What Did Paddles Say?

By LCdr. Thomas A. Jones

My trusty S-3B was rolling in the groove behind USS *Theodore Roosevelt* (CVN 71). The weather was not good, and the carrier was headed into a thunderstorm. Winds pushed 40 knots, and the deck was moving moderately.

My COTAC called the ball, and paddles answered with what I thought was "Roger ball." Paddles then said something else.

In the brief moment that I asked my COTAC, "What did he say?" the aircraft settled cleanly onto the ace. As I throttled back after stopping, my old-hand COTAC calmly replied, "Power."

I am a Cat I in my squadron; I also am the oldest Cat I in the fleet. With this dubious distinction comes some of nature's pranks and downfalls; one of the most annoying is the slow degradation of my hearing. I have done most of the right things to protect my hearing. I have worn soft earplugs under my helmet since I was in flight school. I wear hearing protection at home when working with power tools or mowing the lawn. Yet, as my time flying Navy jets approaches the double-decade benchmark, I find it more difficult to hear. I long since had been accustomed to turning up my ICS and UHF volumes all the way, much to the dismay of aircrew who manned the jet after me. When I removed the soft earplugs, I found the ambient noise level was so high I even had less ability to understand the radios and ICS. Now came a new obstacle: the communications-improvement program (CIP) of the S-3B.

I flew only non-CIP birds while going through the FRS, and my first experience with CIP came at VS-32. CIP gives the S-3B many wonderful and very useful capabilities, such as VHF, marine band, and satcom. Everyone

knows that while the great gods of modifications giveth, they also taketh away. In the case of CIP, it comes with the price of significantly reduced audio output to the aircrew, making it hard to hear in the cockpit.

After my politically correct but still stern debrief from paddles about my failure to respond to his power call, I went to sleep wondering how I was going to overcome my current hearing dilemma. My answer came the next morning while on FOD walkdown when I happened across a NavAir physiologist, who, to my surprise, is on a team working to improve hearing protection and comm.

"So, how hard can it be to remedy the S-3B CIP comm woes and prevent some noise-induced hearing loss?" I asked.

My new NavAir buddy sent me information about two different earplugs they have been looking at. One, developed by the Army, is called CEP; the other, being developed by the Air Force, is called ACCES.

CEP is similar to the soft, foamy earplugs we have worn for years, but it has radio comm piped through its core to the inner-ear canal. ACCES is similar to a hearing aid in appearance.

I immediately did more research and tried both earplugs. I visited the Air Force site developing ACCES. I immediately liked ACCES—the sound attenuation seemed significantly higher, and, unlike the CEP, you can't screw up the installation of an ACCES earplug. It only goes in one way—the right way. I learned foam earplugs are good for about 22 dB of noise attenuation, if they are installed properly (the earplug end is almost flush with your ear-canal opening). Most people don't get them in deep enough, and attenuation quickly drops off as more of the earplug hangs out.

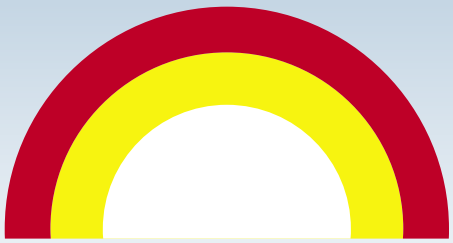
ACCES is not without its shortcomings. It's custom made, which immediately sends up logistics flags. Who makes them? Where? How much do they cost? How long does it take to get your custom earplugs? How long do they last? What happens if they are lost or broken? How do I clean them? They're just not like grabbing a pair of foamies from the box. To top it off, ACCES is still being developed and tested on Air Force F-22 crews and has not been through all the mandatory flight-safety tests.

I wear hearing protection at home when working with power tools or mowing the lawn. Yet, as my time flying Navy jets approaches the double-decade benchmark, I find it more difficult to hear.

So I wouldn't say I'm all the way back to square one. I do know we have a problem with the S-3 CIP, especially with older fleet bubbas like me. But, I know we have potential solutions.

I asked my NavAir friend how we get this stuff approved through the catacombs. NavAir is pushing from their side, but there's little pull coming from our side—the fleet. Apparently, it

On the Horizon



Navy researchers at San Diego Naval Medical Center have developed a pill to protect hearing. "The hearing pill" is going through clinical trials and holds promise in the prevention of and recovery from hearing loss. Because the first human study has just started, sufficient time is needed to analyze the data and validate effectiveness in humans.

Although the pill is available commercially, it has not been tested in the aviation community and is not authorized for use.

Did you know?

• Health standards say you shouldn't be exposed to noise above 85 dB for more than eight hours a day, and this should be followed by 16 hours of quiet recovery time.

You do the math:

- External noise from naval jets ranges from 130 to 150 dB (measured 50 feet from the aircraft, approximately 45 deg. or 135 deg. off the nose/centerline).
- Noise in a jet cockpit ranges from 115 to 130 dB.
- Today's double protection of earplugs and earmuffs provides approximately 30 dB of attenuation.
- With just one or two high-performance jet launches, a final checker will exceed the safe daily noise-exposure limit.
- Following long flight-deck duty days exposed to jet-aircraft noise, there are few, if any, quiet spaces below 85 dB for flight-deck crews' hearing to recover. The result is flight-deck crews often are exposed 24 hours a day to noise levels above the recommended limit.

• Your earplugs and earmuffs are nearly the same design worn 30 to 50 years ago.

• The No. 1 Veteran Administration disability claim is hearing loss. All services combined, claims totaled over $442M in 2002, over $5.5B since 1977, and the trend is upward.

• Navy jet-noise-induced hearing loss generally starts in the frequencies you need to hear speech. Your ability to discriminate consonants, as opposed to vowels, goes first. Loss of the ability to discriminate between consonant sounds like "s" and "f" make it more difficult to understand what's being communicated.

Next time you go for your annual audiogram, ask the audiologist to explain your results. Keep a personal copy of all your audiogram records.

all starts with the pilots, aircrew and maintainers documenting the problem. My plan, after writing this article, is to complete a hazrep, and I encourage you to do the same. The sooner our decision-makers know we have a safety-of-flight issue, the sooner we may get better hearing protection and comm.

If you don't think this problem affects you, think about the happy hours you attended in Pensacola or Oceana where many retired aviators were present. The older guys (WW II and some Korean vets, my father one of them) all had hearing aids in both ears. They flew around in TBFs, SBDs, SB2Cs, F4Fs, and the granddaddies of noise, the F6F and F4U. They took off and landed with the canopies open, with no hearing protection other than the leather flight helmet. The Korean War vets who ushered in the jet age and the Vietnam-era aviators who flew with the first version of our modern hard-plastic helmet enjoyed a modest increase in hearing protection. Most of those gents did not wear hearing aids; they just spoke really loud.

Wouldn't it be nice if, in the years to come, when we're gathered in the T-Bar or talking in the I-Bar, we're not the guys wearing hearing aids or talking really loud?

LCdr. Jones flies with VS-32.

Can You Hear Me Now?

The Importance of Reporting Radio-Communication Problems

By Valerie Bjorn and Jim Wilt

The TV show "20/20" recently did a piece on bystander apathy—a sociological phenomenon that occurs when a group of people knows something's wrong, but all stand by and do nothing because they think someone else is fixing it. The question for us today is whether bystander apathy is happening in naval-aviation radio communications.

We are talking about communications you missed because you couldn't hear what was said—about having a hearing loss that does not improve over time, about taking corrective action to help prevent further hearing loss, and to improve the ability to hear important communication that may prevent accidents.

Why is hearing protection such a big issue? Missed communication can be hazardous and expensive. In a recent Class B aviation mishap, the aircraft-mishap board faulted the pilot for missing a radio call advising him of an aircraft fuel-control problem. Because the pilot missed the auditory warning, the developing emergency inside the aircraft was handled wrong, resulting in the mishap.

A quick analysis of this mishap demonstrates how a radio call might have been missed. The noise in the cockpit is approximately 125 decibels during climb and cruise and 130 decibels during takeoff and landing. The pilot wore a properly fitted helmet that provided about 30 decibels of hearing protection across all hearing frequencies.