



Behavioral Markers to Assess During Selection for Active and Non-Active Astronauts

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I have no financial relationships to disclose.

I will not discuss off-label use and/or investigational use in my presentation

Objectives

- Provide Competency Working Group goals & rationale
- Define terms
- Review our process
- Share results
- Discuss next steps

Goals & Rationale

- The Competency Working Group sought to:
 - Identify behavioral markers that must be assessed during selection of non-active astronauts.
 - Revisit and update previous behavioral markers designated as required to assess during selection for active astronauts.
- The working group included members of NASA, ESA, CSA, and JAXA with vast operational experience and knowledge of the risk factors present during spaceflight that can disrupt individual and team functioning.

Rationale for this Work

- Selection is one of the most important countermeasures for mitigating risk to individual and team health and performance.
- Our work should inform future programs for selecting crewmembers for short- and long-duration spaceflight among active and non-active crews.

Defining Terms

- **Active Crewmember:** Performs hazardous tasks or tasks that include use of high criticality hardware on the NASA vehicle (piloting/docking, EVAs, robotics). *May be government/career or private astronaut.*
- **Not Active Crewmember:** No hazardous tasks or tasks that include use of high criticality hardware on the NASA vehicle. May perform research activities.

Process

- Each agency rated previously defined spaceflight required behavioral markers. Using the scale below, representatives from each agency independently rated whether each behavioral marker needs to be assessed during selection.

--	= Not Required at Selection
*	= Desired at Selection
**	= Required at Selection

- Competencies for non-active crew were rated, and previous ISS competency ratings for active crew were updated.
 - Non-active crew ratings were provided for both short duration (<14 days) and for long duration (>14 days) missions as some competency behaviors appear to become of greater importance with longer duration missions.
 - Active crew members should be selected with long duration missions in mind.
- Agency ratings for non-active/active and short-duration/long-duration requirements were compared and discussed until consensus was reached.

*Note: GTGC Representatives were invited to each meeting and included on all emails but chose not to participate.

Overall Summary of Findings

- Important for all at any duration:
 - Stress Management
 - Teamwork/Small Group Living
 - Interpersonal and SGL become even more important with time
 - Cross-Cultural Skills
 - Followership
 - Non-operational decision-making

- Becomes more important with time:
 - Situational Awareness
 - Decision-Making
 - Conflict Management

- More important for operators (active crew):
 - Decision-making is more important for operator than a non-operator
 - Leadership dependent upon whether crew member is an operator or not

Next Steps

- Ratings will be used to compile selection standards for active and non-active astronauts

- Importantly, training should be provided for behavioral markers as well (especially for those that were not assessed at selection)



Questions?