International Space Station Human Behavior & Performance Competency Model

Volume I

Mission Operations Directorate
ITCB HBP Training Working Group

March 2008
Since its founding, NASA has been dedicated to the advancement of aeronautics and space science. The NASA Scientific and Technical Information (STI) Program Office plays a key part in helping NASA maintain this important role.

The NASA STI Program Office is operated by Langley Research Center, the lead center for NASA’s scientific and technical information. The NASA STI Program Office provides access to the NASA STI Database, the largest collection of aeronautical and space science STI in the world. The Program Office is also NASA’s institutional mechanism for disseminating the results of its research and development activities. These results are published by NASA in the NASA STI Report Series, which includes the following report types:

- **TECHNICAL PUBLICATION.** Reports of completed research or a major significant phase of research that present the results of NASA programs and include extensive data or theoretical analysis. Includes compilations of significant scientific and technical data and information deemed to be of continuing reference value. NASA’s counterpart of peer-reviewed formal professional papers but has less stringent limitations on manuscript length and extent of graphic presentations.

- **TECHNICAL MEMORANDUM.** Scientific and technical findings that are preliminary or of specialized interest, e.g., quick release reports, working papers, and bibliographies that contain minimal annotation. Does not contain extensive analysis.

- **CONTRACTOR REPORT.** Scientific and technical findings by NASA-sponsored contractors and grantees.

- **CONFERENCE PUBLICATION.** Collected papers from scientific and technical conferences, symposia, seminars, or other meetings sponsored or cosponsored by NASA.

- **SPECIAL PUBLICATION.** Scientific, technical, or historical information from NASA programs, projects, and mission, often concerned with subjects having substantial public interest.

- **TECHNICAL TRANSLATION.** English-language translations of foreign scientific and technical material pertinent to NASA’s mission.

Specialized services that complement the STI Program Office’s diverse offerings include creating custom thesauri, building customized databases, organizing and publishing research results . . . even providing videos.

For more information about the NASA STI Program Office, see the following:


- E-mail your question via the internet to help@sti.nasa.gov

- Fax your question to the NASA Access Help Desk at (301) 621-0134

- Telephone the NASA Access Help Desk at (301) 621-0390

- Write to:
  NASA Access Help Desk
  NASA Center for AeroSpace Information
  7115 Standard
  Hanover, MD 21076-1320
International Space Station Human Behavior & Performance Competency Model

Volume I

Mission Operations Directorate
ITCB HBP Training Working Group

March 2008
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>iii</td>
</tr>
<tr>
<td>1.0 INTRODUCTION</td>
<td>1-1</td>
</tr>
<tr>
<td>1.1 PURPOSE</td>
<td>1-1</td>
</tr>
<tr>
<td>1.2 SCOPE</td>
<td>1-1</td>
</tr>
<tr>
<td>1.3 SUPPORTING DOCUMENTS AND INFORMATION</td>
<td>1-1</td>
</tr>
<tr>
<td>2.0 HBP CATEGORIES</td>
<td>2-2</td>
</tr>
<tr>
<td>2.1 SELF-CARE SELF MANAGEMENT</td>
<td>2-2</td>
</tr>
<tr>
<td>2.2 COMMUNICATION</td>
<td>2-3</td>
</tr>
<tr>
<td>2.3 CROSS CULTURAL</td>
<td>2-4</td>
</tr>
<tr>
<td>2.4 TEAMWORK AND GROUP LIVING</td>
<td>2-5</td>
</tr>
<tr>
<td>2.5 LEADERSHIP</td>
<td>2-6</td>
</tr>
<tr>
<td>2.6 CONFLICT MANAGEMENT</td>
<td>2-7</td>
</tr>
<tr>
<td>2.7 SITUATIONAL AWARENESS</td>
<td>2-8</td>
</tr>
<tr>
<td>2.8 DECISION MAKING AND PROBLEM SOLVING</td>
<td>2-9</td>
</tr>
</tbody>
</table>

APPENDIX A 2-10

COMPETENCY MODEL BACKGROUND 2-10

APPENDIX B ACRONYMS USED IN THIS DOCUMENT 2-12

APPENDIX C GLOSSARY 2-13
Preface

This document was developed in response to action items assigned by the Multilateral Crew Operations Panel to the International Training Control Board (ITCB) and Multilateral Medical Operations Panel Spaceflight Human Behavior and Performance Working Group. The Human Behavior and Performance (HBP) competencies presented in this document were developed by the ITCB Human Behavior and Performance Training (HBPT) Working Group (WG) based on the work of the ITCB supported DACUM (Developing A CurriculUM) Group. The membership of the ITCB HBPT WG consists of representatives from all the international partner agencies, including astronauts/cosmonauts, HBP specialists, and training specialists.
1.0 INTRODUCTION

1.1 PURPOSE

This document defines Human Behavior and Performance (HBP) competencies that are recommended to be included as requirements to participate in international long duration missions. They were developed in response to the Multilateral Crew Operations Panel (MMOP) request to develop HBP training requirements for the International Space Station (ISS). The competency model presented here was developed by the ITCB HBPT WG and forms the basis for determining the HBP training curriculum for long duration crewmembers.

1.2 SCOPE

This document lists specific HBP competencies and behaviors required of astronauts/cosmonauts who participate in ISS expedition and other international long-duration missions. Please note that this model does not encompass all competencies required. For example, outside the scope of this document are cognitive skills and abilities, including but not limited to concentration, memorization, perception, imagination, and thinking. It is assumed that these skills, which are crucial in terms of human behavior and performance, are considered during selection phase since such professionally significant qualities of the operator should be taken into consideration in order to ensure sufficient baseline levels that can be further improved during general astronaut training. Also, technical competencies, even though critical for crewmembers, are beyond the scope of this document. It should also be noted that the competencies in this model (and subsequent objectives) are not intended to limit the internal activities or training programs of any international partner.

1.3 SUPPORTING DOCUMENTS AND INFORMATION

This document describes an organized competency model, which evolved from the more general requirements outlined in the document, “HBP Competencies and Behaviors”\(^1\). The history of the development of both documents is provided in Appendix A.

For those interested in the application of this competency model in training or evaluation, please refer to “Volume II, Human Behavior and Performance Competency Model Guide” (TM-2008(Schmidt 2?)).
### 2.0 HBP CATEGORIES

#### 2.1 SELF-CARE SELF MANAGEMENT

<table>
<thead>
<tr>
<th>Competency</th>
<th>REF</th>
<th>Behavioural Marker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refine accuracy of self image</td>
<td>SCSM1</td>
<td>Identifies personal tendencies and their influence on own behaviour.</td>
</tr>
<tr>
<td></td>
<td>SCSM2</td>
<td>Identifies factors for personal successes or failures</td>
</tr>
<tr>
<td></td>
<td>SCSM3</td>
<td>Seeks formal and informal feedback to understand impact of own behaviour on others</td>
</tr>
<tr>
<td></td>
<td>SCSM4</td>
<td>Assesses own skills knowledge and abilities against task requirements</td>
</tr>
<tr>
<td>Manage stress</td>
<td>SCSM5</td>
<td>Identifies symptoms and causes of personal stress</td>
</tr>
<tr>
<td></td>
<td>SCSM6</td>
<td>Takes action to prevent and mitigate stress, negative mood, or low morale</td>
</tr>
<tr>
<td></td>
<td>SCSM7</td>
<td>Uses calm and flexible approach in dealing with unfamiliar situations</td>
</tr>
<tr>
<td>Care for oneself</td>
<td>SCSM8</td>
<td>Uses mistakes as learning opportunities</td>
</tr>
<tr>
<td></td>
<td>SCSM9</td>
<td>Maintains social relationships</td>
</tr>
<tr>
<td></td>
<td>SCSM10</td>
<td>Maintains personal goals for satisfaction and motivation and to maximize performance</td>
</tr>
<tr>
<td></td>
<td>SCSM11</td>
<td>Maintains balance of work, personal time and rest</td>
</tr>
<tr>
<td>Maintain efficiency</td>
<td>SCSM12</td>
<td>Sets challenging and attainable goals</td>
</tr>
<tr>
<td></td>
<td>SCSM13</td>
<td>Uses time efficiently</td>
</tr>
<tr>
<td></td>
<td>SCSM14</td>
<td>Keeps items organized</td>
</tr>
</tbody>
</table>
### 2.2 COMMUNICATION

<table>
<thead>
<tr>
<th>Competency</th>
<th>REF</th>
<th>Behavioural Marker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimize communication</td>
<td>COM1</td>
<td>Communicates information clearly and concisely</td>
</tr>
<tr>
<td></td>
<td>COM2</td>
<td>Shares information</td>
</tr>
<tr>
<td></td>
<td>COM3</td>
<td>Communicates intentions before taking action</td>
</tr>
<tr>
<td></td>
<td>COM4</td>
<td>Communicates task status and completion</td>
</tr>
<tr>
<td></td>
<td>COM5</td>
<td>Provides constructive feedback</td>
</tr>
<tr>
<td></td>
<td>COM6</td>
<td>Adjusts time and/or style of communication to fit the situation</td>
</tr>
<tr>
<td></td>
<td>COM7</td>
<td>Communicates concerns; persists until acknowledged</td>
</tr>
<tr>
<td></td>
<td>COM8</td>
<td>Establishes atmosphere for open and constructive communication</td>
</tr>
<tr>
<td></td>
<td>COM9</td>
<td>Briefs and debriefs behavioral and technical issues with team members</td>
</tr>
<tr>
<td>Ensure Understanding</td>
<td>COM10</td>
<td>Listens “actively”</td>
</tr>
<tr>
<td></td>
<td>COM11</td>
<td>Addresses barriers to communication</td>
</tr>
<tr>
<td></td>
<td>COM12</td>
<td>Seeks answers in proactive manner</td>
</tr>
<tr>
<td></td>
<td>COM13</td>
<td>Verifies information</td>
</tr>
<tr>
<td></td>
<td>COM14</td>
<td>Acknowledges confusion or misunderstanding</td>
</tr>
<tr>
<td></td>
<td>COM15</td>
<td>Resolves discrepancies, confusions, and misunderstandings</td>
</tr>
<tr>
<td>Competency</td>
<td>REF</td>
<td>Behavioural Marker</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Demonstrate respect towards other cultures</td>
<td>CC1</td>
<td>Demonstrates respect and appreciation for team members’ culture[s] and viewpoints</td>
</tr>
<tr>
<td>[national, organisational, professional]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC2</td>
<td></td>
<td>Respects differences in gender role expectations, behaviours, and attitudes</td>
</tr>
<tr>
<td>Understand culture and cultural differences</td>
<td>CC3</td>
<td>Uses understanding of cultural factors and circumstances to interpret team members’</td>
</tr>
<tr>
<td>[national, organizational and professional]</td>
<td></td>
<td>behaviours</td>
</tr>
<tr>
<td>CC4</td>
<td></td>
<td>Acknowledges the impact of cultural dominance on crew interaction</td>
</tr>
<tr>
<td>CC5</td>
<td></td>
<td>Mitigates the impact of cultural stereotypes and prejudices on group interaction</td>
</tr>
<tr>
<td>Build and maintain social and working</td>
<td>CC6</td>
<td>Demonstrates tolerance of cultural differences and ambiguities</td>
</tr>
<tr>
<td>relationships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC7</td>
<td></td>
<td>Develops strategies to clarify ambiguities created by own behavior</td>
</tr>
<tr>
<td>Intercultural communication and language</td>
<td>CC8</td>
<td>Communicates respectfully with people from different cultural and linguistic</td>
</tr>
<tr>
<td>skills</td>
<td></td>
<td>backgrounds</td>
</tr>
<tr>
<td>CC9</td>
<td></td>
<td>Makes an effort to learn and use the languages of colleagues</td>
</tr>
<tr>
<td>Commitment to multicultural work</td>
<td>CC10</td>
<td>Puts a common “space-faring culture” ahead of one’s own national organizational and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>professional cultures</td>
</tr>
</tbody>
</table>
## 2.4 TEAMWORK AND GROUP LIVING

<table>
<thead>
<tr>
<th>Competency</th>
<th>REF</th>
<th>Behavioural Marker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active team participation</td>
<td>TW1</td>
<td>Acts cooperatively rather than competitively</td>
</tr>
<tr>
<td></td>
<td>TW2</td>
<td>Takes responsibility for own actions and mistakes</td>
</tr>
<tr>
<td></td>
<td>TW3</td>
<td>Puts common goals above individual needs</td>
</tr>
<tr>
<td></td>
<td>TW4</td>
<td>Works with teammates to ensure safety and efficiency</td>
</tr>
<tr>
<td></td>
<td>TW5</td>
<td>Respects team member’s roles, responsibilities, and task allocation</td>
</tr>
<tr>
<td>Interpersonal relationships</td>
<td>TW6</td>
<td>Demonstrates patience, respect and appreciation for crewmembers</td>
</tr>
<tr>
<td></td>
<td>TW7</td>
<td>Provides emotional support to crewmembers</td>
</tr>
<tr>
<td></td>
<td>TW8</td>
<td>Encourages participation in team activities</td>
</tr>
<tr>
<td></td>
<td>TW9</td>
<td>Develops positive relationships with team members</td>
</tr>
<tr>
<td>Group living</td>
<td>TW10</td>
<td>Adapts living and working habits to improve team cohesion</td>
</tr>
<tr>
<td></td>
<td>TW11</td>
<td>Volunteers for routine and unpleasant tasks</td>
</tr>
<tr>
<td></td>
<td>TW12</td>
<td>Offers and provides assistance if accepted</td>
</tr>
<tr>
<td></td>
<td>TW13</td>
<td>Balances own needs with those of crewmembers</td>
</tr>
<tr>
<td></td>
<td>TW14</td>
<td>Shares attention and credit for achievements with teammates</td>
</tr>
<tr>
<td>Competency</td>
<td>REF</td>
<td>Behavioural Marker</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-----</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Execution of designated leader's authority</td>
<td></td>
<td>LD1 Accepts leadership responsibilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD2 Assigns tasks according to capabilities and individual preferences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD3 Assigns tasks with clearly defined goals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD4 Adapts leadership styles to situation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD5 Responds to information, suggestions, and concerns of team members</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD6 Maintains team cohesion in adverse and uncertain circumstances</td>
</tr>
<tr>
<td>Mentoring skills</td>
<td></td>
<td>LD7 Provides direction, information, feedback, and encouragement and coaching as needed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD8 Leads by example</td>
</tr>
<tr>
<td>Followership</td>
<td></td>
<td>LD9 Supports leader</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD10 Reacts promptly to situations requiring immediate response</td>
</tr>
<tr>
<td>Workload Management</td>
<td></td>
<td>LD11 Plans and prioritizes tasks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD12 Adapts plans according to progress and changing conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LD13 Ensures team members have the appropriate tools and authorization to complete tasks</td>
</tr>
</tbody>
</table>
## 2.6 CONFLICT MANAGEMENT

<table>
<thead>
<tr>
<th>Competency</th>
<th>REF</th>
<th>Behavioural Marker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conflict prevention</td>
<td>CM1</td>
<td>Addresses potential sources for conflict</td>
</tr>
<tr>
<td></td>
<td>CM2</td>
<td>Prevents disagreements from influencing personal and professional relationships</td>
</tr>
<tr>
<td>Conflict resolution</td>
<td>CM3</td>
<td>Reviews causal factors of a conflict with all involved team members</td>
</tr>
<tr>
<td></td>
<td>CM4</td>
<td>Adapts conflict management strategies to resolve disagreements</td>
</tr>
<tr>
<td></td>
<td>CM5</td>
<td>Exchanges views and positions</td>
</tr>
<tr>
<td></td>
<td>CM6</td>
<td>Seeks resolution</td>
</tr>
<tr>
<td></td>
<td>CM7</td>
<td>Keeps calm in interpersonal conflicts</td>
</tr>
<tr>
<td></td>
<td>CM8</td>
<td>Focuses on what is wrong rather than who is wrong</td>
</tr>
<tr>
<td></td>
<td>CM9</td>
<td>Mediates between conflicting parties</td>
</tr>
<tr>
<td></td>
<td>CM10</td>
<td>Defines agreement and positive closure</td>
</tr>
</tbody>
</table>
## 2.7 SITUATIONAL AWARENESS

<table>
<thead>
<tr>
<th>Competency</th>
<th>REF</th>
<th>Behavioural Marker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance of an accurate perception of the situation</td>
<td>SA1</td>
<td>Monitors people, systems, and environment</td>
</tr>
<tr>
<td></td>
<td>SA2</td>
<td>Monitors self and others for signs of stress, fatigue, complacency, and task saturation</td>
</tr>
<tr>
<td></td>
<td>SA3</td>
<td>Reduces distractions while performing operational tasks</td>
</tr>
<tr>
<td></td>
<td>SA4</td>
<td>Maintains awareness of the environment while focusing on a task or problem</td>
</tr>
<tr>
<td></td>
<td>SA5</td>
<td>Maintains the required level of vigilance for low and high workloads</td>
</tr>
<tr>
<td></td>
<td>SA6</td>
<td>Uses the two-person approach to execution of critical tasks and procedures</td>
</tr>
<tr>
<td>Processing of information</td>
<td>SA7</td>
<td>Analyzes information to determine operational relevance</td>
</tr>
<tr>
<td></td>
<td>SA8</td>
<td>Assesses impacts of actions, plans, and decisions on others</td>
</tr>
<tr>
<td></td>
<td>SA9</td>
<td>Anticipates potential problems</td>
</tr>
<tr>
<td></td>
<td>SA10</td>
<td>Verifies team readiness to meet operational demands</td>
</tr>
<tr>
<td></td>
<td>SA11</td>
<td>Communicates when situations “feel” wrong</td>
</tr>
<tr>
<td></td>
<td>SA12</td>
<td>Identifies and resolves discrepancies between conflicting data or information</td>
</tr>
</tbody>
</table>
### 2.8 DECISION MAKING AND PROBLEM SOLVING

<table>
<thead>
<tr>
<th>Competency</th>
<th>REF</th>
<th>Behavioural Marker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem solving and decision making methods</td>
<td>DM1</td>
<td>Adopts a problem solving method to meet situational demands</td>
</tr>
<tr>
<td>Preparation of decision</td>
<td>DM2</td>
<td>Involves team members in the process as applicable</td>
</tr>
<tr>
<td></td>
<td>DM3</td>
<td>Assembles Facts</td>
</tr>
<tr>
<td></td>
<td>DM4</td>
<td>Considers different Options</td>
</tr>
<tr>
<td></td>
<td>DM5</td>
<td>Evaluates Risks and benefits</td>
</tr>
<tr>
<td></td>
<td>DM6</td>
<td>Decides on an option</td>
</tr>
<tr>
<td>Execution of decision</td>
<td>DM7</td>
<td>Executes decision</td>
</tr>
<tr>
<td></td>
<td>DM8</td>
<td>Checks results of decision, and if necessary reapplies process</td>
</tr>
</tbody>
</table>

Crewmember = onboard crew

Team member = crewmember or ground personnel
APPENDIX A

COMPETENCY MODEL BACKGROUND

In July 2004, the Multilateral Crew Operations Panel (MCOP) asked all the international partners to assign representatives among their astronauts/cosmonauts, HBP specialists and training specialists to develop HBP training requirements for long duration ISS missions. Specifically the action items were:

1. To establish a set of requirements (HBP Competencies).

2. Integrate and translate the requirements into skills, knowledge, and attitudes; identify suitable training environments, contents, and methods; and, evaluate all of the existing HBP training against these comprehensive requirements.

These requirements were to help ensure that crewmembers possess the intra- and interpersonal skills that are critical for success on long-duration missions.

The overall goal of training on the HBP competencies was to:

- Increase awareness of the impact of HBP skills on space missions (and preparation for the mission).

- Develop HBP strategies and skills contributing to success and well-being during long-duration space flight.

DACUM

The initial HBP competency development was performed by the ITCB sponsored DACUM (Developing A CurriculUM) Group. The membership of this group consisted of astronauts/cosmonauts, HBP specialists, and training specialists form all the ISS Partner Agencies.

The primary purpose of the DACUM meetings was to establish a set of requirements for professional astronauts and cosmonauts living and working during long-duration missions (i.e., MCOP action “1” listed above).

The DACUM Group completed their work in February 2006, producing a document identifying 8 skill categories and corresponding competencies and behaviors that apply to all long-duration missions. The work completed by the DACUM working group is documented in “HBP Competencies and Behaviors”\(^1\). The content of the document JSC-63372\(^1\) is the basis for the present document.

HBPT WG
In May 2006, the ITCB established a HBPT WG to continue the work of the DACUM Group. This WG was to complete the work assigned by the MCOP (especially the MCOP action item number two as listed above), with the goal of developing an international HBP training curriculum based on the requirements described in the document “Human Behavior and Performance Competencies and Behaviors” produced by the DACUM group.

The first task of the HBPT WG was to further develop the competencies and behaviors described by the DACUM group into an organized competency model. This task was completed and the competency model is outlined in this document. In addition, the HBPT WG developed an accompanying “Volume II, Human Behavior and Performance Competency Model Guide” that provides behavioral examples, details, and cognitive (knowledge) and affective (attitudes) teaching points to aid in future applications of the model.

**HBPT WG Membership**

The HBPT WG consists of participants from all the international partner agencies, and represents astronauts/cosmonauts, Human Behavior and Performance (HBP) specialists, and training specialists.
# APPENDIX B
## ACRONYMS USED IN THIS DOCUMENT

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC</td>
<td>Cross-Cultural</td>
</tr>
<tr>
<td>CM</td>
<td>Conflict Management</td>
</tr>
<tr>
<td>COM</td>
<td>Communication</td>
</tr>
<tr>
<td>DACUM</td>
<td>Developing A Curriculum</td>
</tr>
<tr>
<td>DM</td>
<td>Decision Making</td>
</tr>
<tr>
<td>HBP</td>
<td>Human Behavior and Performance</td>
</tr>
<tr>
<td>HBPT WG</td>
<td>Human Behavior and Performance Training Working Group</td>
</tr>
<tr>
<td>ISS</td>
<td>International Space Station</td>
</tr>
<tr>
<td>ITCB</td>
<td>International Training and Control Board</td>
</tr>
<tr>
<td>LD</td>
<td>Leadership</td>
</tr>
<tr>
<td>MCOP</td>
<td>Multilateral Crew Operations Panel</td>
</tr>
<tr>
<td>MMOP</td>
<td>Multilateral Medical Operations Panel</td>
</tr>
<tr>
<td>SA</td>
<td>Situational Awareness</td>
</tr>
<tr>
<td>SCSM</td>
<td>Self-care Self-Management</td>
</tr>
<tr>
<td>SHBP WG</td>
<td>Spaceflight Human Behavior and Performance Working Group</td>
</tr>
<tr>
<td>TW</td>
<td>Team Work</td>
</tr>
</tbody>
</table>
### APPENDIX C
### GLOSSARY

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Listening</td>
<td>Giving undivided attention to a speaker, using verbal and nonverbal techniques to ensure an accurate understanding of the speaker’s message.</td>
</tr>
<tr>
<td>Assumption</td>
<td>Something taken for granted or accepted as true without proof; a supposition.</td>
</tr>
<tr>
<td>Attitude</td>
<td>A complex mental state involving values, beliefs, and feelings, which predisposes an individual to act in a certain way.</td>
</tr>
<tr>
<td>Barriers to Communication</td>
<td>Anything that prevents information, thoughts, messages, and/or ideas from exchanging among people. These obstacles can be environmental (e.g., background noise, danger, etc.), language differences, lack of active listening, and other factors.</td>
</tr>
<tr>
<td>Behavioral Marker</td>
<td>Observable, non-technical behaviors that contribute to performance within a work environment. Usually structured into a set of categories that contain sub-components, called competencies.</td>
</tr>
<tr>
<td>Category</td>
<td>A group of competencies.</td>
</tr>
<tr>
<td>Coaching</td>
<td>Improving another person’s performance through technical direction and motivation.</td>
</tr>
<tr>
<td>Competency</td>
<td>A set of behavioral markers and the ability to apply them to new situations and environments within the context of human space flight.</td>
</tr>
<tr>
<td>Complacency</td>
<td>A feeling of satisfaction with the status quo; generally associated with a lack of diligence and lack of motivation to take action.</td>
</tr>
<tr>
<td>Constructive Feedback</td>
<td>Information about the result of an action or process that points out strengths and weaknesses, and suggests improvements in a helpful and tactful manner.</td>
</tr>
<tr>
<td>Culture</td>
<td>Behavioral patterns, expectations, and beliefs (e.g., religious, political) that are characteristic of a nation, organization, profession, or individual group.</td>
</tr>
<tr>
<td>DACUM</td>
<td>Developing A CurriculUM (DACUM) is a process used to determine the training requirements and lesson flow for a given job. The process involves an analysis of duties, tasks, skills, knowledge, and attitudes required for effective job performance.</td>
</tr>
<tr>
<td>Designated Authority</td>
<td>The power to enforce policies, to make decisions, to command, or to judge.</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Followership</td>
<td>The act or condition of following a leader.</td>
</tr>
<tr>
<td>FOR-DEC Method</td>
<td>An acronym for a decision-making process containing the following steps: 1 – Assembles <strong>F</strong>acts; 2 – Considers different <strong>O</strong>ptions; 3 – Evaluates <strong>R</strong>isks and benefits; 4 – <strong>D</strong>ecides on an option; 5 – <strong>E</strong>xecutes decision; 6 – <strong>C</strong>hecks results of decision.</td>
</tr>
<tr>
<td>Gender Role Expectation</td>
<td>A term representing a set of behavioral expectations that accompany a given gender status in a social group or system.</td>
</tr>
<tr>
<td>Human Behavior and Performance</td>
<td>Non-technical factors and issues that impact individual’s ability to perform a variety of tasks effectively. They include both interpersonal (e.g., teamwork, communication) and intrapersonal factors (e.g., motivation, stress).</td>
</tr>
<tr>
<td>Human Behavior and Performance Specialist</td>
<td>Professionals with expertise in the field of human behavior and performance; e.g., psychologists, psychiatrists, anthropologists, operational psychology personnel, etc.</td>
</tr>
<tr>
<td>Intercultural Communication</td>
<td>How people from different cultural backgrounds communicate.</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Factors impacting interactions or relations <strong>between</strong> persons.</td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>Thought processes and emotions occurring <strong>within</strong> a person.</td>
</tr>
<tr>
<td>Leadership</td>
<td>The act of influencing and directing others to accomplish an objective.</td>
</tr>
<tr>
<td>Lesson</td>
<td>A single continuous session of formal instruction (on a subject) which may have theoretical and/or practical content</td>
</tr>
<tr>
<td>Operational Relevance</td>
<td>Ideas or actions directly applicable to a mission task; practical rather than theoretical in nature.</td>
</tr>
<tr>
<td>Self-Care</td>
<td>Taking actions necessary to maintain one’s psychological and physical well-being, which is critical for effective performance, especially under difficult or stressful circumstances.</td>
</tr>
<tr>
<td>Space Faring Culture</td>
<td>Behavioral patterns, beliefs, values, and a common purpose shared by people involved in space exploration.</td>
</tr>
<tr>
<td>Stereotype</td>
<td>Generalities or judgments about groups applied to a specific person that disregards characteristics of that individual. They may</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>create false assumptions about that individual that impact thoughts, behavior, emotions, and expectations.</td>
<td>Stress: A set of conditions that lead to emotional, physiological, and psychological reactions. Excessive stress often has negative physiological and psychological effects.</td>
</tr>
<tr>
<td>Stress</td>
<td>Task Saturation: When a person is overloaded by a task or set of tasks to the point that he/she cannot complete the task. Under these circumstances, the person may ignore important external stimuli and make mistakes.</td>
</tr>
<tr>
<td>Team Cohesion</td>
<td>Training Program: The extent to which a group works harmoniously.</td>
</tr>
<tr>
<td>Training Program</td>
<td>Training Specialist: Professional with expertise in training design, development, and/or delivery; e.g., instructional designers, curriculum developers, educational technologists, instructors/facilitators, etc.</td>
</tr>
<tr>
<td>Two/Multiple-Person Approach</td>
<td>Vigilance: Using one or more additional persons for critical tasks that can be performed by one person. The second person verifies that the task is performed correctly. This approach reduces the chance that human error will occur.</td>
</tr>
<tr>
<td></td>
<td>Vigilance: To be continuously ready to act; staying watchful and alert.</td>
</tr>
</tbody>
</table>
REFERENCES