

Older air traffic controllers perform as well as young on job-related tasks

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In a study that challenges the mandatory retirement of air traffic controllers at the age of 56 in the U.S., researchers have found that air traffic controllers up to age 64 perform as well as their young colleagues on complex, job-related tasks.

The study of Canadian air traffic controllers, who can work up to age 65, appears this month in the [Journal of Experimental Psychology](#).

The researchers found that while older air traffic controllers experience normal age-related declines in some [cognitive skills](#), their expertise on the job enables them to overcome these deficits and function on a par with their younger peers.

The issue of mandatory retirement is especially pressing because a large proportion of the nation's air traffic controllers are now retiring, or nearing retirement age.

According to a congressional subcommittee hearing on the matter in 2008, most of the FAA's current 14,800 controllers were hired during the mid-1980s, after then-President Ronald Reagan fired more than 11,000 controllers who had gone on strike. Several government reports have warned that the upcoming wave of retirements could undermine the safety of the nation's aviation system.

"The question we were interested in was whether older controllers could continue to do the job," said University of Illinois psychology professor

Art Kramer, who conducted the study with graduate student Ashley Nunes.

"If so, perhaps we could keep these people on the job for a little longer and this way provide more time for the transition and appropriate training of new controllers."

Kramer has spent decades studying age-related declines in [cognitive abilities](#) and the factors that sometimes slow or offset the deficits that normally occur.

The new study compared older and younger controllers with one another and with their age-matched peers who were not air traffic controllers. All of the study subjects performed a battery of [cognitive tasks](#) and simulated air traffic control tasks, which varied in difficulty.

On simple cognitive tasks, the older controllers (aged 53 to 64) were similar to the older non-controllers. Compared with their younger peers (aged 20 to 27), the older subjects were slower on simple memory or decision-making tasks that were not directly related to air traffic control. But on the tests that simulated the tasks of an [air traffic controller](#), the older and younger controllers were equally capable. (The older non-controllers had significant deficits, however.)

"Despite the fact that these old controllers are not superpeople in a cognitive sense, they still do really well on complex simulated air traffic control tasks that are representative of what they do every day," Kramer said. "They do well, one would surmise, because they've gained decades of knowledge in their profession that's allowed them to offset the costs of not having quite the memory they used to have, and certainly not being able to respond as quickly as they once could."

The study points to the distinction between "fluid intelligence" and

"crystallized intelligence," Kramer said. Fluid intelligence includes memory capacity and speed of recall; crystallized intelligence is the expertise that comes from years of attention and practice.

"Fluid intelligence declines with age, as it did in our controllers," Kramer said. "But despite that, the many years of experience, the many years of building domain-relevant knowledge in their area of expertise allows them to offset or compensate for these losses in fluid intelligence and do the job really well, just as well as the younger ones."

Source: University of Illinois at Urbana-Champaign

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