Flight Report: Call of Duty

There I was, at my desk, keeping my head down. They came to me, "Sir, can you fly today?"

"I could."

"Today's test mission is not routine and the authorities want a designated representative on the flight. "

"You mean a Flight Analyst DER?"

"Yes sir."

"Ok." Three hours later I'm in the jet, in the back. I hate the back. Too luxurious – I wasn't built for that. I'll fly up front at the drop of a hat. I've scrambled to the back after takeoff to change the center of gravity and stress the jet, but never before have I launched from the back of a company flight test article. Mission planners said they needed two guys up front too. We don't often test with three of us, so this must've been important. Yeah, it was. Even with all the urgencies, every person in every department straining & pushing for certification, I'd be straining more. My assignment was the company's number two priority.

Ninety minutes into it, we were at FL430 and cold-soaked, to the bone. Standard temperature up there is 57 degrees…below zero. I'm pretty sure this was colder, but that was a good thing. We wanted to test the most critical condition. Better that we test it first than a customer. The *chauffeurs* had it good. Normally revered as test pilots, this time they were chauffeurs. It was an analyst gig this time. Not wanting to kneel at the cockpit and not having a jump seat to occupy during the cruise cold soak, I assumed executive authority and stayed in back. Without a headset in the cabin, it felt like being back in the USAF, flying NORDO. But it felt luxurious.

Finally, we hit the mission's target parameters and the guys up front gave the "All clear." In return, they needed a signal to know when to watch their screens and transmissions for signs of electromagnetic interference (EMI). EMI is sneaky, known to bite amateurs in the you-know-what. Again, better our guys up front than customers. That would piss them off and leave us with our pants down. It was show time. Squeeze past the instrumentation rack to the way back, steady the camera with one hand, ready the other hand to trip the sensor, and signal the crew with a third hand. Crap, that's not going to work. Replan! Got it – go Navy and call the ball - a shouting verbal countdown it is… "Three…Two…One… GO!"

Did it work? Yes, we have drainage. Move to the next duty to discharge. Dump my load and call it. "Three… Two... One… Evacuate! GO! GO! GO!"

It worked. Everything worked. Hooya! But wait, there's more. The feds want another demo eight thousand feet lower. Squeeze forward to the cabin, sit, and recharge. Get the chauffeurs' clear signal, squeeze out another round to the way back, poop out more video, another countdown, another good test.

They wanted a third. Not wanting to pinch through again just to sit in the executive section, I just grabbed a stool and stayed put for the third performance. It was already getting old. At 1800 hours on 4/1/15, video recording was finally done, or as Hollywood-types say, it was in the can. The man-machine interface, so to speak, worked like a charm. I was totally petered out with my face flushed, but I'd have to admit it was rewarding in the end: this was my number two career highlight as an analyst. Now I need a walk-out song…something from a famous scat singer.

(Continued next page)

Soft Skills   *Mark Mondt*

The 15-08 edition of the FTN started a conversation about professional development and leadership. That column motivated these thoughts from Mark Mondt, Secretary of SFTE's Board of Directors, on the need for soft skills.

People have a tendency to focus on developing technical expertise which is, of course, beneficial. But "working on" the soft skills, with business, management, and/or leadership, is harder to approach in an intentional manner.

There seem to me to be "hard" skills and "soft" skills. Hard would be technical knowledge—familiarity with statistical techniques or proficiency with data processing and analysis tools. Maybe better writing skills could be included here. Soft skills, on the other hand, are the primary stuff of leadership. Business

> CONGRATULATIONS PATUXENT RIVER — Chapter No. 4
>
> During the April 1, 1970 National Board of Directors meeting the Patuxent River Chapter was approved as Chapter No. 4. Presently the Chapter consists of 41 approved members with 15–20 more local potential members. The Chapter membership committee is organizing a campaign to contact presently untapped sources of membership the Naval Air Test Center, the Naval Air ystems Command, and the University of Maryland. Chapter meetings in January and February of 1970 resulted in an election of officers and a set of by-laws for submittal to the national office. The National Board is pleased to recognize Patuxent River Chapter as an enthusiastic new member to the ranks of SFTE.

The Patuxent River Chapter of the SFTE is almost as old as the Society itself. This announcement appeared in the April 1970 issue of the Flight Test News, Vol 1.

and management, things like cost and schedule, could fall into the hard or soft camps depending on which aspects one examines. In larger flight test departments, soft skills are less critical.

When a department consists of one or two FTEs, then they have to be able to handle financial and schedule implications themselves instead of relying on others. For example, some flight test programs have one or two FTEs, and programs are run by an individual. That kind of breadth of experience is not needed as much in intermediate size departments, between ten and forty FTEs, for example, and technical specialties begin to get more focus. Differing companies break up the job differently which places differing levels of demand on the different skill sets.

Some of the critical soft skills include the following: Conflict resolution (not causing it excessively, not shying away from it, but willingness to force issues that must be forced); Initiative; Ability to maintain personal discipline and not discard it when pressure to do so becomes intense; Time management; Ability to prioritize multiple responsibilities; Ability to balance multiple competing interests and thread the needle through multiple competing constraints when attempting to accomplish the organization's objective; and finally, Exercising judgment (knowing when to stop, when to go and when to take a turn in direction). These might be leadership skills, but I more generally refer to them as soft skills. And they are indispensable.
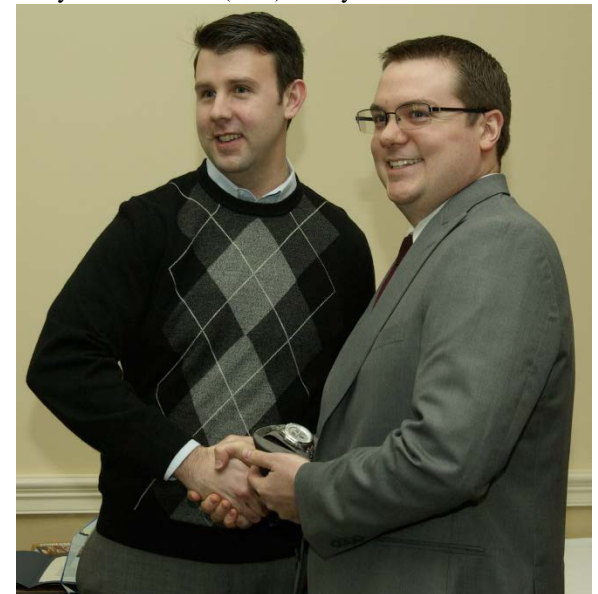
Flight Test News

http://www.sfte.org/

Pax River Chapter   Lauren McKay

SFTE's Patuxent River Chapter has completed a number of accomplishments over the past year in an effort to revive the chapter and strengthen the flight test community in the Pax River area. The Chapter Bylaws were reviewed in January and updated to reflect current initiatives and chapter status. In February, the Chapter held Executive Officer elections. SFTE Patuxent River would like to introduce their new Executive Committee: President Jake Kiehlmeier (*pictured below, left*), Vice President Seth Shaw, Secretary Charity Ayre, and Treasurer Lauren McKay. You can reach any of the chapter officers via their gmail account, paxriversfte@gmail.com.

The Chapter would also like to congratulate the recipients of the 2015 Naval Test Wing Atlantic (NTWL) Awards. NTWL is composed of Air Test and Evaluation Squadrons Two Zero (VX-20), Two One (HX-21), and Two Three (VX-23), as well as Unmanned Aerial Systems Test Directorate (UASTD), and U.S. Naval Test Pilot School (USNTPS). NTWL is the Navy's principal flight and ground test activity for the development and acquisition of aviation systems. SFTE Patuxent River sponsors the Flight Test Engineer of the Year Award. The award recipients were as follows: Test Pilot: LCDR Matthew S. Dominick (SFTE Patuxent River Chapter Member); Test Naval Flight Officer: LT Kyle M. Beilke; USN TPS Instructor: CDR Daniel R. Fucito; Flight Test Engineer: Mr. Benjamin J. Brierty (pictured below, right); Maintenance Officer: LCDR Anthony D. Pink, and Maintenance Chief Petty Officer: ATC(AW) Carey D. Zielke.

In March, the Patuxent River Chapter hosted a Brown Bag Discussion on the topic "Drift into Failure" (based on the book "Ten Questions About Human Error: A New View of Human Factors and System Safety", by Sidney Dekker). The chapter also hosted a technical meeting on Scientific Development Squadron One (VXS-1) located at Patuxent River Naval Air Station. The unit patch is pictured here. For more information on the Patuxent River Chapter, you can email the Chapter President jacob.kiehlmeier@navy.mil, or visit their Google Calendar and Facebook group.
www.facebook.com/groups/paxriversfte/.

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Facebook – http://www.facebook.com/FlightTestEng

Flight Report: Call of Duty (continued)

Test Date: April 1, 2015, no foolin!

Thanks to Al Lawless for sharing this lighthearted but true report. Sometimes truth is stranger than fiction.

Tech Council Update

The Tech Council held their monthly teleconference on 16 March 2016 at 12:00 PM Eastern. Meetings are held monthly on the third Wednesday, and any member may call in. Business covers a variety of topics including the Technical Notebook, Symposium judging, etc.

Did you know the Tech Council maintains a subject matter expert list, available to members via the SFTE website here? Members can ask experts anything, e.g., questions about safety, tricks and traps, and where to find more information. Experts may then respond to whatever degree appropriate. There is no obligation or payment involved, just a helpful TC service.

Number Two Career Highlight for Flight Analyst

The TC is updating this list and is looking for nominations in any flight test-related field. If you or know someone you know is knowledgeable and agreeable, then please contact the TC Chair, Al Lawless at sfte@alawless.com to begin a simple vetting process. To get started, the TC only needs basic information showing accomplishments or knowledge in the field of expertise. This can be in the form of a resume or simple narrative, whichever is convenient. Letters of Recommendation are also welcome. SFTE membership is encouraged but not required to participate as an expert. Additionally, there has been discussion about expanding the categories of experts. Computer programming, specific computer languages, and data science are all areas in which we could benefit from added expertise.

Micro Courses Jeff Stanley of SFTE Wichita requests proposals for micro-courses for the upcoming Annual symposium. Contact any member of the TC with recommendations. For example, last year's symposium included CRM, optical measurement for structural test, and MATLAB.

2016 Flight Test Safety Workshop 3-5 May 2016

Digital Notebook

The call for Tech Experts and Micro-Courses are both great opportunities for synergy with the digital notebook. For example, consolidate notes from lectures or distil the elements of a technical paper presenting a novel approach for incorporation into the Reference Handbook. Alternately, submitting content to the Notebook may demonstrate the knowledge needed to establish new areas of expertise.

The Difference between Anecdote and Data

This article first appeared on johndcook.com. The author, Dr. John Cook, a consultant and applied mathematician, has granted permission to republish it here. The subject of his column applies directly to flight test, to our ability to weigh subjective observations or qualitative data and synthesize it with the quantitative data we know best to paint a complete picture of aircraft capabilities and limitations, understand risk, project schedules, and manage tasks.

The difference between anecdotal evidence and data is overstated. People often have in mind this dividing line where observations on one side are worthless and observations on the other are trustworthy. There is no such line: Observations are data. Some observations are more valuable, and this value lies on a continuum.

I believe rib eye steaks are better for you than rat poison. My basis for that belief is anecdotal evidence. People who have eaten rib eye steaks have fared better than people who have eaten rat poison. I don't have exact numbers on that, but I'm pretty sure it's true. I have more confidence in that than in any clinical trial conclusion.

Hearsay evidence about food isn't very valuable, per observation, but since millions of people have eaten steak for thousands of years, the cumulative weight of evidence is pretty good that steak is harmless, if not good for you. The number of people who have eaten rat poison is much smaller, but given the large effect size, there's ample reason to suspect that eating rat poison is a bad idea.

Now suppose you want to get more specific and determine whether rib eye steaks are good for you in particular. (I wouldn't suggest trying rat poison.) Suppose you've noticed that you feel better after eating a steak. Is that an anecdote or data? What if you look back

through your diary and noticed that every mention of eating steak lately has been followed by some remark about feeling better than usual. Is that data? What if you decide to flip a coin each day for the next month and eat steak if the coin comes up heads and tofu otherwise. Each of these steps is an improvement, but there's no magical line you cross between anecdote and data.

Suppose you're destructively testing the strength of concrete samples. There are better and worse ways to conduct such experiments, but each sample gives you valuable data. If you test 10 samples and they all withstand two tons of force per square inch, you have good reason to believe the concrete the samples were taken from can withstand such force. But if you test a drug on 10 patients, you can't have the same confidence that the drug is effective. Human subjects are more complicated than concrete samples, and concrete samples aren't subject to placebo effects. Also, cause and effect are more clear for concrete. If you apply a load and the sample breaks, you can assume the load caused the failure. If you treat a human for a disease and they recover, you can't be as sure that the treatment caused the recovery. That doesn't mean medical observations aren't data.

Carefully collected observations in one area may be less statistically valuable than anecdotal observations in another. Observations are never ideal. There's always some degree of uncerainty, in the form of bias or effects that can't be controlled, etc. There's no quantum leap between useless anecdotes and perfectly informative data. Some data are easy to draw inference from, but data that's harder to understand doesn't fail to be data.

Follow the author @johndcook on twitter.