

AVIATION

m e m o r y



BY TOMMY NEWTON



Dr. Marty Bink

Marty Bink quipped that he studies other people's memory because he does not have one. Despite popular perception, the human memory doesn't work like your computer, he said. "You don't put stuff in and it comes right back out," said Dr. Bink, assistant professor of psychology at WKU. "Rather, the way memory works is that we do retain some information from an episode or a fact, but when it becomes time to remember it, we pull partial information back to mind. The retrieval process is really based on partial retrieval of information, and we have to make a decision about whether that is in fact what we remember."

Dr. Bink, who received his bachelor and master's degrees from Ball State University and his doctorate from The University of Georgia, is most interested in how memory is used in the service of solving novel problems. "That's sort of a definition of learning," he said. "It's how we use past experience to deal with new things. So I study several different aspects or processes of memory."

One use of memory Dr. Bink studies is called prospective memory — how to remember what we need to do. And that portion of the memory process plays a key role in Dr. Bink's aviation safety research on helping pilots do a better job. "One of the things we know about memory is that if you have all the time in the world to remember something, you will remember it. But in the cockpit, especially in emergency

situations, you're under some degree of pressure, and memory processing works very differently." Generally, in prospective memory, something in the environment cues a person to do something, he said. "The problem with applying the theories of prospective memory to the cockpit situation is that the environment really never changes," Dr. Bink said. "In the aircraft you have the same layout. The situation may change but the environment doesn't change. How can we find cues that pilots can use to aid their prospective memory, especially when they're busy, whether it's an emergency situation or whatever?"

Dr. Bink, who conducted the research for NASA's Ames Research

Center in California, observed pilots to identify the processes they were using or not using and compared those to the processes listed in their training manuals and looked for any conflicts. He then made recommendations on changes.

"The things that affect prospective memory are a double-edged sword. Prospective memory is really bad when we're busy — multitasking is the popular terminology. When we're really busy, prospective memory is not good because we don't have resources to sit and reflect on what it is that we have to get done. But prospective memory is also bad when we have all the time in the world because we tend to think about things other than our intentions." ■

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Analyzing the types of prospective memory demands pilots and controllers encounter.