

Advanced Training for Commanders: A Competency-Based Approach to Training Requirements Definition for the JFACC

Dr. George Alliger
The Group for Organizational Effectiveness, Inc.
Albany, NY
George.Alliger@groupOE.com

Dr. Michael J. Garrity and Katrina See
Aptima, Inc.
Woburn, MA
MGarrity@aptima.com
KSee@aptima.com

James M. McCall
Simulation Technologies, Inc.
Mesa, AZ
James.McCall@mesa.afmc.af.mil

Lt Chad Tossell
Air Force Research Laboratory
Mesa, AZ
Chad.Tossell@mesa.afmc.af.mil

ABSTRACT

The Joint Force Air Component Commander (JFACC) is the commander of air assets and answers directly to the Joint Force Commander (JFC). The Air and Space Operations Center (AOC) is the weapon system which enables the JFACC to accomplish these command and control (C2) responsibilities. Currently, JFACCs receive little preparatory training for the complex AOC environment. General John P. Jumper, CSAF, said of Kosovo: "LGen Michael Short, JFACC of Operation Allied Force, trained himself in the operational level of warfare... [Most of us in Air Force leadership] trained ourselves, because our system did not." (AF Magazine, April 2000). Unfortunately, this is still the case. The Air Force recognizes that the AOC's weapon system designation necessitates a comprehensive training program.

The AF Research Laboratory, Mesa Research Site, has begun an effort to define JFACC training needs in terms of requisite competencies, knowledge and skills critical to the JFACC responsibilities. JFACC competency definitions will provide a foundation for the development of advanced training and competency assessment tools. Ultimately, this will provide the means to design critical events into a scenario targeted at training JFACC-specific objectives. This vital link between competencies and scenario-based training is the key to future development of specialized training for senior C2 personnel. The initial participants for this effort were former JFACCs in the Air Force. Results will be validated via interviews with recent JFACCs, as well as other senior AOC leadership, including AOC Directors and Division Chiefs.

In this paper we will discuss the initial results of our analysis with the former JFACCs. Additionally, we will analyze the findings of this effort against results of other ongoing competency definition efforts aimed at the lower level operators within the AOC. Finally, we will discuss potential approaches to training senior-level personnel in scenario-based training environments.

ABOUT THE AUTHORS

Dr. George M. Alliger is VP of Solutions for the Group for Organizational Effectiveness (gOE). He has taught and consulted for over twenty years in the areas of training needs analysis and employee and management development.

Mark McCall is a senior military analyst for Simulations Technologies Inc. He has experience as a technician, trainer, engineer, program manager, and test manager in the areas of command, control, communications and computer (C4) systems and simulation environments.

Lt Chad Tossell is a Behavioral Scientist for the Warfighter Training Research Division, Air Force Research Laboratory. He facilitates Program Management for AOC and IO Training Research.

Dr. Michael J. Garrity is an Industrial-Organizational Psychologist and Business Area Leader for Competency Development for Aptima, Inc. Dr. Garrity has acted as a facilitator and analyst for several MECSM efforts.

Advanced Training for Commanders: A Competency-Based Approach to Training Requirements Definition for the JFACC

Dr. George Alliger
The Group for Organizational Effectiveness, Inc.
Albany, NY
George.Alliger@groupOE.com

**Dr. Michael J. Garrity and
Katrina See**
Aptima, Inc.
Woburn, MA
MGarrity@aptima.com
KSee@aptima.com

James M. McCall
Simulation Technologies, Inc.
Mesa, AZ
James.McCall@mesa.afmc.af.mil

Lt Chad Tossell
Air Force Research Laboratory
Mesa, AZ
Chad.Tossell@mesa.afmc.af.mil

INTRODUCTION

Defining training requirements for the Joint Force Air and Space Component Commander (JFACC) for use in the Theatre Air Control System (TACS) represents an important challenge. This challenge is driven by several factors. First, JFACCs are senior officers, usually at the three-star level, with broad responsibilities both to their service and to the Joint Force Commander. In peacetime, they are usually the commanders of Numbered Air Forces (NAF) and have traditionally had broad responsibilities to train and equip the air wings under their command. Additionally, several of the NAF commanders are also assigned specifically to a Theater Combatant Commander and are responsible for supporting the Combatant Commander in the deliberate and crisis action planning processes. These broad responsibilities limit the ability of the NAF commander to train for his contingency duties as JFACC.

Second, as General John Jumper, CSAF, noted, the Air Force system does not train its officers to be JFACCs. The typical NAF commander has spent his career in the combat air forces, beginning as a pilot and progressing through various assignments and command positions that are focused on tactical employment of air power. His entire career has made him an expert in tactical execution rather than in the operational art. His primary experience in the operational art of war, the process of planning and sustaining operations and campaigns to meet strategic objectives, has been through professional education opportunities and potentially through one joint assignment on a combatant command staff.

Third, in wartime, the JFACC does not have the opportunity to focus on just one set of duties. The JFACC is usually assigned additional duties or “hats” that, while related to his primary duties, require

different sets of knowledge and skills to be successful. The other “hats” the JFACC must be prepared for are the Airspace Control Authority, the Area Air Defense Commander, the Supported Commander for Counterair, and the Supported Commander for Theater Airborne Intelligence, Surveillance, and Reconnaissance. Additionally, the JFACC may also be filling the Air Force role of Commander, Air Force Forces (COMAFOR).

Fourth, in the current political environment, the United States does not plan to conduct any contingency action alone but will operate as a member of a coalition. The result is that the JFACC is usually designated as the Coalition Force Air Component Commander (CFACC) and the responsibilities are now multiplied by all the operational and political issues of operating in a coalition environment.

Finally, the issues and responsibilities that fall within the C/JFACC’s purview are such that no training system or training exercise can fully replicate. Only the life and death reality of combat can provide the complete training environment for the C/JFACC. The best the Air Force can do for the potential C/JFACC is to provide the opportunities for the commander to consider the potential issues and prepare himself for the harsh reality of contingency operations. The JFACC Mission Essential Competency (MEC)SM effort is an attempt to identify the requisite competencies, knowledge, and skills critical to JFACC responsibilities and to provide a foundation for the development of advanced training and competency assessment tools for the JFACC.

JFACC MECSM Process

The MECSM process provides guidelines for knowledge elicitation and validation techniques from Subject

Matter Experts (SMEs) for the purpose of developing training requirements and performance measures that capture higher level tasks and responsibilities (Colegrove & Alliger, 2002; Colegrove, Alliger, & Bennett, 2003). One way this information is used is to facilitate development of simulation environments with the purpose of increasing proficiency and readiness. How this process differs from other work analysis processes is, in part, the focus on higher level tasks and responsibilities that can inform simulation and more accurately capture the combat environment. In addition, the process is customizable given the position, division, or airframe. An outline of the general MECSM process is provided in the next two paragraphs.

The process begins by a review of the particular position, division, or airframe to gather relevant domain information. This process of eliciting the general procedures and terminology aids in determining the effort's focus (level of granularity) and the development of questions that will be used to guide workshop facilitation. This step also includes consultation with a SME to provide additional information and feedback. Once this preliminary step is completed the first workshop takes place. During the first workshop, the facilitators work with a group of SMEs to gain an understanding of the structure of the organization or position, specific positions within that organization (if applicable), the fundamental functions performed, the knowledge and skills required to perform those functions, and the supporting competencies that enable those functions.

The products of this first workshop are consolidated, organized, and streamlined into a series of draft products (MECsSM, Knowledge and Skills, , and Supporting Competencies) which are reassessed in a second workshop by a group of subject matter experts. This group includes SMEs from the previous workshop as well as new SMEs. The revised products generated in this second workshop are used to generate a series of surveys. These surveys will be distributed to individuals with relevant experience to validate the judgments of the participating SMEs as well as provide ratings on the relationships between the different components of the MECsSM and specifically identify those relationships which are critical to the position. The results from these surveys will be coded and analyzed. This information will be used to identify training gaps and opportunities for measurement. The next section provides the MECSM approach specific to the JFACC.

Mission Essential CompetenciesSM for the JFACC

As with previous efforts, one of the first challenges we faced was that of scope of the process. To this point, we had dealt with both single, dual and multi-position platforms, and multi-position, multi-team organizations. The JFACC MECSM effort differed from these in a number of ways. The first centers on the ability to scale the process down to a single, non-aircraft position. Secondly, it was important to know whether the process would be applicable to such a senior leader position. We decided to incorporate the traditional process outlined above and make any required changes. One change, discussed more in a later section, was to identify the relative importance of particular knowledge and skills rather the level of a particular knowledge and skill needed to perform job functions.

Two MECSM workshops have been conducted for the JFACC. This section of the paper will describe the outcomes of these two workshops. Although our experience is that the draft products obtained by the end of the second workshop are relatively reliable, they are still subject to change. In addition, the MECSM process necessarily takes a slightly different form for different efforts. Specifics regarding the nature of these changes will be discussed further below.

First workshop process and outcomes

Like all MECSM workshops, the first workshop was a facilitated, SME-centered session. The SMEs in this case are members of the Air Force Operational Command Training Program (OCTP) program and were very familiar with the work processes, requirements, and products of the JFACC. Additionally, each of them have served as a JFACC and have served as senior mentors to other JFACCs in various exercises. The workshop proceeded, after introductions and description of objectives, by eliciting from the SMEs a) the functions, responsibilities, products, and outcomes associated with the JFACC, and b) the knowledge and skills required for each of the functions and responsibilities identified. As is typical of the MECSM process, a list of supporting competencies was also identified.

The expertise-elicitation process in this first workshop typically requires expert elucidation of several aspects of the job, including identification of the missions, simple, mid range and most complex; clarification of

the names and duties of positions/sections/teams; identification of tasks required to do each mission for each position; identification of knowledge required for each position; identification of skills required for each position; and identification of supporting competencies.

The SME input was then refined and organized. The results of this process included a draft of the knowledge and skills and the supporting competencies. In addition, initial MECSM definitions were identified. Again, this process was very similar for the JFACC effort as has been the case for other MEC efforts.

Second workshop process and outcomes

The second workshop was attended by all of the SMEs as in the first workshop, and included an additional senior mentor who had not attended the first workshop (participation of new SMEs in the second workshop is typical for the MECSM process). The inclusion of additional SMEs often results in an alternative perspective that provides a more comprehensive understanding of the effort. In this workshop, the draft MECsSM, supporting competencies, and knowledge and skills were presented to the SMEs for critiquing, editing, and revision. As is typical, the wording of the MECsSM changed somewhat at this stage. The draft supporting competencies were also revised. In other MECSM efforts, the knowledge and skills are revised, and mapped onto relevant positions in the particular organization. For the JFACC effort, SMEs revised the MECsSM, Supporting Competencies, and Knowledge and Skills. In addition, a list of JFACC developmental experiences was developed. These results, which, as mentioned, are only preliminary, are presented below.

Mission Essential CompetenciesSM for JFACC

- 1. Blue Capability Integration:** Develops and maintains understanding of current internal and external joint and coalition resources and capabilities, limitations, Red and Blue CoGs (centers of gravity) and vulnerabilities. Develops plan that integrates, coordinates, and leverages resources to support Coalition/Joint Force Commander (C/JFC) guidance and intent supporting the campaign plan.
- 2. Blue Analysis of Red:** Understands Red's current internal and external resources and capabilities, limitations, and Red's view of Red and Blue CoGs (centers of gravity) and vulnerabilities. Attempts

to model Red plan that integrates, coordinates, and leverages Red resources to achieve Red's assumed strategic and operational objectives.

- 3. Personal Contribution:** Focuses personal contribution to AOC in planning, execution, and assessment by taking a proactive approach towards future strategy and planning. Maintains appropriate theater strategic understanding and operational focus without being preoccupied with current tactical operations. Able to anticipate, articulate, and respond to the changing nature of the campaign as it unfolds/develops.
- 4. Situational Awareness / Understanding:** Establishes and maintains broad, horizontal and vertical operational level situational awareness (SA). Translates this broad SA into situational understanding in order to put individual tasks in context by conveying how individual tasks (details) impact the mission.
- 5. Formal/Informal Means:** Exploits the strengths of formal and informal organizations, agencies, and hierarchies to achieve mission objectives.
- 6. Joint and Coalition Team:** Creates an environment that facilitates team building through open horizontal and vertical communication, feedback, education, and innovation. Uses walk-throughs, individual interactions with key personnel, scheduled and unscheduled briefs, and continuous training.
- 7. Personal and Organizational Battle Rhythm:** Establishes personal and organizational battle rhythm integrated with C/JFC battle rhythm (BR) to support horizontal and vertical integration to ensure a coordinated campaign.

Supporting Competencies for JFACC

Leadership: Ability to motivate and inspire individuals and build teams to achieve objectives.

Trust: Ability to demonstrate trust in subordinates by a willingness to delegate and allow subordinates to work without constant supervision.

Confidence: Ability to gain the trust of superiors, peers, and subordinates by demonstrating integrity, professional competence, and dedication to successfully completing the current mission.

Balance: Ability to balance personal health and mental well being with the demands of the job in order to stay fresh, alert, and effective.

Table 1. Examples of Knowledge and Skills from JFACC MEC Workshop

KS Number	Knowledge or Skill	Knowledge and Skills Wording	Priority
1	knowledge	<u>Workflow:</u> Understands the 51 formal processes (team makeup, inputs, and outputs) the products for the major processes and the nine which he/she is personally responsible for.	1
2	knowledge	<u>Interrelationships:</u> Understands how AOC operations and timelines are affected by relationships among forces, systems, components, and headquarters and by policy constraints. Particularly important to understand the contributions of the other components to the joint fight.	1
3	knowledge	<u>Component Air Assets:</u> Understands how to task assets provided by the other components to the C/JFACC's fight (e.g., Marine air, attack helicopters, ATACMS, TLAMS, Naval air, SOF assets).	2
4	knowledge	<u>Impact:</u> Knows the consequences/impact of process problems (e.g., late inputs, improperly formatted inputs) at different levels of the organization.	2
5	knowledge	<u>Recovery:</u> Knows how to direct solutions to fix problems specific to the AOC processes and workflow.	3
6	skill	<u>Process Integration:</u> Able to integrate personal C/JFACC command responsibilities with staff processes through an iterative commander-centric process.	1

Decisiveness: Ability and willingness to make timely decisions based on information available.

Objectivity: Ability to clearly look at your situation and the enemy's situation as they unfold.

Adaptability: Ability to withstand or adjust to changes in the environment.

Interpersonal Communication: Ability to communicate (e.g., oral/written) in a clear, concise, and timely manner.

Projection: Ability to conceptualize future actions and events based on relevant factors.

Multi-tasking: Ability to effectively manage time and priorities to accomplish multiple activities simultaneously.

Concentration: Ability to maintain focus and deal with uncertainty through the fog of war.

Negotiation: Ability to tactfully resolve difficult situations when internal and external partners disagree due to contrasting opinions, goals, priorities, methods, and/or solutions.

Courage: Ability to do the right thing at the right time in spite of pressure to do otherwise. Includes the ability to talk about doubt, uncertainty, and bad news.

Acceptance of Risk: Ability to make decisions in the absence of total certainty.

“Scaling” of the MECSM process

One implication for the current work relates to whether the MECSM process of job/work analysis, which was developed initially for smaller single or multi-position platforms and organizations (i.e., aircraft platforms, AOC teams/divisions), would scale in such a way that we could develop useful outcomes for a single non-aircraft position such as the JFACC. Overall, our preliminary findings do suggest that the MECSM methodology continues to generalize in this way (corroborated by findings of another MECSM effort for single-person, non-aircraft position, the Joint Terminal Attack Controller (JTAC)). Results of this effort to date suggest that the effort takes about the same amount of time and naturally follows a very similar process. A few minor modifications were made. Traditionally, specific and relevant knowledge and skills are identified as well as the level of a particular knowledge and skill relevant for successful performance of a MECSM. For the JFACC effort, however, we chose to focus on the relevance of a particular knowledge and skill. In addition, for this effort, we also identified categories or levels of professional development. In this effort, we hypothesized that the identification of levels of professional development would provide trainers with additional and useful information when phasing training events.

Comparison of JFACC MECSM effort to other MECSM efforts

The various MECSM efforts can be distinguished along a number of continua. Some examples are provided in table 2:

Table 2: Example continua on which various MEC efforts may be considered

Individual	←+++++++→	Team
Leader	←+++++++→	Follower
Management	←+++++++→	Task Performance
Strategic	←+++++++→	Tactical
Joint/Coalition	←+++++++→	USAF-centered

What follows is a brief consideration of the JFACC MECSM effort compared to some other MECSM efforts, using these example continua.

Individual/Team. JFACCs are individuals. Indeed, this fact comes out remarkably clearly in the MECs themselves. Consider, for example, MECsSM 3 (“Personal Contribution”) and 7 (“Personal and Organizational Battle Rhythm”). Each suggests that the JFACC is a personal force, and that personality and individual capabilities will have a large impact on his job effectiveness. The JFACC SMEs felt strongly about the individual nature of the contribution of the JFACC. MECSM 3 reads:

Personal Contribution: Focuses personal contribution to AOC in planning, execution, and assessment by taking a proactive approach towards future strategy and planning. Maintains appropriate theater strategic understanding and operational focus without being preoccupied with current tactical operations. Able to anticipate, articulate, and respond to the changing nature of the campaign as it unfolds/develops.

By comparison, some MECsSM deal with individuals who are embedded in a (sometimes relatively intact) team, such as AWACS crew members (e.g., the Weapons Director, or the Air Surveillance Technician). For positions such as these, while the importance of individual skills is never eclipsed, it is still the case that teams and teamwork are essential. Indeed, for AWACS both Internal Teamwork and External Teamwork emerged as Supporting Competencies. For the JFACC, personal issues like Balance emerged, while of course team building was considered important.

Thus, on the Individual/Team continuum JFACCs would “load” more toward Individual, while many other positions defined by the MECsSM would be more toward the Team pole.

Leader/Follower. Obviously, the JFACC is a leader and on this continuum would fall starkly at the Leader end or anchor. Leadership was a Supporting Competency, as were leader-related competencies such as:

Trust: Ability to demonstrate trust in subordinates by a willingness to delegate and allow subordinates to work without constant supervision.

Confidence: Ability to gain the trust of superiors, peers, and subordinates by demonstrating integrity, professional competence, and dedication to successfully completing the current mission.

Courage: Ability to do the right thing at the right time in spite of pressure to do otherwise. Includes the ability to talk about doubt, uncertainty, and bad news.

Acceptance of Risk: Ability to make decisions in the absence of total certainty.

Objectivity: Ability to clearly look at your situation and the enemy’s situation as they unfold.

These leadership competencies are required to successfully carry out the MECSM themselves. There are other MECSM efforts where leadership emerged, such as NATO Mission Commander (sometimes called Package Commander). Similarly, in the AOC divisions Leadership emerged, presumably to capture the responsibilities of individuals such as team chiefs. On the other hand, in certain MECSM efforts leadership did not emerge as a Supporting Competency. For example, the Joint Tactical Attack Controller (JTAC) SMEs did not suggest leadership as a required Supporting Competency, although Team Coordination was important. Yet other MECSM efforts, such as that for Air-to-Ground (e.g., F15E, F16 Block 30/40), indicate that such pilots may fall somewhere within the Leader/Follower continuum, with Leadership in those cases having a flavor of team coordination.

Management/Task Performance. This continuum would be characterized on the one end by roles where management is a strong requirement, and on the other, rather than

management, by the acceptance of management and task performance. Interestingly, the JFACC would *not* appear to lie on the management end of this continuum, because he leaves management (e.g., of the AOC) to others. Indeed the JFACC SMEs repeatedly suggested that an over-focus on management was a danger into which JFACCs could fall. So, in a sense, the JFACC is unique, and “opts out” of the categories of this continuum. This is because JFACCs are leaders, not managers – much in the way the President of the United States is a leader rather than manager.

Strategic/Tactical. On this classic continuum, the JFACC clearly aligns with the strategic anchor. Indeed, in MECSM 3 it states that the JFACC takes “a proactive approach towards future strategy and planning. Maintains appropriate theater strategic understanding and operational focus without being preoccupied with current tactical operations.” In other MECSM models, execution of tactics is the focus, even for positions where leadership is central (e.g., Mission Commander).

Joint-Coalition/USAF-centered. As a final continuum to consider, this differentiates between the extent to which the person’s role is clearly and centrally affected by a joint or coalition environment, or not. Obviously, any USAF individual may find themselves in a joint or coalition environment, but the issue is the extent to which this is inherent in the job. The JFACC – **Joint** Forces Air Component Commander – is always operating in a joint environment. Other roles defined by the MECs (e.g., JTAC, NATO Mission Commander) also have a joint or coalition emphasis everyday in the carrying out of their responsibilities. Other roles (e.g., Air-to-Air) are not inherently joint. Others still (e.g., AWACS) may often have joint responsibilities and the need to communicate with joint or coalition partners (interestingly, SMEs from respective countries indicated this is more commonly the case with RAF AWACS than USAF AWACS).

This exercise of using continua as a method for distinguishing the JFACC from other MECSM efforts is clearly incomplete. However, it is nonetheless interesting to note that expected placement on a continua does occur when the MECSM and their related Supporting Competencies are examined, and it is hoped that the reader, having digested these very qualitative and preliminary analyses, feels at least somewhat better informed on the differences among the MECSM efforts.

JFACC Training

The uniqueness of the JFACC MECSM reveals the challenge in defining training methods for this position. It is, of course, no easy journey for one to become JFACC of a theater. In fact, few military officers make it to the general officer level; being designated a JFACC is even more of a test. Assuredly, those serving as JFACCs have a wealth of tactical leadership experience, rich professional military education, and training in many different aspects of warfighting. Due to the nature of the JFACC position, those that serve in this role must be the best of the best. Thus, it was interesting seeing the MECSM analysis shed light on the training need areas.

Retired Lieutenant General Steve Croker described this need quite well during the second JFACC MECSM Workshop: *“Not everyone is good at [operational level decision-making]. There is a lot of artfulness involved. However, if you practice, you’ll likely get better.”* Though JFACCs have a prolific background of experiences, practice in the art of operational-level decision-making is key to effective training. There is a difference between other command positions in the Air Force and the JFACC position. He (LGen Croker) used a family analogy to explain the difference. The following is a paraphrase of this analogy:

The distinction between most commanders and the JFACC is like the difference between parents and grandparents. Being able to have fun with grandchildren on occasion and leaving the detailed caring and discipline to the baby’s parents is one of the great joys of becoming a grandparent. Of course, grandparents provide guidance and direction when appropriate, but talk to their children sparsely about it when needed. Grandparents and JFACCs should have a much bigger picture in mind and not concern themselves with micro-managing the smaller details of child development or tactical warfare.

Because officers in the Air Force are experienced in leading the tactical elements of an air war, JFACC training should be on a different level: the operational-level. JFACCs should not be concerned with the altitude and approach speed of the F-16 taking out the Surface-to-Air Missile. Nor should he or she be watching hours of Predator feed and involved in the gathering of intelligence from same. (Some have suggested that the JFACC should not be on the Combat Operations Floor for this reason). JFACC planning and decision-making rests at a higher-level with a more strategic vision of operations.

Thus, JFACC training must include the development of a more "hands-off" approach to operational warfighting. Notice again the Supporting Competencies indicated important by SMEs: Trust, Confidence, and Risk Acceptance (to name a few). JFACC Training should indeed focus on giving these senior leaders experience at this different level of war. The Air Force Research Laboratory, along with Aptima Inc., is developing a computer-based trainer to meet this objective. Rather than allowing JFACCs to practice the operational-level of war only on-the-job, this trainer is being constructed to go through operational-level processes and introduce them to situations requiring a higher-level of decision-making and planning.

This tool will not be designed to replace mentoring and on-the-job training; rather it will provide a supplement that can improve the utility of these established methods. This system will support the development of the senior leader by

- Training the knowledge and skills most critical to their job.
- Leveraging lessons learned to embed the knowledge and skills into a contextually rich training scenario.

Continuing in the spirit of the MECSM methodology, subject matter experts will be involved at every stage of development. Though in the beginning research stages, this could be an excellent rehearsal capability for future JFACCs and those occupying other senior leadership positions.

REFERENCES

- Alliger, G., Garrity, M., Morley, R., Rodriguez, D., Beer, L. & McCall, M. (2003). Competency-based definition of work & performance for command and control. Presented at IITSEC 2003.
- Colegrove, C. M., & Alliger, G. M. (2002). Mission Essential CompetenciesSM: Defining Combat Mission Readiness in a Novel Way. Paper presented at: NATO Research & Technology Organization, Studies, Analysis, and Simulation Panel, Conference on Mission Training via Distributed Simulation (SAS 38), Brussels, Belgium.
- Alliger, G. M., Colegrove, C., & Bennett, W. Jr., (2003). Mission Essential Competencies: New Method for Defining Operational Readiness and Training Requirements. Paper presented at the 13th International Occupational Analyst Workshop, San Antonio, TX, April.