**CHALLENGE**

While the likelihood of cyber warfare continues to grow, the pipeline for recruiting and training cyber operators in both the public and private sectors is constrained by the need to identify candidates who already have rare cyber skills. An alternative, but more difficult, approach is to find and train candidates with the potential to succeed.

The United States Air Force (USAF) needs to broaden and sharpen its methods for selecting cyber warfare operators. The existing method is effective for the current situation, but is labor-intensive; it requires personal consideration from a Career Field Manager to accept or reject each candidate. To grow the career field to the size it needs to be to cope with the demands of future cyber warfare, the USAF needs new, more efficient, methods of identifying talented candidates.

**FINDINGS**

CASL and the USAF have partnered to develop the **United States Air Force Cyber Aptitude and Talent Assessment (USAF-CATA)**, a new test that can identify candidates best suited for cyber warfare operator training. The test focuses on critical thinking abilities and other foundational abilities necessary for success in cyber warfare operations.

In our first year, CASL developed and administered a prototype test battery to students starting in cyber warfare operations courses and to a comparison group of students in other IT (information technology) courses. For our second year, we will use student performance data from the test battery and from their coursework to pick the best components from the prototype battery to create a shorter beta version.

In contrast to other tests the USAF uses to predict performance, such as the USAF Cyber Test (previously known as the Information and Communications Technology Literacy Test), the USAF-CATA does not include measures of cyber knowledge. Potential USAF-CATA components include critical thinking skills that predict class and job performance, like working memory and spatial visualization, along with traits that predict operational job performance, like speed and vigilance. These components can be used in a complementary fashion with knowledge tests like the USAF Cyber Test, with personality tests like the Tailored Adaptive Personality Assessment System (TAPAS), and with general tests like the Armed Services Vocational Aptitude Battery (ASVAB).

**WHY ARE CYBER COURSES DIFFICULT?**

- Learning and retaining large amounts of technical information in a short time
- Handling a high-pressure classroom environment
- Applying classroom knowledge to unstructured problems
- Adapting to changes in configurations or procedures


---

**DO 0080: CYBER APTITUDE & TALENT ASSESSMENT (CATA) FOR THE USAF**

**CASL Principal Investigator**
Susan G. Campbell, PhD, Assistant Research Scientist
University of Maryland Center for Advanced Study of Language
(301) 226-8858 | scampbell@casl.umd.edu | www.casl.umd.edu

**CASL RESEARCH FACT SHEET | AUGUST 2016**

Identifying potential candidates for the U.S. Air Force

CASL's first year developing the United States Air Force Cyber Aptitude and Talent Assessment (USAF-CATA) revealed that Critical Thinking skills are a major component for successful cyber candidates.

---

**CASL RESEARCH FACT SHEET | AUGUST 2016**

Assessing aptitude for cyber operations

Identifying potential candidates for the U.S. Air Force

CASL's first year developing the United States Air Force Cyber Aptitude and Talent Assessment (USAF-CATA) revealed that Critical Thinking skills are a major component for successful cyber candidates.