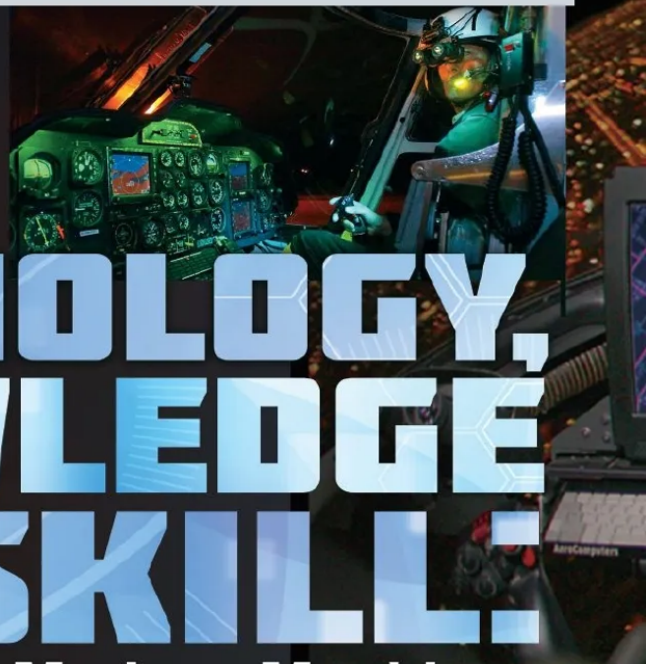




TECHNOLOGY, KNOWLEDGE AND SKILL:

How to Train for Modern Machines

By Terry Palmer, APSA Training Program Manager

Everything we do revolves around technology. We don't use cash; we scan an app or use a card with a chip. We don't tune a television antenna; we stream media with thousands of choices. We don't dial a telephone; we video

conference and text or ask our phone to make the call.

In aviation, we have replaced paper charts with electronic flight bags. GPS and flight directors have replaced traditional navigation instruments. And auto pilots truly fly our aircraft.

Our education has also changed with technology. We read most textbooks and manuals in electronic format, giving us word search functions that rarely require us to read the entire book and never require us to reference page numbers. When we need an answer to a question, we first check Google, Wikipedia or another website instead of reading a book. Virtual training has replaced many onsite courses. And all of this is often accomplished while we are completing multiple tasks, like checking email and texting, distracting us and often making us fail to comprehend the information.

Indeed, modern technology is so addictive that we are often at a loss when it doesn't work.

High-tech avionics have changed the way we fly and maintain aircraft. Technicians now train on computer-based, equipment-specific systems that vary from aircraft to aircraft. Gone are the days of simply checking the aircraft for mechanical integrity. Training and managing technology is a major factor in keeping aircraft airworthy.





What to Use

Technology is useful until it keeps us from being able to accomplish tasks when it is not available or the digital environment distracts from the true task at hand. Limiting technology to what is necessary and recognizing overuse is critical to operating safely and learning effectively in the digital world. Single-pilot operations do not require two tablet computers and a cell phone—though we have all seen it happen.

Aviators constantly debate the benefits of analog versus glass cockpits. Analog is the standard for most seasoned pilots. It is what we have flown for years. It is what we trained in. It is comfortable. But as much as we might dislike change, glass cockpits are here to stay, and when used correctly, they offer more information than analog instruments.

So, how do we move from the analog mentality to digital, high-tech thinking and still maintain our skill and comfort level? The first time I went from analog to digital, I was overwhelmed. I didn't really know what I was looking at. My standard scan was useless,

and where in the world was the airspeed indicated? The change took concentration, practice and improved understanding of the digital displays associated with the equipment. It took time and training.

How To Train

As we add equipment to an existing aircraft or upgrade to a state-of-the-art machine, training is essential. Operations quickly become risky when our minds are slow to interpret digital indications. Practice and concentration is required to build confidence in the high-tech environment. In many cases, it goes back to the basics of learning your way around the cockpit.

Ground school with visual aids is essential to overcoming the challenge. A cockpit poster, in addition to computer-based visual aids, can be the most effective tool. Visual aids help the mind grasp changes and the memory accept the new perspective. A review of basic checklist procedures referencing the appropriate instrument or indication can build the proficiency needed to fly

digital aircraft with the same smooth skills we have in the steam-gauge world.

If a simulator is available, our training can have faster results, as we can practice in many different environments. If a simulator is not available, we must give ourselves sufficient time to learn the orientation of the instruments and information provided. In most cases, we can use a computer to simulate the various indications and multiple pages of displays. After coming to understand the equipment, we should sit in the aircraft and review the buttons, switches and pages before we launch into actual flight conditions.

The digital environment offers so much to see and comprehend that we must reserve ample time for our training. If we have prior experience with glass cockpits, it may not take as long; however, different types of equipment might still require thorough review. Some manufacturers provide web- or video-based training materials. The materials can be helpful, if we review them multiple times.