motive-flow line, but they still can't explain the inability of the system to balance itself. The jet has been thoroughly tested, and the fuel system has returned to normal operation.

The next day, I went to base operations to discuss the C-130 situation with the tower controllers. They said they had given the C-130 the waveoff command and instructions, but the pilots didn't comply. Evidently, the C-130 was part of a Spanish Air Force exercise scheduled the next week. They were early and apparently had some communication-language issues with our controllers. The landings turned out fine, but they easily could have gone wrong had we been closer and committed to land or single runway. As the aircraft that was responding to tower's commands, we, the emergency aircraft, might have had to wave off.

Three weeks later, our squadron lost a Tomcat off the coast of California to a fuel-system malfunction. Looking back, I realize that just as easily could have been us. The questions I had to ask the mishap crew following their ejection would have been very uncomfortable for me to answer had they been asked of me. I'm talking about questions like, "Why did you not land as soon as you determined you had an unknown amount of useable fuel on board?" Or, "Why did you even go flying if you weren't 100 percent?" Puking in the back seat is definitely not providing the required back up and copiloting information to the pilot.

As usually seems the case in these types of incidents, we completed the flight, landed safely, and wrote about it later. As the safety officer, I should have called timeout on deck in Atlanta and flown back the next morning, after the chocolate cake had left my system. But, as time continues to prove, hindsight is always 20/20. The purpose of these articles is to share that vision with each other and, hopefully, give someone else the power and rationale to call timeout and to try again some other time.

Chocolate cake never has looked the same since that day.

LCdr. Wiseman flies with VF-31.

WESS Update

The WESS Barrier Removal Team (BRT) is working to improve the program. Help us make WESS better, use the on-screen feedback form or call the WESS help desk at 757-444-7048.