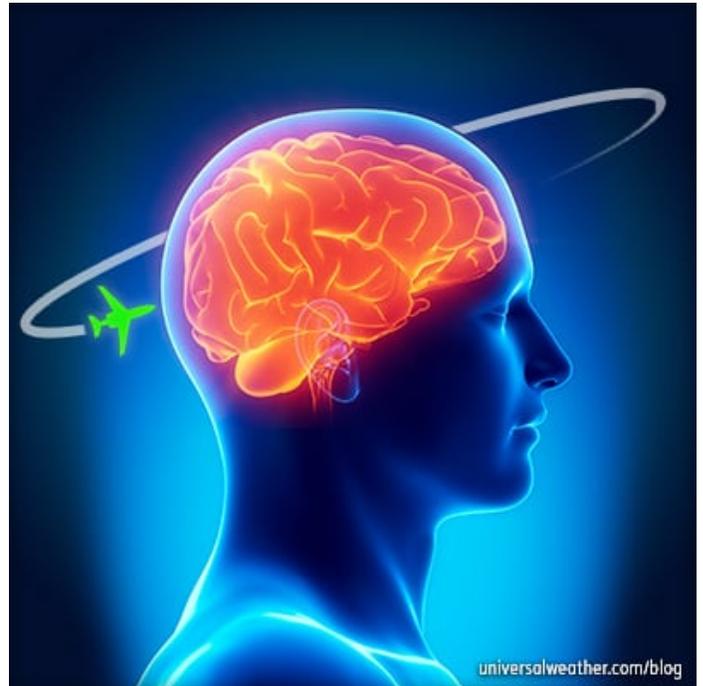


## BUSINESS AVIATION AND THE MYTH OF MULTI-TASKING

This is a post by guest author Dr. Shari Frisinger. Shari was asked to contribute to our business aviation blog because of her expertise in behavioral situational awareness of human factors. Any thoughts expressed below are entirely Shari's and do not necessarily reflect the views of Universal Weather and Aviation, Inc.

Multi-tasking is perceived as a pre-requisite for success and high productivity. I challenge that belief. Before you disagree with me, let me define multitasking: performing two tasks that demand your active and focused attention simultaneously. Notice the phrase 'demand your active and focused attention.' Normally we can walk and talk at the same time. Yet when we try to walk on ice, or on a non-normal surface, we focus our attention on walking and are unable to maintain the same level of conversation we had prior concentrating on safely getting to our destination. It can be challenging pulling out into a busy freeway and trying to think about meetings, schedules, flights, or other non-essential tasks. It also occurs when you encounter difficulties with a take-off or landing, and do not hear or see other incoming signals. It can occur when you are listening to your scheduler/dispatcher about a change in flights and trying to work with maintenance on a scheduling issue. Your mind cannot focus on both conversations at the same time. It is physiologically impossible. When working on mindful activities, your brain works sequentially. Step 1 needs to be done before step 2.



### 1. It's not multitasking, but rather quickly switching between tasks

What we have gotten good at is quickly switching between tasks. Unfortunately, that demands more attention on your cognitive processes and allows details to fall through the cracks. Our task mental processes include understanding (the situation and new information), deciding (what is important and the available options), recalling (similar scenarios and remembering pertinent data), and preventing (extraneous thoughts from entering your consciousness). Actively monitoring systems takes brainpower. Solving problems takes brainpower. Interruptions and remembering to check back after the interruptions takes brainpower. Brainpower takes energy. We mentally struggle to get back to a 'checkpoint' just prior to where we were before we were interrupted to ensure a consistent or

continuous flow. Moreover, contrary to popular belief, our brainpower is finite. Bottom line: When accurateness is significant, do not break up your concentration.

Eastern Air Lines Flight 401 on 12/29/72 provides an excellent example of this. The crew was preoccupied with a malfunction of the nose landing gear. They inadvertently misinterpreted Miami International (KMIA) approach control's question of "How are things coming along out there?" The crew did not hear any warnings and realized almost too late their descent position. Their attention focused on the malfunction to the exclusion of monitoring flight instruments. Other accidents or incidents have occurred because of inattention to details or the belief that multitasking is achievable.

## **2. Tasks aren't linear**

Tasks are not under your complete control and linear with predictable outcomes. Shortened deadlines can bring about interruptions and leave tasks half-completed. Casual conversation 'while you are waiting for...' makes considerable demands on your attention. You can become engrossed in the conversation and lose track of time. Or you can only half-listen to the conversation while you wait. Either way, when it's time for the task to resume, your brain must backtrack to get re-acclimated to the task. Think of a relay runner passing the stick – one does not immediately stop and the other immediately begin.

All these situations are ripe for the delusion that we can multi-task – that we can accomplish more if we do several different things at the same time. One of four actions accommodates disturbances: lower the criteria for completion (quality, accuracy), skipping procedural steps, postponing one of the tasks until later, or interspersing rote tasks with other rote tasks. There are tasks we have performed numerous times to the point that they can be done on autopilot. At that point we are aware of them, just not actively thinking about what we are doing. The more you use a pattern, the less attention you need to complete the task and the greater the chance you can do something else at the same time. Scanning the cockpit visuals can be done while talking to air control and hearing passengers board. You are mildly aware of your surroundings and not doing much with this information. This can only occur as long as there are no disruptions or unexpected events. Some Safety Management Systems (SMS) and Advanced Qualification Program (AQP) tasks can be in this latter category.

## **3. Some tips for dealing with multiple tasks**

First, realize that multi-tasking is impossible. Stop trying to disprove this or challenge its validity. That alone will free up your mental resources to concentrate more fully on the most important task. If possible, focus on one task to completion. In our real world, however, that is not always achievable. Set a time for 15 minutes (or even 10), and pour all your mental energies into one specific task. Ignore idle conversation and other distractions. In as little as five uninterrupted minutes, you can accomplish more than in 10 scattered minutes.

Talking aloud as you complete your checklist, verify flight information, or review completed tasks causes your mind to focus on that task. If you are reading and repeating, your mind is engaged in those

activities and cannot involuntarily veer off in another direction.

Make a list of what grabs your attention. Where do you spend your thought time? Is there a more efficient way to structure your tasks? What decisions get hung up waiting for another action that is outside your control? How can you rearrange your activities to take the path of most economical in terms of making decisions and using your brain power? Look for ways to stop that 'stop'-getup-to-speed'-start-again' cycle.

Lastly, much as your body needs a stretch break, so does your mind. We can easily get overwhelmed when we try to do several tasks at once; monitoring, talking, writing, e-mailing ... When you take time (even a few seconds) to clear your mind, you return to the environment with a 'new set of eyes.' Similar to rebooting your computer and clearing out the cache, you are better equipped to consciously decide what areas need your attention.

## **Conclusion**

There will always be a multitude of tasks to complete, and your resources will always be limited. Knowing what you can do with minimal mind-engagement (monitoring) can free up your mental energies for the activities that demand them. Care must be taken to not ignore surrounding events that may quickly demand your attention later. Situational awareness in behaviors, equipment, and environment can help you direct your attention to the important matters while not over-taxing your brain.

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