



# Next Generation Testing: Overview and Update

Mary Pommerich  
*Defense Testing and Assessment Center*

DAC Meeting  
December 15, 2022

# PURPOSE AND OVERVIEW

---

- Provide background and update on history, status, and plans for the next generation of ASVAB and special tests administered on the ASVAB platform<sup>†</sup> in the military's Enlistment Testing Program (ETP).
  - Give overview and status of **current efforts** (Mary Pommerich).
  - Present details on some **ASVAB evaluation** efforts.
    - Discuss ASVAB and AFQT **validity framework** efforts (Deirdre Knapp).
    - Discuss **training relevance survey** effort (Scott Oppler).
    - Discuss **focus group** effort with ASVAB stakeholders (Kimberly Adams).

---

<sup>†</sup>ASVAB platform = The test delivery modality for the ASVAB and various special tests administered in the military's Enlistment Testing Program (ETP).

# BACKGROUND

---

- In 2005–2006, the ASVAB underwent a systematic review, with testing experts making recommendations for improvements and enhancements to the military's Enlistment Testing Program (ETP).

*The panel was motivated by a difficult recruiting environment and the belief held by some that the ASVAB was outdated and in need of an overhaul.*

- The Manpower Accession Policy Working Group (MAPWG) condensed and prioritized the Panel's recommendations.

# PRIORITIZED RECOMMENDATIONS FROM 2005–2006

---

- Implement CAT at MET sites [1]
  - Consider classification accuracy when evaluating content changes [1]
  - Re-evaluate the contents of the ASVAB [1]
  - Examine validity regularly [5]
  - Increase time for seeding new items and measures [5]
  - Include validated non-cognitive measures in job classification composites [7]
  - Include nonverbal reasoning test on ASVAB [8]
  - Develop standardized data banks on Service member performance [8]
  - Relax the requirement for criterion validity of new measures [8]
  - Implement content controls in CAT [8]
  - Continue utility research on non-cognitive measures [12]
  - Develop IT/communications technology test [13]
  - Review test specifications on a regular basis [13]
  - Evaluate WK and PC for ESL examinees [13]
  - Consider the multidimensionality of the ASVAB [13]
  - Evaluate Spanish verbal test for ESL examinees [17]
  - Use automatic item generation [17]
- All recommendations have been investigated and evaluated, with changes implemented where warranted. Some research and development efforts are still underway (i.e., Complex Reasoning).

# BACKGROUND

---

- Although **many changes** have been introduced in the Enlistment Testing Program since the 2005–2006 review, the contents of the *ASVAB itself* have not yet changed. Prior discussions of possible changes have stalled due to:
  - **Lack of consensus** on the **philosophy of the ASVAB**.
  - **Logistical difficulties** associated with making changes (such as dropping subtests) that would impact existing composites and systems set up to operate on those composites.
  - Concerns about **insufficient resources** to accommodate a revised ASVAB that could require more testing time than the current battery (if new tests of interest were added to the current battery).

*In 2022, we once again find ourselves in a difficult recruiting environment, with some holding the belief that the ASVAB is outdated and in need of an overhaul.*

# NEXT GENERATION TESTING EFFORT

---

- DTAC hopes to work through some of these sticking points via *Next Generation Testing* efforts.
- **Key steps** are envisioned:
  1. Develop/refine and evaluate special tests of interest.
  2. Evaluate the tests in the ASVAB.
  3. Collect focus group information and use to develop a shared vision for *Next Generation Testing*.
  4. Consolidate and synthesize information gathered and use to make recommendations about individual tests.
  5. Form and convene an ASVAB Stakeholder Advisory Committee to help guide decision-making about changes to introduce in *Next Generation Testing*.

# SOME KEY OBJECTIVES FOR A REVISED ASVAB/ETP

- Improve **selection** into the military and **classification** into military occupational specialties.
- Maintain **testing standards** and **current value** while introducing **improvements** or **enhancements**, where needed or practical.
- Introduce changes that best meet **diverse stakeholder needs**.
  - **Compromise** will likely be needed as the different stakeholders have **widely varying** needs and priorities.

# IT'S NOT *JUST* ABOUT THE ASVAB (OR ETP)

---

- *Next Generation Testing* efforts are focusing on the *ASVAB*, as well as the *special tests*\* that are administered alongside the ASVAB in the ETP.
  - ASVAB and *special tests* are administered jointly on the ASVAB platform and share a common look.
  - Special test scores are used in addition to ASVAB scores for classification purposes.
- Due to the limited time for total testing, it is necessary to consider *all tests* to be administered in conjunction.
- Also, any changes to the *ETP* must be considered in relation to their *potential impact* on the *Career Exploration Program*.

\*Service proponents are responsible for development and maintenance of special tests.



# NEXT GENERATION TESTING – PROGRESS REPORT

---

- Continue efforts to develop/refine special tests of interest (TAPAS, Cyber Test, Mental Counters, Complex Reasoning).
  - ☑ *Ongoing.*
- Continue efforts to evaluate tests currently in the ASVAB.
  - ☑ *Ongoing.*
- Apply an argument-based approach to validation of the ASVAB and AFQT.
  - ☑ *Ongoing.*
- Conduct focus groups with stakeholders and document findings.
  - ☑ *In Progress.*

# NEXT GENERATION TESTING – PROGRESS REPORT

---

- Develop a shared vision that defines the purpose and general makeup of the ASVAB and ETP for *Next Generation Testing*.
  - 📁 *Initiated. Revisiting question of philosophy of the ASVAB as a first step.*
- Synthesize evaluations of ASVAB and special tests and make recommendations on ASVAB content for *Next Generation Testing*.
  - 📁 *Initiated at a high level. Need to determine an appropriate methodological approach to consolidating evaluation findings.*
- Form and convene an ASVAB Stakeholder Advisory Committee to facilitate decision-making.
  - 🕒 *Potential future effort.*

# SPECIAL TESTS OF INTEREST

# SPECIAL TESTS OF INTEREST – STATUS

- The Services/DTAC are continuing to develop and/or fine-tune key special tests of interest:

## **Mental Counters**

Improvements to the instructions and practice items will be introduced to eliminate a persistent floor effect in the applicant population.

## **Cyber Test**

A CAT version will be introduced to better target item difficulty to applicant ability.

## **Complex Reasoning**

A non-verbal test of fluid intelligence is under development with items modeled after Raven's Progressive Matrices items.

## **TAPAS**

Efforts are underway to develop a joint-Service version of TAPAS, to utilize TAPAS for the assessment of military compatibility/suitability, and to maximize test efficacy.

Some Services have an interest in **Coding Speed**, a speeded test that was dropped from the ASVAB in 2003.

# ASVAB EVALUATION

# ASVAB EVALUATION MOTIVATION

---

- **Total testing time** will be a key consideration if there is a desire to incorporate additional tests into the ASVAB, due to **resource constraints** impacting the ability to accommodate increases in testing time.

*A comprehensive assessment of the tests currently in the battery gives insight into their utility, quality, and potential modifiability.*

- Potential changes to the ASVAB to accommodate new tests in the battery could include any combination of the following:

Dropping existing tests

Combining existing tests

Shortening existing tests

Merging new tests with existing tests

# ASVAB EVALUATION STEPS

---

- DTAC has an extensive effort underway to evaluate the current ASVAB tests in order to determine their desirability/expendability, including:
  - ❑ Reviewing the history of current ASVAB tests and why they were originally included in the battery.
  - ❑ Completing psychometric checklists and evaluating the psychometric value/limitations for each test.
  - ❑ Evaluating the usefulness/appropriateness of existing tests with the current applicant population.
  - ❑ Evaluating relevance of ASVAB content to success in technical training.
  - ❑ Evaluating the item/form development costs.
  - ❑ Evaluating the ease/difficulty of developing good quality items.
  - ❑ Evaluating the durability of test content.
  - ❑ Evaluating the appropriateness/efficiency of content coverage across tests.
  - ❑ Evaluating the vulnerability of content to compromise and other unwanted effects.
  - ❑ Evaluating the efficiency of each test.
  - ❑ Evaluating the psychometric impact of shortening or combining various tests.
  - ❑ Evaluating the psychometric impact of dropping various tests.

# ASVAB EVALUATION SUMMARIES

---

## Goals:

- Identify a way to concisely summarize results over all steps.
- Identify a way to aggregate findings and compute an overall rating for each test.

## • Possible approaches DTAC has considered:

- **Delphi Method:** A decision-making approach that engages a panel of experts in providing their opinions on matters of importance for use in determining what could or should be with respect to policy, goal setting, forecasting future outcomes, etc.
- **Cross-Impact Analysis:** A tool used to evaluate the probability of future events or states; emphasizes the interactions between possible future states, changes, trends, or decisions.
- **Utility Analysis:** A decision-making tool that assigns importance or monetary values to various criteria to evaluate the institutional gain or loss anticipated from various possible courses of action. Decisions are made to maximize benefits while reducing associated costs for those benefits.



# DAC GUIDANCE

---

- 👉 Any thoughts on a synthesis approach that will allow us to aggregate results across the widely disparate quantitative and qualitative information that is being collected and rate the quality/expendability of tests?
- 👉 Any thoughts on how to move forward with identifying possible changes if there is lack of consensus on the philosophy of the ASVAB?
- 👉 Any thoughts on how to move forward with implementing changes to the ASVAB contents when stakeholders have widely varying needs and interests?