

News and Events - Air Force News

Air Force Articles

Air Force first in world to change body measurement standards for pilots

Apr. 10, 2006

By Holly Bridges

OTTAWA -- Putting the right fit before the right stuff. You might say that is the idea behind new anthropometric, or body measurement, standards now being used by the Air Force for the selection of prospective pilots.

The Canadian Forces are the first in the world to develop and implement these new, automated, aircrew anthropometric selection standards based on the specific requirements of each of our aircraft.

"This is an excellent example of how we are employing leading edge technologies to transform into a relevant, responsive and effective force for the 21st Century," said Lieutenant-General Steve Lucas, Commander of Air Command and Chief of the Air Staff. "These new procedures and standards also represent an excellent opportunity for more Canadian men and women to pursue a career as a pilot in the Canadian Forces."

In order to become a pilot in the Canadian Forces, a person has to be able to fit into a cockpit and perform all of the required piloting tasks. The previous standard for screening pilot candidates was developed more than 40 years ago. It was basically a one-size-fits all approach based on the population of pilots (all male) flying at that time.

Now, the Air Force can actually identify who can and cannot operate individual aircraft types and explain why one may or may not be accommodated. With these new tools, the Air Force will have a better idea earlier in the aircrew selection process of who's in and who's out. "This is exciting because every Air Force, including ourselves, used to select pilots based on aggregate data that was taken a long, long time ago," says Captain (N) Cyd Courchesne, CAS Senior Medical Advisor. "Now, under these new standards, we can determine if an individual is going to fit into a particular aircraft right off the bat. There are no other Air Forces in the world that have a customized anthropometric system like we now have."

Working with the Air Force, scientists at Defence Research and Development Canada in Toronto have developed a method of digitally scanning the physical dimensions of potential aircrew candidates. The cockpits of all CF aircraft fleets were assessed to accurately determine the body dimensions required to safely operate in these environments. A computer program then analyzes these sets of data to determine which aircraft fleets an aircrew candidate would be physically eligible to fly. Appropriate and timely decisions can then be made regarding the continuation of aircrew selection, training and career planning.

The process was the brainchild of DRDC defence scientist, Mr. Pierre Meunier, who describes the breakthrough, and the cooperation he received from the Air Force, as the most rewarding of his career.

"What I have observed throughout this project is the dedication to excellence and innovation displayed by all stakeholders in transitioning from one paradigm to an entirely different one. It really took excellence, innovation and diligence from all concerned to get to this point, and I am proud to have been a part of it. In my view, the



This picture shows an individual in the standard standing posture, ready to click on the measurement button in his right hand.



This picture shows the measurement console of the BoSS XXI (Body Scanning System). The operator stands in front of the console while the candidate proceeds to the measurement booth behind.

Air Force is putting in place a truly progressive and unique approach to pilot selection that will serve it well in the years to come."

Mr. Meunier first began research in engineering anthropometry more than 10 years ago. With the advent of digital cameras and improvements in computers, he was able to develop a cost-effective system that can measure people quickly and accurately. He has spent the last few years studying pilot accommodation issues, and is now putting all of this new technology to good use.

"The important thing to remember here is that the old standard was strictly based on anthropometric (body size) limits, whereas the new standard is based on an individual's ability to do the job, or in other words, Bona Fide Occupational Requirement (BFOR). If you were outside the old limits, you were out of luck, regardless of whether you could physically operate CF aircraft. Now, it's the other way around; the ability to perform the required tasks in a particular cockpit dictates what the anthropometric limits should be for that aircraft. What we've found is that with this way of viewing things, there are more men and women admissible than previously thought. A further characteristic of the new standard is that, unlike the previous one, it has the flexibility to adapt, over time, to things like cockpit modifications or retrofits, to the addition of new aircraft in the fleet, or even to a change in what is considered to be a BFOR; all of this while remaining true to the spirit of the selection process, which is to be fair and equitable."

Capt (N) Courchesne is particularly enthused about the speed and accuracy of the new standards, and the fact the process is fully automated.

"People simply sit in a box and have a machine take all the measurements that were previously taken by hand by a human. The scan is taken, the information is inputted directly into the computer, the software processes it, and in the time it takes to take a picture, the calculations are done. We will know immediately what cockpits the person fits or does not fit. The entire process takes about a minute and that's revolutionary."

It is expected that these new anthropometric procedures and standards will result in more people, particularly women, being eligible to pursue military pilot training. Recruiting centres across Canada have been made aware of the new standards and are informing potential recruits of this exciting development.

[More Articles](#)

[Share](#)

[Print](#)

[RSS Feeds](#) ([What is RSS?](#))

Date Modified: 2006-04-10