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United States Coast Guard

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MEMORANDUM

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From: M. D. Brooks, CAPT
CG FORCECOM (FC-T)

Reply to FC-T
Attn of: Dr. B. Habib

To: Distribution

Subj: PROMULGATION OF TRAINING SYSTEM STANDARD OPERATING PROCEDURES VOLUME 2 (ANALYSIS)

1. I am proud to promulgate the revision to the Coast Guard's Training System Standard Operating Procedure for Analysis, Volume 2. This effort was a collaborative effort of FORCECOM, Training Centers, and Training System stakeholders to reflect proven processes to obtain repeatable and quality outputs.

2. I commend all parties who participated in the monumental task of revising the SOP.

#

Dist: CG TRACEN Cape May
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STANDARD OPERATING PROCEDURES FOR THE COAST GUARD'S TRAINING SYSTEM

Volume 2

Analysis

United States Coast Guard Force Readiness Command
April 2026

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Summary of Changes

Terminology

Expands on the Human Performance Technology (HPT) Model to include guidance from newer frameworks, such as Van Tiem's HPT approach, emphasizing alignment with Coast Guard's broader strategic goals. Staffing Requirements Analysis (SRA) has been changed to Workforce Requirements Analysis (WRA).

Structural

Introduces broader analytical categories and adds Rapid, Goal, and SWOT analyses as accepted methodologies, providing more flexibility for tailored approaches.

Processes

- Alignment and Planning:
  - Refines alignment into three phases: Scoping, Project Planning, and Final Alignment. This includes a new emphasis on stakeholder communication and a comprehensive Plan of Action and Milestones (POAM).
- Data Collection:
  - Introduces more detailed considerations for qualitative and quantitative data balancing, including expanded methodologies like SWOT Analysis.
- Evaluation:
  - Includes a more robust evaluation process, emphasizing measurable outcomes and continuous updates to Key Performance Indicators (KPIs) over time.
  - Adds narrative for drafting an evaluation plan (measuring change in behavior/performance) that will be revised throughout the ADDIE process.

Methodology-Specific

- Strategic Needs Assessments (SNAs):
  - Expanded to include an evaluation and follow-up process beyond the initial recommendations phase.
- Front-End Analysis (FEA):
  - Adds clarification about when to use Diagnostic versus New Performance Planning FEAs and introduces improved tools for data validation and task prioritization.
- Job Task Analysis (JTA):
  - Introduces a greater focus on integrating existing curriculum reviews and Difficulty, Importance, and Frequency (DIF) model adjustments to better align training needs.

Analytical Support Tools

Adds content for tools such as Training Curriculum Comparison, Cost Analyses, and Goal Analysis, which were either less emphasized or absent in the previous version.

Expanded Responsibilities

Adds clear roles for external stakeholders, such as program managers and contracted consultants, emphasizing collaborative engagement and accountability.

New Analytical Methodologies

- Rapid Analysis: Formally introduced this methodology as a streamlined approach for immediate, high-priority performance issues.
- Goal Analysis: Added as a method for aligning organizational objectives with performance outcomes.
- SWOT Analysis: Incorporates Strengths, Weaknesses, Opportunities, and Threats as a systematic tool for evaluating performance gaps in the context of broader organizational factors.

Enhanced Alignment Process

- Enforces three phases of alignment:
    - Scoping Phase: Defines the problem, goals, and assumptions.
    - Project Planning Phase: Introduces the Plan of Action and Milestones (POAM) early on, allowing stakeholders to agree on deliverables and expectations.
    - Final Alignment Phase: Formalizes the project plan, gaining stakeholder buy-in through signed agreements.

Improved Evaluation and Follow-Up

- Emphasizes evaluation as a continuous process, extending beyond the final report:
    - Development of KPIs during alignment to measure intervention success.
    - Evaluation Plans: Created during the alignment phase and finalized by the conclusion of the analysis to assess long-term impact.

Broader Flexibility for Analysts

- Encourages analysts to adapt methodologies as needed while still adhering to systematic approaches.
- Explicit recognition of the need for hybrid and rapid analyses (e.g., combining elements of a Strategic Needs Assessment with a Front-End Analysis).

Emphasis on Cost-Effectiveness and Prioritization

Greater focus on prioritizing interventions based on:

- Cost-effectiveness.
- Time required for implementation.
- Anticipated impact on performance gaps.

Resources

All previously included appendices have been vetted for relevance and those deemed necessary have been included as resource links to a centralized repository instead of appendices attached to the Standard Operating Procedure (SOP) itself.

Non-Instructional Performance Interventions (NIPS)

All relevant content from SOP 8 (Non-Instructional Interventions) has been integrated into this SOP, including tables used for NIPS selection. As a result, SOP 8 is obsolete.

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SECTION I: Introduction

Introduction

Standard Operating Procedure (SOP) Volume 2: Analysis, is Force Readiness Command's (FORCECOM) primary reference guide for completing Human Performance Technology (HPT) based analyses. HPT encompasses various methods, processes, and approaches to improve human performance by solving or avoiding problems, and by leveraging new technologies, methods, and other opportunities. An HPT approach takes a systematic and holistic look at performance and identifies interventions which maximize mission execution. In some cases, effective implementation of HTP optimizes performance by establishing a new ideal state exceeding the original standards. HPT driven interventions address root causes, improve mission readiness, and serve as a catalyst for continuous process improvement.

1.1 Purpose

The purpose of this SOP is to:

- Provide guidance on how to effectively perform initial gap analyses, needs assessments, and other HPT-based methodologies which identify opportunities to improve performance throughout the CG.
- Provide standardized processes, procedures, and guidelines for specific types of analyses that identify the cause of and potential solutions to close performance gaps *without* limiting the ability of an analyst to modify the approach or methodology to best meet the client and/or mission need while still following a systematic approach.
- Provide a standardized methodology for prospective contractors to follow when clear guidelines are necessary to create performance work statements and cost estimates related to contracted analyses performed by third parties.

1.2 Target Audience

This SOP supports any member of the CG workforce who desires to investigate a perceived gap in performance or seeks to identify unleveraged opportunities to improve performance using a proven data-informed HPT analytical approach.

1.3 Background

Analysis is the primary tool for providing detailed and comprehensive information to Program Managers, Training Managers, and Acquisition Managers to make informed decisions regarding the deployment of financial, personnel, and materiel resources in support of instructional and non-instructional interventions. Individuals in these roles often must validate the need for investments which lead to the procurement of a myriad of training and other performance support resources to meet the demands of evolving workforce requirements and new acquisitions.

Rigorous analysis is essential for producing cost-effective performance-based training. Therefore, the CG requires thorough analysis to support any proposed training before funding and implementing it into the formal training system. Analysis ensures the determination of the correct solution to a performance gap and that training is not automatically assumed as the solution. Systematic analysis ultimately enables analysts to carefully assess factors that influence performance. While analysis may uncover a skill and knowledge gap, often addressed through training, a lack of skill and knowledge is only one of many factors that impact desired performance.

HPT methodologies help the analysis teams focus on real performance problems, the influences affecting performance, and the recommended interventions to improve performance. The information gathered through a comprehensive analysis determines what must change in the 'system' to achieve effective and efficient mission execution. At the conclusion of an analysis, findings and recommendations are communicated, identifying evidence-based and needs-driven interventions to close gaps and optimize performance. Valid recommended intervention(s) are directly linked to programmatic or organizational goals and objectives that are measurable over time.

An HPT approach will:

- Support an "analysis first" approach.
- Enable analysts assessing CG performance problems to examine a broad set of influences on performers based on client needs and the nature of the alleged gap itself.
- Provide analysts with tools and processes for identifying a solution set that closes or reduces gaps affecting human performance.
- Help the CG determine the right performance supports that are the most cost effective relative to their impact on mission readiness.

1.4 Responsibility

The FORCECOM Training Analysis Consulting and Evaluation Branch (FC-Tace) is the technical authority for HPT analysis methods. Updates to this SOP will be completed by a chartered work group of various training center (TRACEN) representatives led by FC-Tace and will be scheduled on a three-to-five-year cycle.

1.5 References

Campbell, R., Goodman-Williams, R., Feeney, H., and Fehler-Cabral, G. (2018). Assessing Triangulation Across Methodologies, Methods, and Stakeholder Groups: the Joys, Woes, and Politics of Interpreting Convergent and Divergent Data. American Evaluation Association, 41(1). https://journals.sagepub.com/doi/10.1177/1098214018804195

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SECTION II: Coast Guard Analysis Process

Introduction

Analysis in the Coast Guard is guided by the Human Performance Technology Model. This model creates a framework for conducting performance analysis, determining the cause of performance barriers, and implementing and evaluating solutions recommended to improve performance.

The procedures in this SOP are broken up onto the following sections:

- Section III, Section IV, and Section V: Performance Analysis, Cause Analysis, and Intervention Selection
- Section VI: Intervention Implementation
- Section VII: Evaluation

2.1 HPT Model Overview

The Coast Guard has specifically chosen a model developed by *Van Tiem et al.* and adopted by the International Society for Performance Improvement and depicted in Figure 1.

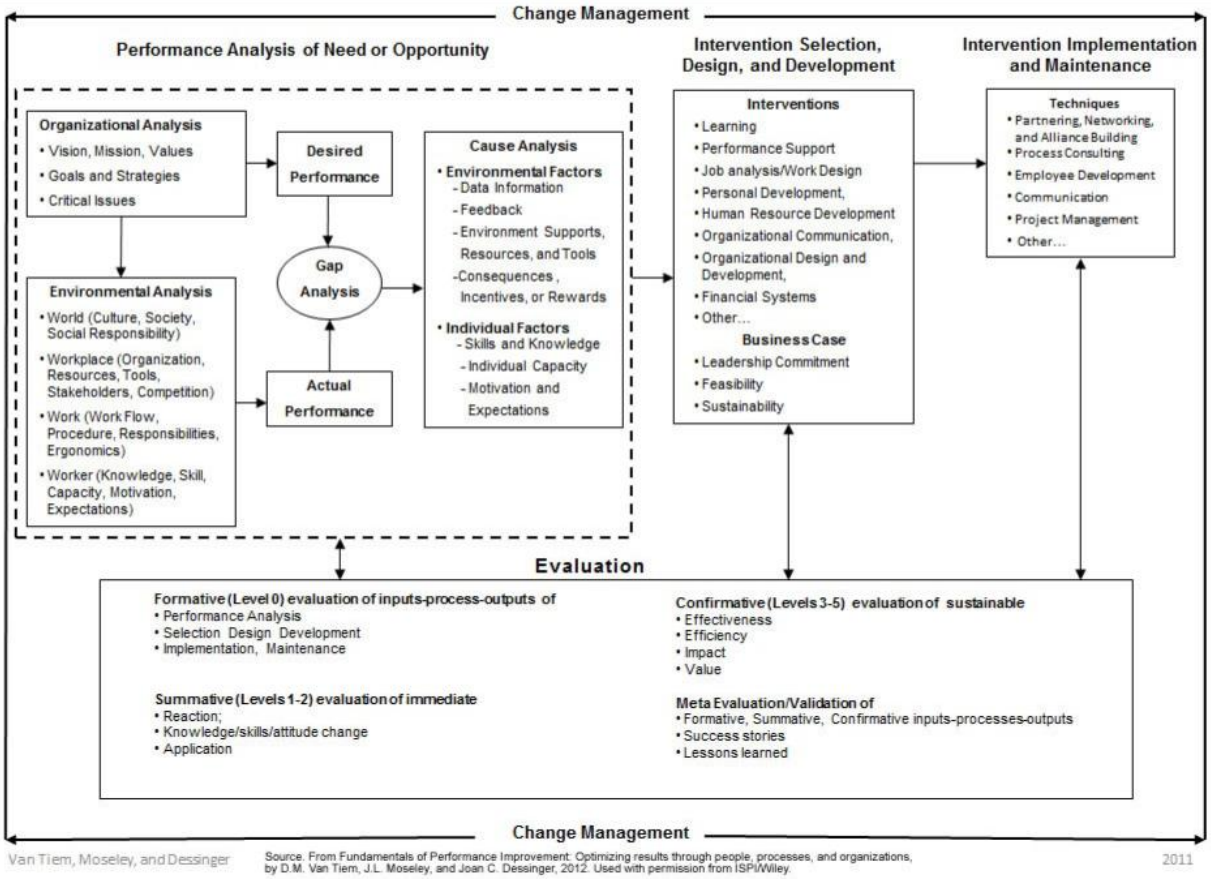

Figure 1. HPT Model.

2.1.1 Performance Analysis (Need or Opportunity)

All analyses start with a gap analysis as shown by the dotted box of the model (Figure 1). In this context, a gap is the difference between the current state of performance and the desired or ideal state of performance. An organization, environment, nature of work, and individual performance can all influence the current state of performance. Desired performance is most often defined by organizational policy, vision statements, mission requirements, relevant strategies, and client goals.

NOTE: A clear understanding of the perceived gap is critical to starting any analysis. A gap is initially defined through the alignment process (See Section III) by gathering as much information as available from the client. Desired performance, as defined by the client, should be well established by the conclusion of alignment as well as whether the analysis will focus on environmental factors, organizational factors, or both. This focus directly impacts the data collection plan (See Section III) and the type of analysis selected (See Sections IV & V).

A need occurs when current performance does not meet the desired level of performance. An opportunity arises when current performance meets the desired standard, but there is potential to optimize performance beyond the standard to establish a new ideal state.

Assessing the current state of performance is the bulk of an analyst's work throughout the gap analysis process. The analyst can address this with a multitude of methodologies. **Analysts are free to use any combination of methods found in Section IV-V of this SOP**, as well as any methods and tools used in industry. The goal first and foremost of any analysis is to tailor the approach to meet the needs of the client, in the timeframe agreed, with the resources available.

NOTE: Contractors assigned to analytical work should review their Performance Work Statement (PWS) for specific analysis requirements and/or limitations.

2.1.2 Cause Analysis

The type of analytical approach chosen by the analyst will aid in validating, refuting, or refining the gap or gaps. As gaps are more fully understood throughout the analytical process, an analyst should also simultaneously determine the causes of each gap observed. The analysis may approach causal analysis differently based on the type of analysis chosen, the scope of the project, and the nature of the gap itself. Barriers to performance and their causes may exist in multiple domains. The HPT Model simplifies the domains under two categories, environmental factors (variables external to the performer), or individual factors (variables internal to the performer). Another way to visualize this concept is through the longstanding Behavioral Engineering Model (BEM) developed by Thomas Gilbert. This model in Figure 2 compliments the HPT model by defining environmental factors as Data, Resources, and Incentives, and individual factors as Knowledge, Capacity and Motives.

The Behavior Engineering Model

	Information	Instrumentation	Motivation
Environment	*Data* 1. Relevant and frequent feedback about the adequacy of performance 2. Descriptions of what is expected of performance 3. Clear and relevant guides to adequate performance	*Resources* 1. Tools, resources, time and materials of work designed to match performance needs	*Incentives* 1. Adequate financial incentives made contingent upon performance 2. Non-monetary incentives made available 3. Career-development opportunities 4. Clear consequences for poor performance
Individual	*Knowledge* 1. Systematically designed training that matches the requirements of exemplary performance 2. Placement	*Capacity* 1. Flexible scheduling of performance to match peak capacity 2. Prosthesis or visual aids 3. Physical shaping 4. Adaptation 5. Selection	*Motives* 1. Assessment of people's motives to work 2. Recruitment of people to match the realities of situation

Reference: Dr. Thomas F. Gilbert, "Human Competence: Engineering Worthy Performance," 1978, 1996

Figure 2. BEM Model.

The BEM model at its core posits that to be an effective performer, an individual needs the following:

- Information: e.g. data (policies and procedures that guide and reinforce performance) and knowledge (the skills and know-how to perform the job as indicated).
- Instrumentation: e.g. resources (organizationally provided tools and resources to do the job) and capacity (the ability to properly employ the given resources).
- Motivation: e.g. incentives (the organization makes the job fulfilling through monetary/nonmonetary means and holds poor performers accountable) and motives (individuals understand the importance of the work and are a good fit for the position assigned).

An analyst ignoring environmental factors when determining the cause of a gap may inhibit discovering the root cause and negatively impact the identification of appropriate interventions. Approximately 75-85% of performance issues are linked to environmental factors (Chevalier, 2007). The BEM is one of many models used. Strengths, Weaknesses, Opportunities and Threats (SWOT) and Goal Analysis located in Section V are two other models used for taking a systematic look at causes of needs and opportunities. However, analysts can utilize other industry-recognized models to assess causation beyond the scope of this SOP.

NOTE: Some analytical approaches, such as Front-End Analysis (FEA) found in Section IV, combine performance analysis and cause analysis methods together. The FEA categorizes barriers to

performance into four domains: Skill and Knowledge (S/K), Environmental (ENV), Motivation and Incentive (M/I), and Assignment and Selection (A/S).

2.1.3 Intervention Selection

Interventions will consist of instructional and non-instructional interventions. Link each intervention recommendation to a specific gap. Analysts should collaborate with the client and responsible Training Manager when selecting potential interventions prior to completing the final report. See Section VI for more details. Prioritize interventions based on time to implement, cost to implement, and anticipated impact the recommendation will have on performance. This SOP does not cover the design and development of interventions.

2.1.4 Intervention Implementation

Implementation responsibilities vary based on the type of intervention. For instructional interventions, the responsibility to implement is a joint responsibility between the Training Manager and the instructional design team at the training center or FORCECOM Training Division (FC-T) as applicable. For non-instructional interventions, implementation is the responsibility of either the client, FC-T, or both, depending on the type of intervention, e.g. development of a job-aid or Electronic Performance Support System (EPSS) which may have a shared responsibility. Policy development and other environmental factors are typically the responsibility of the client to address. See Section VI for more details on preparing for intervention implementation.

2.1.5 Intervention Evaluation

Develop an evaluation plan as part of the intervention implementation process to assess the impact of each intervention. An evaluation plan should be initially drafted at the conclusion of alignment (See Section III) and finalized before concluding the analysis (See Section VI). Valid interventions address a specific and measurable contributing factor which caused the gap in the first place. Once the intervention is in place for an agreed amount of time, an analyst, preferably partnered with another analyst not involved with the original project, should perform a gap analysis once again and determine whether the gap between the current state and desired state has decreased, increased, or has been eliminated. Analysts should also assess which interventions made the greatest impact on the gap, and when necessary, select new interventions or revise existing interventions if the intended impact has not yet been realized. See section VII for more details on evaluating analytical work.

Beyond simply evaluating the implementation of recommendations, all analyses should include an initial evaluation plan within the context of **how success and/or change of behavior/performance will be measured if training solutions are implemented.** This initial plan will carry over to any design and development of training products and will be refined throughout the ADDIE process. Depending on the type of evaluation data being sought, collection of such data will be a collaborative effort within the stakeholders of the training triangle. More details can be found in FORCECOM Training SOP Volume 3 (Training Evaluation).

NOTE: Analytical restraint may be necessary when assessing the impact of interventions. Analysts may determine that more time is necessary to reach a definitive conclusion on impact, especially in cases where a particular intervention was delayed or not fully implemented as intended. It is important to avoid revising an intervention or introduce a new one if existing efforts have not been fully implemented and evaluated.

SECTION III: Initiating an Analysis

Introduction

Starting an analysis project off right requires deliberate planning and collaboration with the Training Manager and client. The time to initiate an analysis varies and depends heavily on how quickly stakeholders agree on the gap, provide data that substantiates the gap, and identify target performers for interviews, surveys, or observations. Initiating any analysis project starts with accepting the project and ends with a formal Plan of Action and Milestones (POAM) that the client and other stakeholders sign as the decision-making or resource allocation authority over the project.

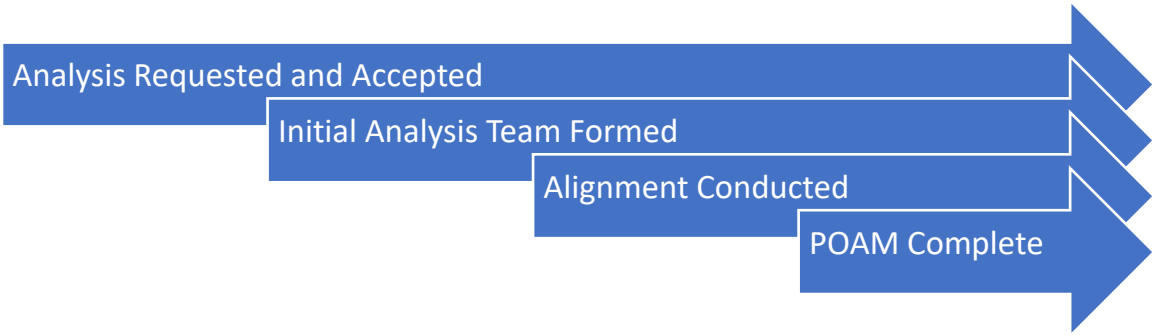

Figure 3. Analysis Initiation Phases.

NOTE: There are times when a specific methodology requires minor changes in the analysis initiation process. The individual methodology instructions found in Section VI or Section V will note these changes.

3.1 Analysis Requests

Each analysis begins with a request from FORCECOM or Headquarters Flag-level representative, a program office representative, or a schoolhouse. These requests can be formal Requests for Analysis (RFA) forms completed in partnership through a FORCECOM Training Manager (TM) to FC-Tace or more informal requests done through TRACENs, schoolhouses, or other local entities. This section applies to either of these methods. The person/group/entity initiating the request is usually the primary client or customer, especially if that entity is providing funding. Training Managers are responsible for coordinating the development of and reviewing RFAs prior to their formal submission using the FC-Tace Request for Analysis or Consultation Form.

NOTE: If a Training Manager is uncertain whether a potential project is a good candidate for formal analysis or are just seeking guidance with taking an HPT approach to solve an internal problem, a Request for Consultation (RFC) is the best way to receive support. RFCs require less information up front. Information discussed during an RFC will aid the program in leading their own effort or can be directly transferred to an RFA if a FORCECOM led analysis is the best course of action. Use the same link as an RFA to request an RFC. A TM must review it before formally submitting.

3.2 Forming an Analysis Team

Team Composition

A team effort mentality is an important approach for any analysis. The success of the analysis depends on all members of the team working together to complete the project. Some team members may not be fully identified until the conclusion of alignment. Once identified, members of the analysis team should include the following:

Human Performance Analysts

Human Performance Analysts are experts trained in the analysis methodologies and work as a team by overseeing the analysis, collecting data, determining the findings, making intervention recommendations, developing the analysis report, and conducting any evaluations.

Primary Client or Project Champion

The client or Project Champion is generally the senior most program office representative authorizing the Request for Analysis. All interventions recommended by analysis are the responsibility of the client to select and initiate implementation.

Program Action Officer

Designated by the Project Champion, a program action officer serves as the program point of contact to receive briefs on project updates, relay information and questions to senior leadership, review the report and participate in implementation planning on behalf of the Project Champion. They are responsible for providing funding, identifying sites to visit, and selecting Subject Matter Experts (SMEs) and Accomplished Performers (APs) for interviews and performance observations.

FORCECOM Training Manager (TM)

FORCECOM Training Managers work with the Customer and the analyst to gain consensus on project goals and issues, help with completing the RFA, and assist with the implementation of Skills/Knowledge recommendations from the analysis.

Subject Matter Expert (SMEs)

An SME is the most knowledgeable person regarding a specific subject or piece of equipment. SMEs provide valuable insight to the project from a higher-level organizational perspective and provide input on items such as performance standards, program strategic goals, current training and other performance support tools or programs. SMEs understand the "why" of performance and the policy and context around it.

Accomplished Performers (APs)

Accomplished Performers are a critical component of the analysis process. An AP is a person whose skill set and/or performance level serves as an example of the optimal or desired state. The APs are exemplars who are currently performing the job at the most effective and efficient performance levels. Their inclusion is critical because it means analysts can observe and interview the "best of the best" currently doing the job. From those documented observations, analysts validate performance accomplishments, tasks, and steps used later for the design and development of instructional interventions.

NOTE: If the equipment or job is new to the organization, APs may not be readily available internally. In such cases, the organization identifies APs from external sources. SMEs, factory technicians, or other experts help define the work environment and the specific performance support needs of the position being analyzed.

Stakeholders

Stakeholders are individuals or groups who have an interest in the outcome of an analysis. The findings may influence them or their work. Stakeholders often include other program offices and Training Managers when the area of focus impacts more than one office or mission area. Other examples of stakeholders include, but not limited to, SMEs, contractors, instructional designers, and representatives from training centers such as the Training Officer, Performance Systems Branch Chief, and/or School and Course Chiefs. Also included are any other functional group(s) impacted by changes recommended in the analysis.

3.3 Alignment

What is Alignment?

Alignment is the process that ensures that the project is clearly defined, that all the stakeholders and analysts agree to those definitions, and that there is a clear plan for project implementation. At the end of the alignment process there is an alignment document describing the agreements at each step of the process, signed by all key stakeholders. In short, alignment is making sure that everyone is "on the same page" about what the main question is, the steps to answer that question, and the necessary time and resources needed to answer the question.

When to Conduct Alignment

It is necessary to complete the initial alignment process at the very beginning of **every** analysis project, and before any significant analysis work begins. However, as the analysis progresses and more information becomes available, it may be necessary to re-address some of the elements of the project scope or deliverables to address new needs discovered by the analysis. Alignment is a continual process, not a singular event. Analysts will often meet after an RFA has been submitted with the client to gather additional information on the problem presented. These initial meetings, known as pre-alignment meetings, help develop a potential scope for the project.

Why Alignment Matters

Aligning a project ensures that the customer and the analysis team are working toward an agreed upon goal, and it establishes measurements for determining if the project is successful upon completion.

The output of the alignment process, the POAM, is the written contract between the client and the analysis team that codifies the agreement of all stakeholders on the business goals, specific analysis methodologies, data collection plan, evaluation plan, and the identification of the measurable outcomes, or deliverables the completed project should deliver. A clear, codified alignment helps to prevent "scope creep," or the unnecessary expansion of a project. Alignment also ensures that the project supports the broader business goals of the *CG Who Conducts Alignment*.

While the lead analyst will steer the alignment process, it is important that alignment includes all the key groups of people with possible impact from the outcome of the project. FORCECOM Training

Managers and the initiating program's representatives with decision-making authority or subject matter expertise are primary stakeholders in this process. TRACENS and the associated schoolhouse often participate when the probable cause of a performance issue is a skill and knowledge gap.

The Basic Alignment Process

There are three major components to the alignment process: Scoping, Initial Project Planning, and Final Alignment phases. The final deliverable or output of the alignment process is an agreement among all key stakeholders that shows that all parties agree about what the analysis is meant to accomplish, what the steps will be, any required resources and support, and how the team will function.

These are the basic steps for the three alignment phases.

- **Scoping Phase**
  - Step 1: Refine the Problem Statement
  - Step 2: Determine the Analysis Objectives and Goals
  - Step 3: Determine Desired or Ideal State Performance
  - Step 4: Define the Target Audience
  - Step 5: Determine Assumptions and Constraints
  - Step 6: Determine the Analysis Type (Methodology)
- **Project Planning Phase**
  - Step 7: Draft the Initial POAM
  - Step 8: Draft the Initial Data Collection and Evaluation Plan
  - Step 9: Prepare for Final Alignment Meeting
- **Final Alignment Phase**
  - Step 10: Conduct the Alignment Meeting
  - Step 11: Finalize the Draft POAM Based on Meeting Results
  - Step 12: Route the POAM for Signatures
  - Step 13: Maintain or Update the POAM as Needed

3.3.1 Scoping Phase

Scoping encompasses the process of examining the problem statement and planning for the specific details of the project, identifying the project goals, and the limits of the project. Think of scoping like putting a box around the project to keep it from getting too big, but also making sure that the box is filled with everything the analysis requires based on the client's needs. The initial information presented in the RFA assists with forming a general scope for the project. The analyst, Training Manager and client can then work together through informal pre-alignment meeting(s) to ask questions and gather additional data to complete Steps 1-6 below.

NOTE: If the project goals are unclear, or if the client, stakeholders, and analysis team cannot reach an agreement, a best practice would be to conduct a Goal Analysis in Section V of this SOP. Before resuming scoping, the Training Manager or analyst can assist the client with working through the goal analysis process and adjusting the RFA accordingly based on the results.

Step 1: Refine the Problem Statement

The problem statement is the core of the analysis project, the specific issue the analysis must address. A well-crafted problem statement answers, "Why this analysis, at this time?"

There are generally three broad types of problems that require an analysis:

- There is something new (equipment, systems, processes, jobs, etc.) and the best way to support performers is unknown.
- There is an issue with an existing piece of equipment, systems, processes, jobs, etc. which requires a fix to improve performance.
- An organizational change occurs, e.g., new policy, strategy, mission requirements, etc., which alters existing performance expectations or adds new responsibilities and expectations.

A problem statement should:

- Be clear and concise.
- Measure the problem's impact. Whenever possible, express it in terms of cost, lost time, or other negative outcomes resulting from ignoring the issue.
- Not include background information about the problem. This should be kept separate from the problem statement itself.

EXAMPLE

Background information: Over the past five years the Coast Guard has replaced non-standard tool kits on all cutter platforms and has developed Techniques, Tactics, and Procedures (TTP) doctrine regarding how to use new standardized toolkits for repairs. However, during these five years, over 500 widgets have been damaged due to improper tool use, resulting in a cost of over ten million dollars to replace the damaged widgets. Because of the damaged widgets, the Coast Guard has paused its program to replace toolkits on small boats and shore-based units, so those units are out of compliance with the new regulations.

Problem statement: The Office of Cutter Forces requires an analysis to determine the cause of and most effective way to decrease improper tool usage to counteract the high costs associated with replacing broken widgets.

Step 2: Determine the Analysis Goals and Objectives

The analysis objective is what the analysis should accomplish or address. It follows directly from the problem statement which is possibly refined from a Goal Analysis. Using the standard toolkit scenario (a change in equipment and policy), an analysis objective may read like this:

EXAMPLE

This analysis will have two primary goals: 1) An inventory of all the required tasks performed by personnel who maintain widgets with the new toolkit; and 2) Identification of the leading factors in skill/knowledge, environmental, assignment/selection and/or motivation/selection that are attributed to increased damage to widgets.

The objective does not need to include all the scoping details, but may include some, if relevant. Ultimately, outlining project goals is the first step towards setting the scope of the project and determining the most appropriate analytical approach or approaches.

Step 3: Determine Desired Performance

With the problem statement established, and the basic project goals outlined, the next step is to define desired performance. The client may present the analyst with broad changes in performance or behavior they desire to see such as reduction in errors, fewer breakdowns, reduction in the time it takes to complete a task or process, more accurate calculations, or improved customer feedback. These desired changes become the building blocks for Key Performance Indicators (KPIs), which establish a means to measure performance over time and quantify change. The analyst must then determine what data the client is already tracking that supports existing KPIs or used to support new ones. For example, if a desired change is reducing the time it takes to complete a task, is the current average time to complete the task being tracked? Establishing KPIs directly assists analysts with keeping the end state in mind, as KPIs define outcomes successful interventions would produce or influence.

EXAMPLE

KPI #1: Successful interventions recommended in the analysis will lead to at least a 50% reduction in broken widgets, which would in turn decrease the amount of money spent on widget replacement.

KPI #2: Successful interventions recommended in the analysis will lead to a 25% reduction in lost tools, reducing misuse of tools and tool replacement costs.

Identified KPIs are integrated into the Alignment Agreement, evaluation plan, and/or other project deliverables. During alignment and throughout the project, an evaluation plan will remain in draft as additional KPIs may be discovered over the course of the analysis. The goal for analysts is to link specific recommendations to KPIs whenever possible. Using the previous example, an analyst would

need to consider which interventions recommended would likely result in a 50% reduction in broken parts or a 25% reduction in lost tools as the analysis progresses. Tying recommendations to KPIs is what enables future assessment of whether the recommended intervention had the intended impact. See Section VII for more details about evaluating the success of analysis projects.

NOTE: New or existing KPIs that either lack data tracking or do not have enough data being tracked to adequately measure them are prime examples of client information gaps. Where feasible, gather data to close these pre-identified information gaps when developing the Data Collection Plan detailed in Section 3.4.

Step 4: Define the Target Audience

The target audience is the specific group of people whose performance the analysis intends to improve. The audience can range from a very broad population (such as an entire rate) to a very narrow or single population (such as an operator of a specific piece of equipment or individuals who share a position title, e.g., Commanding Officer or Officer-in-Charge). Some common questions to define the target audience include:

- Is this job or task performed by a single group or multiple groups, e.g., officer, enlisted, civilian, one or more enlisted rates, etc.?
- Does the audience all work in one place, or across the Coast Guard?
- Does any part of the audience already possess prerequisite skills or knowledge?

NOTE: If there are multiple target audiences involved, it is important to understand how they interact or relate with each other and if the performance should be standard between groups. One example would be analyzing individuals who perform the task compared to supervisors who oversee the task. Both may need to be able to perform the task to the same standard, but the supervisor may have additional responsibilities that need to be carried out to consider the job done. Another example would be analyzing a job that is held by some as a collateral duty, compared to others who conduct the job as a full-time responsibility. Performance expectations, number and type of tasks may differ between these two target audiences. In both examples the analysis team would need to decide if related audiences, such as supervisors or collateral duty members are in scope before proceeding.

EXAMPLE

Four different rates use a standard toolkit to repair widgets and the systems connected to them: ETs, EMs, MKs, and BMs. Generally, maintainers are third-class petty officers (E-4s) who have already had "A" school, but the content related to tool control and use contained in the four "A" Schools may differ. Maintainers are found in every cutter class, and most shore units.

Step 5: Determine Assumptions and Constraints

Assumptions are things or conditions that the analyst or stakeholders know to be true, even without additional research or confirmation, like the "givens" of the performance. *Constraints* are things that will present challenges and must be accounted for in planning the analysis project.

EXAMPLE

Assumptions: Toolkits are used the same way on each class of cutter, but the equipment repaired with the toolkits will vary between cutter classes. The new toolkits are completely standardized and should contain all the tools necessary to perform repairs and preventative maintenance tasks.

Constraints: Examples of common constraints may include project resource limitations, unpredictable deployment schedules, or lack of access to accomplished performers.

To prevent assumptions or constraints from derailing a project or compromising the quality of process or deliverables, the analyst(s) and stakeholders should identify as many assumptions and constraints as possible. Once identified, the analyst should identify ways to mitigate impacts to the project with preventative actions.

An example of preventative action for assumptions might mean that the data collection plan includes multiple site visits that include all unit types to interview and observe performers to collect data on and verify the variations in performance from one cutter class to another.

An example of preventative action for constraints is extending the timeline of the project or data collection phase to account for deployment schedules. An example of a preventative action for resource limitations is to utilize virtual interviews or focus groups where possible, but still trying to triangulate data through multiple data sources. This may also require a stipulation to accept that the final product may not be as complete as it would be if observations were possible.

Step 6: Determine the Analysis Type (Methodology)

The results from the previous steps will drive the methodology. For example, if the project goal is strictly about whether training is required or if training requires an update, then a Training Needs Assessment or Job Task Analysis would be appropriate. If there could be other issues beyond skill and knowledge, like new tools, better processes, or policy, etc., then a New Performance Planning or Diagnostic Front End Analysis approach may be more appropriate.

To get started review the approaches listed below in the order they appear in Section IV of this SOP:

- Training Needs Assessment
- Competency-Based Needs Assessment
- Strategic Needs Assessment
- Front End Analysis: New Performance Planning and Diagnostic (NPP-FEA, DFEA)
- Job Task Analysis (JTA)

- Occupational Analysis (OA)
- Workforce Requirements Analysis (WRA)
- Rapid Analysis (RA)

The analyst may need to perform additional secondary or add-on analyses to fully address the problem statement. These analyses listed in the order they appear are found in Section V of this SOP:

- Training Curriculum Comparison (TCC)
- Cost Comparison Analysis (CCA)
- Cost Benefits Analysis (CBA)
- Goal Analysis (GA)
- Strengths, Weaknesses, Opportunities and Threats (SWOT)

Sections IV and V of this SOP provide guidance for each of the analysis types listed above. An Analysis Determination Table (found HERE) lists each analysis and what it is best used for in a quick overview format. This table serves as a job-aid when considering which approach will best address the problem statement. Some analysis projects require multiple components to be thorough and effective. FORCECOM and the clients should agree on the analysis type/methodology, and it should be briefly described in the Plan of Action and Milestones (POAM).

EXAMPLE

The increase in broken widgets could have multiple causes, such as inaccurate TTP, the wrong tools being purchased, or lack of training on how to use the standard toolkit, among others. Thus, a Diagnostic Front End Analysis would be an appropriate choice because it examines multiple potential performance factors and focuses on already established jobs or tasks.

NOTE: With the first six steps complete, an analyst should be able to define the analysis project purpose, set its limits, and identify how to approach analyzing the stated problem. The project planning phase encompasses this approach.

3.3.2 Project Planning Phase

The project planning phase introduces the more technical elements of organizing an analysis project. The project plan is commonly referred to as a POAM and is integrated into the Alignment Agreement. Developing a POAM as described in this section will eliminate the need for a separate alignment document.

NOTE: The outcome of initial project planning is a draft POAM serving as a frame of reference for the final alignment agreement and meeting. If a section described below, that is relevant for the assigned project, cannot be drafted at this stage due to insufficient information, the analyst must make a note of this. Gaps in the draft project plan serve as a focus point for the final alignment meeting, covered in Section 3.3.3.

Step 7: Drafting the Initial POAM

At a minimum, a POAM includes an overview of the identified problem, the project team, the selected analysis method(s), a project schedule, and deliverables. The scoping process uncovers the information needed to complete a POAM. The team should tailor POAMs to fit the needs of the project and may include some or all the sections described below. An example of a POAM can be found in the example Alignment Agreement (found HERE).

a. Executive Summary

The executive summary is the first section of the document, if needed, but is often the last section developed. Generally, if the POAM has stakeholders included in the approval section who cannot directly participate in the project alignment process, adding an executive summary is a best practice. A typical summary will not exceed one page and contains a brief overview of the project background and problem statement, the type of analytical method(s) chosen, and an overview of the key project milestones and target dates for meeting those milestones. At times, it may be appropriate to address assumptions or constraints in the summary if they are especially influential on the project itself, especially deliverables.

b. Scope

This section captures much of what was uncovered during the scoping phase outlined by Section 3.3, Steps 1-6. A typical scope will include an overview of the type of analysis to be conducted, and a broader discussion of the overarching goals of the analysis. Also commonly included in this section is a determination of the target audience, and an overview of specific resource requirements, e.g. funding for travel, site visits, access to specific SMEs, etc., that will be integral to successful project completion. Who is responsible for providing necessary resources should also be delineated in this section of the POAM.

c. Roles and Responsibilities (Client, Stakeholder and Analysis Team Members)

This section of the POAM is most often organized as a table and is the place to identify all the major stakeholders involved and any specific responsibilities a stakeholder or project team member will have in relation to the deliverables and milestones outlined in the schedule. Additional stakeholders may be identified throughout the project and should be added accordingly as they are identified.

d. Project Schedule

The project schedule outlines the target dates for completing various phases of the analysis project from start to finish. Common components of a project schedule include:

- Descriptions of the analysis phases (or chunks of work).
- Milestones, or the results of the work in each phase.
- What tangible products should result from the process (deliverables).
- Who will perform the work within each phase.
- What is the timeline for the performance of each phase, including start and finish date.

i. Phases

Each project is slightly different, but the most common, broad *phases* of the analysis are alignment, data collection, data analysis, and the report. These phases are not always linear, as an analyst may need to return to a prior phase as new information, or gaps are uncovered. For example, data collection may be completed initially, but then analysis reveals that there is some information that is missing or needs to be augmented, so the project moves back to data collection. Another example is that data collection and analysis occur twice for an analysis that includes both a JTA and a Curriculum Comparison. These common phases may need to be broken down more for a large project. The important point is that the work should be organized into logical "chunks" so that the analysis team and client know all the work that needs to be done to complete the analysis.

NOTE: If using an agile project strategy, the phases will be broken down into sprints. A sprint is typically 1-3 weeks in duration with a particular deliverable developed by the end of the sprint (Torrance 2019).

ii. Milestones

A milestone is a specific point in the project that represents completion of a large unit or "chunk" of work. Milestones typically occur at the end of each analysis phase, but phases may contain more than one milestone. Completing milestones is how progress is measured in an analysis project. Milestones generally contain several key tasks within them. Milestones may also correspond with deliverables. Some examples of milestones:

- Alignment complete. Key tasks: review RFA, review early extant data, conduct alignment meeting, final approval of POAM.
- A valid task list complete. Key tasks- review extant data, interview SMEs, conduct a task validation meeting.
- Performance support interventions identified. Key tasks: Collect DIF data, run DIF algorithm.

iii. Deliverables

Deliverables are simply the tangible items that are provided to clients and other stakeholders throughout the analysis process. Providing deliverables throughout the process allows participants to review work, spot errors, voice questions and concerns, and make any course corrections early. For analysis projects, common deliverables include:

- Plan of Action and Milestones.
- Identified gaps and root causes.
- Final, validated task list with performance support recommendations.
- Draft of findings and recommendations.
- Final report.

e. Quality Assurance

This section is either included in the roles and responsibilities table or called out separately. If the client has identified specific individuals or stakeholders that will be responsible for reviewing project deliverables for formal acceptance developing this section is a best practice. This section clearly identifies which deliverables each stakeholder is responsible for reviewing and approving as final.

f. Project Assumptions and Constraints

The POAM should include any assumptions specified by the client or made by the analysis team in this section. Section 3.3, Step 5 defines assumptions and constraints. Projects are constrained by schedule, scope, and resources at a minimum. This section of the POAM discusses specific factors related to these categories. Rank these categories as most constrained, somewhat constrained, and least constrained. Explain in detail any additional constraints that fall outside these categories here as well.

g. Risk Assessment and Contingency Planning

Given the project's nature, numerous risks could impact it, some of which may be mentioned in the project assumptions and constraints. While not all risks are foreseeable, the analyst should identify likely project risks based on the current stage of planning. Describe risks one at a time in this section, evaluate their likelihood of occurrence, assess their impact on the project if unaddressed, and outline contingencies to prevent or address the risk.

h. Change Management

This section explains how to address changes to the POAM and provides guidelines for version control of documents as they are developed, shared, and electronically stored. It also includes a table to track approved changes. Once a change is approved, it is added to the table, and the POAM is resubmitted for re-approval. All sections of the POAM affected by the recorded change are revised before resubmission.

i. Stakeholder Communication Strategy

The success of any analysis depends on how often the analysis team engages with stakeholders. A routine engagement plan prevents stagnation or lag time and allows the team to identify and mitigate potential roadblocks raised by stakeholders early. Different stakeholders may require different levels of engagement. Evaluating stakeholders based on their level of interest in the project and the amount of power or influence they hold can be helpful. One method to conduct a stakeholder evaluation is to use a stakeholder matrix, such as the one in Figure 4 below.

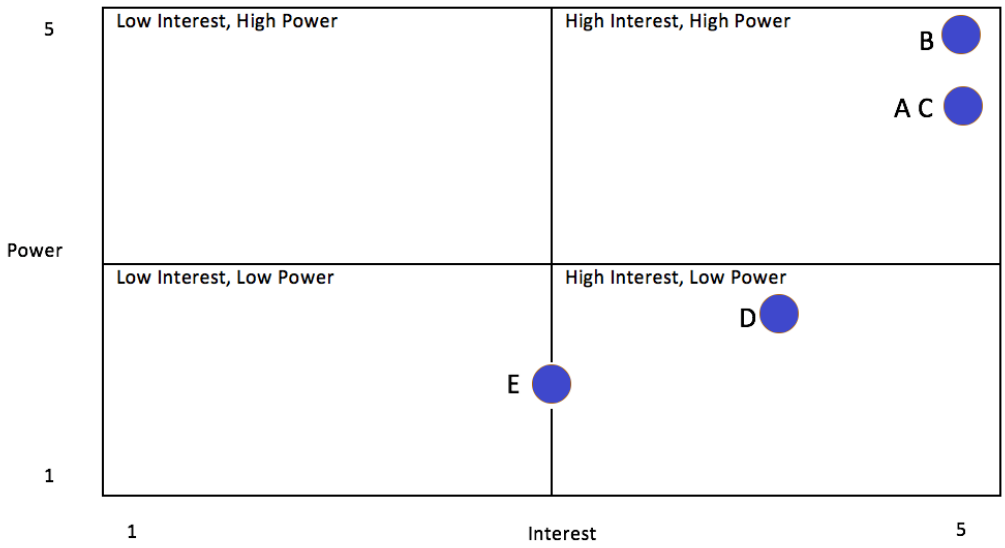

Figure 4. Stakeholder Influence and Interest Matrix.

The blue dots represent different stakeholders assigned identifiers A through E. Power and interest are rated on a 1 to 5 scale, determining each stakeholder's placement on the matrix. Moving from right to left on the power scale, stakeholders in the High Interest, High Power quadrant require the highest level of continuous engagement. Stakeholders in the Low Interest, High Power quadrant require strategic engagement during major decision points but less engagement related to the project's progress. Moving from right to left on the interest scale, stakeholders in the High Interest, Low Power quadrant require near continuous visibility on the project but are unlikely to be involved in decision-making events. Stakeholders in the Low Interest, Low Power quadrant may hinder the project if their participation is required. Analysis teams should gradually push low-interest, low-power stakeholders towards high interest by gaining their buy-in through carefully coordinated engagements that highlight the project's importance and their role in its success.

NOTE. A stakeholder matrix is not required to be included in the POAM. It is provided above as a tool to organize strategies for engagement with different types of stakeholders.

j. POAM Approval

This section includes a place for all project stakeholders to electronically sign the POAM, indicating their review and acceptance of the project as proposed. Provide at a minimum, signature lines for the lead analyst, project manager (e.g., FORCECOM Branch Chief, PSB Chief, or Training Officer and/or equivalent), the primary client representative, and Training Manager. If multiple program offices are considered clients, designate a client representative for each program. Add additional signatures as determined by the client.

NOTE: After customizing the POAM to meet the project's needs and filling it out to the best of their ability, the analysis team is ready to move on to final alignment. This step involves filling in gaps in the plan and seeking final approval to proceed with the project. Step 8 should be completed concurrently with drafting the POAM and preparing for the alignment meeting. Neither document initially drafted in Step 8 needs to be fully complete by the meeting, and this should not delay the alignment process.

Step 8: Draft the Initial Data Collection and Evaluation Plan

Like the POAM, a data collection plan document is only an initial draft at this stage. As the project plan comes together, the analyst should be able to start identifying what information needs to be gathered to conduct the analysis and outlining the where and how behind gathering it. Drafting the data collection plan early helps analysts identify, before the final alignment meeting, whether they need approval to access certain data or if they must obtain data from a particular stakeholder. Reviewing the draft data collection plan with the client during the final alignment meeting helps drive discussions related to site visit needs, promoting survey participation (if applicable) and help identify areas upfront where data triangulation may be lacking. The analyst should finalize the data collection plan shortly after the alignment meeting but may modify it as the analysis progresses if new information needs to be collected.

NOTE: The client and Training Managers are critical stakeholders in identifying relevant data to assist with the analysis. A full overview of data collection methods and drafting a data collection plan is in Section 3.4.

An example evaluation plan is found HERE. The client has either defined some of the KPIs on the RFA received during the scoping phase, or after working through both pre-alignment stages, scoping and project planning, the analyst may start to develop KPIs organically based on gap presented by the client. Discuss and validate any client-provided or analyst-developed KPIs noted at this stage during the final alignment meeting. Consult the client again if additional KPIs are discovered as the analysis progresses. Drafting the evaluation plan early helps analysts better define project success, influences what data is collected, and clearly identifies the changes in behavior or outcomes needed to achieve the client's desired state. The analyst should reference the evaluation plan throughout the project when crafting questions for any data collection effort and especially when developing recommendations. Amend it whenever a new measure of success related to the gap is discovered. The evaluation plan moves from draft to final at the conclusion of the project and is discussed during the final project out brief.

NOTE: Treat the evaluation plan as a living document, since it is common to discover additional KPIs throughout the analysis. Section VII of this SOP provides a full overview of the analysis evaluation process.

Step 9: Prepare for the Final Alignment Meeting

Submit the draft POAM and the initial version of a data collection and evaluation plan to the Training Manager for review when ready. At this time, the Training Manager will concurrently schedule the final alignment meeting with the client. The analyst may begin drafting the meeting agenda, especially focusing on agenda items that cover any section of the POAM draft that is incomplete, as well as setting time for discussion topics related to the initial draft data collection and evaluation plans. Although not required, an Alignment Checklist may help analysts identify missing information to discuss during the final alignment meeting.

3.3.3 Final Alignment Phase

Much of the work done in the scoping and project planning phases has been done less formally through pre-alignment meetings and in conversations between the client and FORCECOM. When most of the information about the project has been collected, it is time to hold a final alignment meeting with all the key stakeholders, and to codify the discussion in a formal POAM that is signed

by the stakeholders outlined in the POAM Approval section. The POAM is usually the first major deliverable of an analysis project.

Step 10: Conduct the Alignment Meeting

The final alignment meeting usually includes the analysis team, the project manager, the Training Manager, client(s), and any other relevant stakeholders who will provide direct assistance to the project. The format of the meeting is straightforward: walking the client through the information gathered from the scoping and project planning steps as captured in the POAM and filling in any gaps along the way.

Step 11: Finalize the Draft POAM Based on Meeting Results

If any of the scoping or project planning information changes during the alignment meeting, finalize the document so that all the information in the document matches the discussion from the meeting.

Step 12: Route the POAM for Signatures

The analysis team transmits the alignment agreement back to the Training Manager (pending changes). The Training Manager then pushes the document through the chain identified in the POAM approval section and returns it once all signatures are obtained.

NOTE: If a POAM signatory requests a modification before providing their signature, the Training Manager and analysis team must review the change to determine if it will impact the project plan. If the change is expected to alter the project timeline, discuss it in a follow-on alignment meeting before proceeding.

Step 13: Maintain or Update Document(s) as Needed

The POAM, data collection, and evaluation plans are dynamic documents. As the analysis progresses, the problem statement may be disproved or found to be only partially representative of the entire issue. Additionally, new needs or opportunities may be discovered that could impact the timeline if fully analyzed. If significant changes deviate from the information in the POAM, update the document and notify all signers.

3.4 Data and Data Collection Plans

3.4.1 Importance of Data and the Data Collection Plan

A data collection plan outlines both the sources of necessary data, and the methods used to gather it. It is important to note that a data collection plan is not a static document. The POAM usually includes a high-level data collection plan, but as the analysis progresses, the plan will likely need to be adapted. Some data sources may turn out to be irrelevant, unavailable, or new data previously not considered may be required.

A basic definition of data is facts and statistics collected for reference or analysis. Good data is the foundation of a good analysis. Data alone will not provide solutions; it needs to be sorted, processed, organized, and analyzed. Analysis conclusions and recommended solutions are only as strong as the data that supports them. The data collection plan ultimately communicates to the client what sources of data the project will need, how to obtain that data, what information will be gathered from each source, and a contingency plan for missing data.

There are two common problems with data and data collection that every analysis should avoid: not collecting enough data and not collecting the correct data. A data collection plan tackles these two issues. This section describes the three basic steps to building a data collection plan:

1. Identify the appropriate sources of data
2. Select the correct method to collect the data
3. Build a contingency plan

3.4.2 Common Considerations

There are several factors to consider before building any data collection plan, including:

- Budget: Is there funding available to support your selected method for acquiring data such as direct observations or in-person focus groups? Is it possible to visit all the different types of units included in the analysis?
- Size of the population, and necessary sample size for surveys: Is it possible to meet those targets, and how much effort will it take?
- Time available to collect data: Some methods are more time-consuming than others.
- Tolerance of risk for high-quality data: Do the lower fidelity methods meet the needs of the analysis? If data methods need to change mid-project, will there be resources available to do that?
- Balancing qualitative data with quantitative data: qualitative data is interpretive, descriptive perception-based information, while quantitative numbers-based data is measurable and countable. Both have value and when used together increase the veracity of analytical work.

3.4.3 Identify Data Sources

Some of the most common sources of data for analysis projects include:

- **Extant data**: This is anything written about the subject matter, including previous analysis, white papers, COMDTINST, policy letters, tech manuals, statistics, evaluations, academic data, financial data, or curriculum outlines. Extant data is usually applicable for any type of analysis and is frequently the first data that the analyst examines in the project.
- **Authoritative data systems**: Any system where data is stored and can be accessed to quantify or qualify a problem. Systems *previously*/currently include the Coast Guard Business Intelligence (CGBI), Asset Logistics Management Information System (ALMIS), Marine Information for Safety and Law Enforcement (MISLE), eMishap Report System, Financial System Modernization System (FSMS), Training Quota Management System (TQMS) and Direct Access (DA) **and/or their equivalents**. Many of the common data systems can be found in the Coast Guard's Pixel Dashboard, by navigating to the Links section. Analysts may require individual accounts and specific permissions to access data from a given system. A client or stakeholder may serve as a proxy for gathering data more rapidly, especially if they already have access to the system and are well versed with retrieving the data needed.
- **Accomplished Performers (APs)**: Provide personal insight into superior performance because they are currently performing (or have very recently performed) the job in an

exemplary fashion. APs are usually identified by the client and are recognized as top performers in the field who are experts on HOW it is done.

- **Subject Matter Experts (SMEs)**: Provide programmatic or organizational insight regarding the analysis topic. They are policy experts, understand the risks related to analysis area of focus, and are experts on WHY something is done. SMEs may act as technical advisors for any type of analysis, especially those that focus on complex or nuanced performance.
- **General population**: This is a wider group of people who perform certain tasks relevant to the analysis topic at the journeyman or apprentice level. While some analysis strategies focus on obtained information from only APs and SMEs, novice performers can provide valuable firsthand insight on the barriers to performance less experienced personnel are facing.

NOTE: While these are the common sources, any project can use any appropriate source of data as needed. No two projects are alike; each project will use different sources of data.

3.4.4 Multiple Sources

There are two important concepts to keep in mind when choosing data sources: using multiple sources and triangulation. The two concepts are linked and are a critical part of ensuring valid data.

Analysts should choose sources of data that will complement the other sources, but that will also shore up gaps between data sets and confirm the accuracy of the data already collected. Multiple sources can occur either (a) within each data source or (b) across multiple distinct data sources.

- Examples of multiple sources **within** data sources:
  - There can be more than one source of extant data, e.g., both COMDTINST and previous analysis, or Level 3 statistics combined with white papers.
  - AP interviews or focus groups, which are two types of structured interviews, can be held with participants from multiple Sectors, or from the Gulf, Pacific, and Atlantic Coasts, or from different types of cutters to determine geographic or unit specific variances in data.
  - Surveys which target different groups on the same issue can be cross-referenced to compare general population results against specific target population results.
- Examples of multiple sources **across** data sources:
  - Combination of interview data responses with direct observation or survey data to identify consistencies or inconsistencies.
  - Combination of SME interviews and COMDTINST or other manuals to compare what is written in policy with how it is interpreted or applied in the field.

3.4.5 Triangulation

Triangulation of data is only possible with the use of multiple data sets in an analysis. Triangulation is the gathering and use of more than one piece of data to substantiate a performance gap or an opportunity for improvement. Data triangulation also plays a role in crafting a well-supported recommendation to develop a potential intervention. Data cannot be properly triangulated if it relies on only one source. Every effort is made to draft a data collection plan that supports a robust

and diverse look at all the available data. Triangulated data drives validity. Here are four examples of methods used in research to triangulate that can also be applied to analysis projects (Campbell et. al., 2018):

- **Data triangulation:** Using data from different times, geographic locations, and target groups.
- **Analyst triangulation:** Including multiple analysts in collecting or analyzing data.
- **Theory triangulation:** Using varying perspectives such as testing multiple hypotheses during a Diagnostic FEA.
- **Methodological triangulation:** Using different analysis methodologies and tools from this SOP and industry to approach the problem statement.

3.4.6 Select the Data Collection Method

An analyst can choose any appropriate method to collect data based on the needs of the client and the project itself.

Extant Data Review. A best practice is to keep a log of any extant data source reviewed akin to an annotated bibliography. In this log, analysts should flag information for each document which defines any aspect of current or desired performance. Analysts can collect this information from multiple sources such as policies, previous analysis, course materials, technical manuals, and financial data, which they may need to reference again throughout the analysis.

Pros A good way to gain a grasp of the world of work and context around tasks and a starting point for building task lists when policy and other documents define responsibilities and requirements.

Cons It can be difficult to discern whether a document is out of date, has been superseded by other guidance, or determining which guidance is valid when conflicts arise between extant data sources. Coordination with the client to validate extant data may be necessary.

Direct Observation. Watching performers do the job directly.

Pros Best way to see actual performance, observe environment, and see obstacles. The highest quality data.

Cons Can be difficult to arrange especially for high operational tempo environments, requires travel, expensive and time consuming.

Interviews. Discussions with APs, SMEs, etc. with a pre-determined set of questions.

Pros Can be done in a variety of ways (phone, live, Teams, etc.). Provides a good depth of information, can be tailored, or expanded as the discussion evolves. Generally high-quality data.

Cons It is important to be consistent from interview to interview, at least with the primary set of questions. Quality of data depends on the quality of the questions. Can be time consuming.

Focus groups. Small groups of people who can discuss the subject from a variety of viewpoints.

Pros Participants work off each other, explore ideas and can come to consensus. Can be used to both provide and analyze data. Very efficient. Generally high-quality data.

Cons It is important to make sure the participants reflect the whole population. Requires highly skilled facilitation. Participants need to understand the purpose of the focus group to keep the group on task. Can be time consuming.

Surveys. A set of primarily close-ended questions, typically more quantitative data. Usually sent to a large target population, or the general population.

Pros A means to get a large amount of information from a large amount of people, or a spread-out population. The data analysis is often automated (based on survey platform).

Cons At risk for diminishing value due to low response rates. The quality of survey data varies greatly. Validity of the survey results can be questioned if sample size of respondents is not a representative sample of the target population.

NOTE: There are many ways to build effective surveys with varying question types- ranking, Likert scale, multiple choice and/or free-from answers. Contact the data and analytics team within FC-Tace for assistance with survey development.

Questionnaire. A set of usually more open-ended questions with a focus on qualitative data. A viable alternative to a structured interview. Conduct questionnaires as a standalone engagement or integrate them into a survey.

Pros A means to obtain more detailed qualitative information, such as reactions, perceptions, or concerns from a spread-out population.

Cons At risk for low response rates. The quality of data varies greatly. Interpretation of the results is often manually analyzed.

3.4.7 Build a Contingency Plan

A contingency plan is a back-up proposal if the ideal data or data source is not available. Some examples:

- If it is impossible to conduct direct observations, then interviews in the office may serve as a substitute.
- If live interviews are impossible, an analyst may need to consider virtual or phone interviews, or even a survey.
- If a SME or AP does not have the information needed, additional contacts may need to be reached to uncover the information necessary to perform a data-driven analysis.

NOTE: It is not uncommon for individuals to be misidentified as APs or SMEs. Analysts in collaboration with the client should agree on requirements up front that make it clear what level of programmatic expertise or practical experience a potential interviewee must have to be relevant and helpful to the analytical process. Adjust these expectations based on the maturity of the program, mission, or task being analyzed.

SECTION IV: Analysis Methodologies

Introduction

This section provides basic methodologies for conducting needs assessments and formal analyses. Before selecting an analysis, it is important to draw a distinction between needs assessments and formal analyses.

Needs assessments provide a more focused and rapid examination of a performance gap or opportunity for improvement. For more information, refer to the Analysis Determination Table found HERE.

There are numerous types of needs assessments and analyses used under the umbrella of HPT. This section identifies the most common types conducted in support of improving the United States Coast Guard (USCG) mission execution, but it is not meant to limit an analyst to only these approaches.

The terms need assessment and analysis are often used interchangeably in industry. For FORCECOM purposes, assessments are more tightly scoped and completed more rapidly, while analyses take a broader look and inherently require more time and resources.

The methodologies addressed in the following section are:

- Training Needs Assessment (TNA)
- Competency-Based Needs Assessment (CBNA)
- Strategic Needs Assessment (SNA)
- Front End Analysis (FEA)
- Job Task Analysis (JTA)
- Occupational Analysis (OA)
- Workforce Requirements Analysis (WRA)
- Rapid Analysis (RA)

Regardless of the analysis type conducted, the following HPT principles must be followed:

- Use a systematic approach to identify root causes.
- Only conduct analysis based on validated needs.
- All analyses are data driven.
- All interventions/recommendations for solutions are supported by findings.

Analysis projects are often complex and involve facets of various types of analyses. For example, it may be useful to combine elements of an SNA into an FEA. Careful and deliberate discussions with the members of the team are crucial to completing the study and delivering a product the customer can use to improve performance.

4.1 Needs Assessments

A Needs Assessment is a versatile analytical method that can be tailored to the known or presumed nature of the gap and the needs of the client. There are three common types of needs assessments:

- **Training Needs Assessment (TNA)** – Focuses solely on validating or uncovering skill and knowledge gaps that impact performance and can be addressed with training.
- **Competency-Based Needs Assessment (CBNA)** – Incorporates a skills and knowledge assessment like a TNA but also includes an investigation of behavioral skills and attitudes factors which impact performance.
- **Strategic Needs Assessment (SNA)** – Focuses on identifying the gaps between promulgated or notional Coast Guard strategies and actual performance at the individual, unit, programmatic and/or organization-wide level(s).

For especially complex issues, it is common to include aspects of all three needs assessment types together.

4.1.1 Training Needs Assessment

A Training Needs Assessment (TNA) is a targeted methodology which is used to determine if a specific skill and knowledge gap exists. Training is only used to close identified gaps in skill and knowledge that directly impact performance. This approach does not assess other barriers to performance. Unlike a JTA, TNAs are typically not used to assess an entire world of work but can be expanded to do so as necessary. TNAs generally focus on a subset of performance, or a new major task(s) being added to a specific job or position. Considerations for selecting a TNA as the primary analytical approach:

Uses Developing training plans or course development. Implementing focused training modules vice a full course, to support new jobs requirements, or integration of new technology.

Pros Assures training is linked to actual learner's needs. Easiest to assess quickly and implement.

Cons Has limited focus; does not consider all factors that may affect job performance.

A typical TNA includes the following phases:

- Phase 1: Alignment
- Phase 2: Task Identification
- Phase 3: Draft Task List
- Phase 4: Confidence and Consequence Assessment
- Phase 5: Finalize Task List
- Phase 6: Report

Phase 1: Alignment

Step 1. Section III outlines the steps for the alignment meeting. Develop the project scope to clearly define the purpose and objectives of the Training Needs Assessment. Determine a key area of focus defined by the client where a skill and knowledge gap persist.

EXAMPLE

High error rates when entering vessel boarding inspection results into a database or a failure to perform a task which resulted in a mishap. Then determine the program's specific training goals, if available, the client desires to implement to close the alleged skill and knowledge gap.

NOTE: This step is complete when the analyst can state the problem or opportunity the training need assessment will focus on, can define the current state of performance, and summarize the initial program training goal(s) intended to aid learners in reaching the desired state of performance.

Step 2. Draft Alignment Agreement containing a POAM: Submit for review and final client approval.

Phase 2: Task Identification

Step 1. Analyze available data: Review policies, procedures, and any other information used to identify the task or tasks in detail. Limit this search to the task(s) the client identifies as having a performance gap caused by an alleged skill and knowledge deficit. Interview program subject matter experts and program identified stakeholders to further identify knowledge or skills the workforce needs to perform specific tasks identified.

Step 2. Identify performance objectives and learning objectives: List out each based on the review of extant data and program level stakeholder interviews. The goal of this step is to map out what a performer needs to know (learning objectives) and what the learner needs to do (performance objectives) to effectively perform the individual task or complete the broader achievement.

Step 3. Conduct a performance objective and learning objective cross walk: Determine need-to-know versus nice-to-know information by aligning learning objectives with the performance objectives. Any learning objective that cannot be directly tied to the completion of a performance objective should be removed from this list and reported separately. Consider learning objectives that are successfully linked after performing this crosswalk as the required prerequisite knowledge, tied to the performance of the associated task.

NOTE: This step is what differentiates a TNA from a JTA. A JTA focuses on performance objectives and typically discards tasks that are knowledge-based learning objectives. A TNA retains data related to performers' acquiring knowledge and recalling specific information to help with the design and development of informational briefs, job-aids, and "pre-arrival" course materials completed through a multitude of modalities.

Phase 3: Draft Task List

Step 1. Consolidate performance and learning objectives into a draft task list: A task list typically takes the form a table, identifies the major accomplishment first and then outlines the tasks below it that if completed achieve the major accomplishment. This presentation of major accomplishments

and related tasks is a performance hierarchy. A performance hierarchy may not be necessary in cases when the alleged knowledge or skill gap relates to only a specific task. If Step 3 of Phase 2 reveals that a task requires pre-requisite knowledge, note it directly in the task list adjacent to the task with the requirement.

Step 2. Validate the draft task list with the client: Present the draft task list to the client for review. This step serves as a check to ensure all tasks identified logically connect to the desired performance. Once validated, the draft task list and identified pre-requisite knowledge will form the basis for gathering information from the field to assess the readiness to perform a new task or assess the current performance level of an existing task. Use a task detailing worksheet when validating tasks with SMEs/APs/Program. Example can be found HERE.

Phase 4: Confidence and Consequence Assessment

Step 1: Draft the survey and/or interview instrument: An analyst will begin to draft the questions used to gather information from supervisors, and performers out in the field. The goal of this step is to craft questions that will validate or invalidate a perceived skill and knowledge gap by gathering feedback from actual performers who currently conduct or expected to conduct in the future the identified tasks.

Readiness questions may lead to determining a performer's need for training on a 1-5 scale, ascertaining the consequence of error on a 1-5 scale, and open-ended questions soliciting specific training needs related to the task itself. **Confidence** (one's belief in their ability to accurately perform a task without additional training) and **Consequence** (the result of individual error(s) occurring during the performance of the task) scores should be combined and averaged to provide a score for each task. These scores will be used for prioritization purposes in Phase 5, Step 3. It is also recommended that surveys include a catch all question for performers to identify a task or tasks they perform but are missing from the survey that they have low confidence in performing without additional training.

Confidence without additional training

	Very Low	Low	Average	High	Very High	Do Not Perform
Operate Forklift	1	2	3	4	5	N/A

Consequence of Error

	Very Low	Low	Average	High	Very High	Do Not Perform
Operate Forklift	1	2	3	4	5	N/A

Example Open-Ended Questions

Describe your experience with learning how to operate a forklift for the first time. What must you know how to do?

What is the most difficult task to learn related to forklift operation?

What type of training have you received to perform this task?

Step 2: Administer chosen instrument to target audience: The analyst schedules interviews and/or activates the survey for a specified period. Review data as it is collected to analyze trends and identify areas of significant skill and knowledge concerns.

NOTE: After reviewing initial survey results, follow up surveys or interviews may be necessary to assess specific tasks more deeply that the data indicates are especially challenging for the field.

Phase 5: Finalize Task List

Step 1: Revise draft task list based on initial survey findings and follow-ups: If feasible, modify the draft task list with direct support from a client representative. At this stage, modifications to the draft task list may be necessary to synchronize program level expectations with actual field performance of a task. For example, completing the field-level inquiry in Step 2 of Phase 4 may reveal tasks performed in the field that the program does not desire, prompting their removal. Conversely, the inquiry may reveal a new task or best practice not included in the draft task list, and the client agrees to incorporate it into the final task list to standardize and improve field performance.

NOTE: Addressing best practices and discontinuing undesired tasks may require simultaneous action through training and policy development interventions

Step 2: Review existing training (if applicable): Analysts should review existing training and performance support resources and compare the content against the final task list and survey data which indicated specific high consequence skill and knowledge deficits. The review may include existing curriculum outlines, actual training module content, job aids and course Level 1 and Level 3 survey data as applicable. Analysts should make notes of missing or inadequate training interventions to highlight in the report.

Step 3: Prioritize training needs: Based on the tasks ultimately identified, some, all or none of the tasks may require some level of training support to perform effectively. In cases where the training need exceeds the available time or resources, analysts should work with clients to focus on tasks with a Confidence and Consequence average score of 3.5 or less. In all cases, analysts should specifically prioritize training development for tasks with low confidence (less than 3) and high consequence (3 or greater). Tasks with pre-existing training may also impact prioritization, as modifying existing training may require less resources than developing new training.

Phase 6: Report

Step 1: The steps for preparing the report are in Section VI. Consolidate the final task list into a report with a description of each skill and knowledge gap discovered during the assessment. Typical report contents for a TNA will include:

- Table of Contents
- Executive Summary
  - Background
  - Request
  - Top 3 Findings and Recommendations
- Project Overview

- Alignment
- Project Roles
- Methodology
- Extant Data Review

- Performance and Learning Objectives
  - Final Task List
  - Pre-requisite Knowledge Requirements
  - Confidence and Consequence Assessment Results
- Findings and Recommendations
  - Skill and Knowledge Gaps #-## (Enumerate each gap found separately)
    - Finding
    - Rationale
    - Recommendation
- Future Actions
  - Next Steps
  - Training Development Prioritization (Based on Confidence and Consequence Scores)
- Appendices
  - Appendix A – Abbreviations and Definitions
  - Appendix B – Request for Analysis
  - Appendix C – Alignment Agreement
  - Appendix D – Data Collection Results (Interview, Observation and/or Survey Summaries)
  - *Additional appendices added as required.

NOTE: If rapid development of identified training needs is desired, partner with an instructional designer to complete this assessment. Break down only the tasks identified as requiring training support into performance steps and denote any relevant pre-requisite knowledge at the step level as applicable. These steps guide an instructional designer in determining which lessons, individual modules, or other instructional interventions—such as job aids or knowledge assessments (tests)—need to be developed to establish a baseline for the learner to perform the task effectively.

4.1.2 Competency-Based Needs Assessment

Competency-Based Needs Assessments aid analysts specifically with understanding what types of soft/human or executive skills support superior job performance. Analysts use this data to create more wholistic performance support and can even aid in assignment and selection screening

criteria, policy development and process guides. Most HPT-driven analyses and assessments evaluate a job or world of work from a performance perspective, systematically breaking down jobs into individual tasks. Analyze these tasks further to identify the actions and criteria needed to successfully perform the task. This common approach to assessing performance at the task level can overlook supportive knowledge, skills, and attitudes that, while not essential for completing the task itself, still influence performance. This collection of supportive traits or skills are referred to as *competencies* and when discovered and developed can transform less than optimal performance into superior performance. Considerations for selecting a CBNA as the primary analytical approach:

Uses Measure proficiency levels of individuals. Develop tailored performance management systems.

Pros Determines qualities (knowledge, skill and attitude/behavioral) that distinguish average from superior performers. Provides qualitative and quantitative data related to current and future predictors of job performance.

Cons Requires good project management. May be costly depending on the tools used to assess behavioral factors. Requires candid self-assessment data. Requires participation of accomplished, intermediate, and less experienced performers to distinguish performance impacting factors.

NOTE: Complete a CBNA as a standalone analysis or pair it with other analysis or assessment types when a client wants to identify competencies alongside job- and task-specific skill and knowledge requirements.

EXAMPLE

A resident 'C' School has been analyzed extensively, and there is high confidence the last JTA is right on the mark. The analyst reviews evaluation data which indicates the course has the right content, sequenced appropriately, and should be exactly what a learner needs to perform to expectations. Yet, after graduation, performers are still not quite meeting expectations. An analyst or a client may then ask themselves, "If the course is effective, why is there still clearly a barrier to performance"? The answer could be an underlying competency a performer needs, in addition to task specific skills and knowledge which enables performance to meet or exceed expectations.

A typical CBNA includes the following phases:

- Phase 1: Alignment
- Phase 2: Conduct Skill, Behavior, Attitude Interviews
- Phase 3: Develop Competency Dictionary
- Phase 4: Develop Competency Model
- Phase 5: Benchmark Workforce
- Phase 6: Report

Phase 1: Alignment

Step 1: Perform the alignment steps found in Section III. For data collection planning purposes, the primary tools for this type of assessment are typically interviews, surveys or questionnaires. Further, stakeholder identification is an especially critical focus area of alignment for this type of assessment. It is important to target and develop questions not just for the performer, but also supervisors and other related stakeholders that benefit from the job being performed. Deliberately aligning on data triangulation helps overcome self-rating bias, which arises when an analyst relies solely on interviews with target performers. Lack of triangulation in this approach may skew the data and produce an incomplete picture of the most impactful skills, knowledge, and behaviors.

EXAMPLE

A Competency-Based Needs Assessment was conducted for FORCECOM Training Managers. The analysis team developed questions first to gather data from performers serving as Training Managers currently. The analysis team then tailored the same questions to survey the following stakeholders: Training Manager Supervisors, TRACEN Training Officers, Rating Force Master Chiefs, and the Education and Training Management Quota Command (ETQC). These stakeholders were identified as either key benefactors of TM job tasks being completed, or key partners due to the collaborative nature of many of the TM tasks. Together, interviewing this entire group yielded the identification of 5 core competencies: Project Management, Communication, Technical Knowledge, Interpersonal, Advocacy/Liaison.

NOTE: The main difference with alignment on a CBNA compared to other performance analyses and assessments is that a CBNA focuses on a different type of skill and knowledge. A CBNA is best conducted after job and task related skill and knowledge have already been evaluated. Complete a CBNA in conjunction with a Job Task Analysis (JTA) to develop a more comprehensive training and performance support strategy. The main question a CBNA seeks to answer is "What skills, knowledge, attitudes, beyond those already identified as necessary to perform job-specific tasks, contribute to superior performance of a job overall?".

Phase 2: Conduct Skill, Behavior, Attitude Interviews

Step 1: Draft survey questions that are intended to illicit responses that aid in the identification of overarching skills, knowledge, and attitudes that are employed overarchingly to perform a particular job. Reuse questions developed for target performers with slight modifications to gather information from stakeholders and supervisors. Keeping questions phrased similarly between target audiences will help with trend analysis.

Target Performer Questions

What are the five main responsibilities of your job?

What skills and abilities do you need to accomplish these main responsibilities?

What are some of the skills you need to employ that are not listed in your job description?

Are the responsibilities and expectations of your job clearly defined? If so, where is this documented and by who?

Think about a day where a task you performed was successful (or unsuccessful). What skills did you use to achieve that success (or what skills did you need that would have made it successful).

Stakeholder Questions

What skills and abilities do the highest performing members you interact with in this position portray?

What expectations do you have when interacting with someone in this position?

How do members in this position help you with your job?

What differences in skill do you see between someone newly reported and someone closer to tour completion?

Step 2: Review survey/interview questions with client and make modifications as necessary. Once the client approves all questions, proceed with following the data collection plan, scheduling interviews, releasing the survey for the specified period, etc.

Phase 3: Develop Competency Dictionary

Step 1: Review data collection results and gather skills, knowledge and attitudes identified. To identify factors that may have a more significant impact on performance than others, it is a best practice to record frequency of each factor noted across all respondents.

Step 2: Organize the factors using an affinity diagram, to group similar skills, knowledge, and attitudes together, and define the category these skills fall under. After organizing the skills, it is important to then define them in context of the position. Do not use general definitions. In the example below (Table 1), three competencies obtained from interviews, Liaison, Planning and Time Management, were grouped under the dimension of Project Management Skills. Similarly, four other competencies noted in interviews were identified as communication skills, defined, and organized accordingly. When all skills, knowledge and attitudes have been organized this phase is complete. Capture this information in the report as an appendix.

1.0	Project Management	**Ability to use skills to execute tasking (this can include items like Occupational Analysis, Curriculum Management, Workgroup participation, etc.) in order to achieve training goals in the Coast Guard.**
1.1	Liaison	Ability to form a working relationship between Rating Force Master Chiefs (RFMCs), TRACENs, Programs, FORCECOM, Working Groups, and all others that interfere with the training system.

1.2	Planning	Develop plans, prioritize, organize, and manage resources associated with the training system in order to accomplish training goals within a defined timetable.
1.3	Time Management	Ability to plan and exercise conscious control over the amount of time spent on specific activities, especially to increase effectiveness, efficiency, or productivity. The TM is required to balance multiple projects at the same time.
2.0	Communication (written and verbal)	**Ability to communicate effectively between TRACEN, Programs, RFMCs, and FORCECOM.**
2.1	Public Speaking Presentation Skills	Ability to comfortably present knowledge of project information, FORCECOM organization and policy to a wide variety of audiences, as well as alter presentations to fit the audience.
2.2	Interpersonal Relationships	Ability to foster and maintain positive working relationships with Training Officers, Rating Force Master Chiefs, civilian employees, Programs, and others.
2.3	Assertiveness	Ability to represent "customers" and FORCECOM's interests in the face of challenges and criticism and managing conflicting viewpoints.
2.4	Responsiveness with Communications and Deliverables	Effectively communicate results of work to all stakeholders and customers in a timely manner.

Table 1. Affinity Diagram Example.

Phase 4: Develop Competency Model

Step 1: The completion of Phase 3 provides all the information necessary to develop the competency model. In essence, a competency model is a simplified view of the competency dictionary, where the dimension or category definition carries over, but the individual competencies are just named without their definitions. Table 2 below is a typical method to convey a competency model within a CBNA report.

Dimensions	Competencies/Core Clusters
	TM
1. Project Management	Liaison
	Planning
	Time Management
	Politics
	Funding/Budget
	Allocations
	Priority Setting and Identification
	Organizational Skills
	Teamwork
	Customer Service
	Understanding of Supervisor's Expectations

2. Communication (Written and Verbal) – Ability to communicate effectively between TRACENs, Programs, RFMCs, and FORCECOM	Public Speaking Presentation Skills Interpersonal Relationships Assertiveness Responsiveness with Communication and Deliverables
3. Technical Knowledge – Knowledge of Coast Guard databases, computer programs, and methodologies/processes	**3.1 Computer skills** Direct Access Coast Guard Business Intelligence (*or equivalent*) Electronic Personnel Allowance Lists Training Management Tool Quota Management System CG Portal Microsoft Office Programs Training and Quota Management Center Training Course Catalog SharePoint T-Pax ERP

Table 2. Competency Model Example.

Step 2: Review the competency model with the client to validate that all job-relevant competencies have been identified. Once approved, finalize the model.

NOTE: Depending on the needs of the client, it may be appropriate at this stage to benchmark the workforce using the approved competency model. If desired, use interviews or a survey to gauge the target workforce's degree of confidence and ability with each competency. Use this information to develop an intervention strategy that enhances particularly impactful competencies. If the client only desires the competencies to be identified, skip Phase 5 and proceed to producing the report.

Phase 5: Workforce Benchmarking

Step 1: Develop questions related to the competencies identified. Reengagement with APs will assist with further validating the competency list and help prioritize the most impactful competencies and/or competencies which require the most development assistance to improve performance.

Competency Criticality Questions

	Not Important	Marginal	Average	Important	Critical
Competency X	1	2	3	4	5
Competency Y	1	2	3	4	5
Competency Z	1	2	3	4	5

Example Open Ended Questions

What aspects of your job require more guidance or support?

Of these competencies identified, which do you feel you could benefit from additional support the most?

Which competencies are entirely new to you?

What is the most important competency required to successfully complete your primary duties in this position?

How did you develop and/or learn this competency?

Step 2: Analyze data.

Step 3: Develop recommendations to enhance competency development. Instructional and non-instructional interventions may be necessary depending on the nature of the underlying competencies necessary to perform the job. Recommendations may address environmental, motivation and incentive, assignment and selection and skill and knowledge factors, as all of these domains may impact attainment and development of requisite competencies.

NOTE: Project scope and time dependent, it may also be appropriate to conduct a Training Course Comparison or a TRA to ascertain the degree of which target performers are already receiving instructional support with any of the relevant competencies identified.

4.1.3 Strategic Needs Assessment

Examine existing performance problems (reactive) or forecast future performance needs (proactive) based on published or anticipated service strategies.

Uses Develop long-term performance plans. Link performance improvement needs to actual CG strategies. Identify performance improvement opportunities

Pros Solves problems integral to strategy execution. Eliminates non-value-added activities. Develops long-term solutions to existing performance problems or new performance needs.

Cons Requires that a clear CG strategy exists. Requires the most resources of the three need assessment types in terms of time and personnel.

EXAMPLE

The Coast Guard's Bridge Program has come under significant political scrutiny for not reacting to externally driven timelines and priorities. For

instance, Executive Order 13604 (Improving Performance of Federal Permitting and Review Infrastructure Projects) mandates the development of improved processes and transparency in infrastructure permitting. While meant to help streamline the bridge permitting process, the mandate adds additional work to already over tasked staffs.

This SNA examined the internal and external factors that affect performance with the context of the CG-BRG business strategy. The purpose of this SNA was to improve the overall performance of the CG-BRG by identifying gaps between the current state and the desired conditions, or the optimal state.

This analysis focused on documenting the gaps between the optimal state of the Bridge Program's business goals, as defined by CG-BRG, and the current state, as practiced in the District Bridge Offices (DBO). The analysis identified the root causes and recommended solutions.

An SNA identifies the causes of performance problems resulting from the frequent changes in the USCG's world of work. The USCG uses the approach in Figure 5 to solve performance problems or realize opportunities to meet organizational goals.

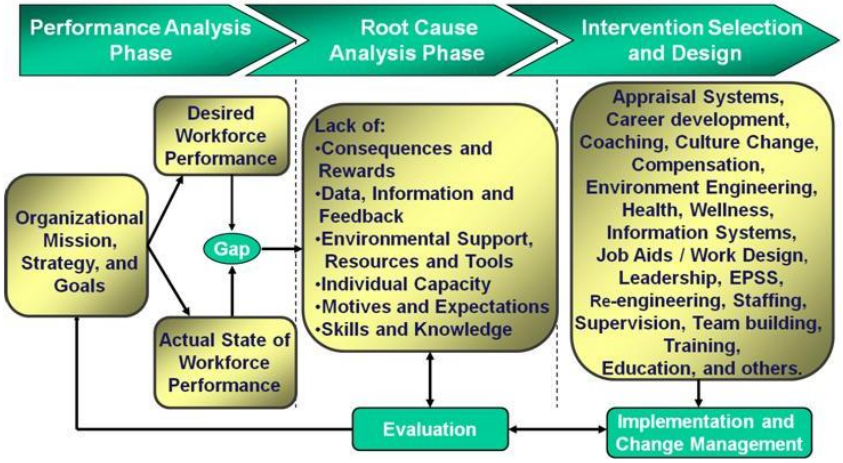

Figure 5. Strategic Needs Assessment Model.

Closing performance gaps using the most cost effective and efficient solutions is critical for the organization's long-term success.

An SNA is most effective in the following situations:

- Linking performance improvement needs to the business strategy of the USCG.
- Undertaking long-term performance or organizational change initiatives.
- Identifying a process that does not add value to the USCG.
- Identifying performance gaps affecting different USCG programs.

Performing an SNA offers many benefits to the USCG, for example:

- Developing a long-term solution to existing performance problems or new performance needs.
- Solving problems affecting core business processes, such as product development, order processing or service delivery.
- Solving problems affecting many different USCG programs.

The main drawbacks to performing an SNA are:

- Cost.
- Time-intensive.
- Requires participation by many people in various programs.
- Difficult to shift the focus from individual Customer needs to organizational needs; it requires alignment between the analyst and the Customer(s) who are responsible for the business result(s).

For USCG training purposes, a typical SNA includes the following phases:

- Phase 1: Alignment
- Phase 2: Performance Analysis
- Phase 3: Root Cause Analysis
- Phase 4: Intervention Selection and Design
- Phase 5: Final Report
- Phase 6: Out Brief
- Phase 7: Evaluation of process, plans for implementation and measurement of effectiveness of recommendations

NOTE: Although these phases appear linear, there are no precise boundaries between them. As an SNA project progresses, the data and results from one phase may cause modifications in planned activities for the next phase.

It is the responsibility of the analysts to routinely check for alignment on the project and keep the Program informed of all modifications to the proposed project schedule, as well as any changes to the planned activities in each phase.

Phase 1: Alignment

The steps for the alignment meeting in Section III.

Phase 2: Performance Analysis

The purpose of the Performance Analysis Phase is to work with the Customer to:

- Identify the performance gap or opportunity.
- Ensure alignment with organizational goals, objectives, and missions.
- Identify desired and actual performance.
- Define the gap(s) between desired and actual performance in measurable terms.

- Determine cost benefits of various interventions.
- Make recommendations for performance interventions to remove performance gaps.

The steps in the Performance Analysis Phase of the SNA process are:

1. Analyst and Customer responsible for the Business Result, Training Manager, and Customer requesting the SNA Align with Customer(s). Use an Alignment Agreement for this purpose.

   NOTE: The Customer responsible for the business result may or may not be the same as the Customer requesting the analysis. It is essential the responsible person is also involved in the process since both the analyst and the requesting customer have the responsibility to make sure the suggested solution(s) support the USCG's business objectives.

2. Develop data collection plan.
3. Collect data.
4. Conduct performance gap analysis:
   a. Identify optimal performance
   b. Identify actual performance
   c. Determine gaps between optimal and actual performances
5. Prepare Performance Analysis report.
6. Brief report findings and recommendations to Customer(s).
7. Continue to Root Cause Analysis.

Phase 3: Root Cause Analysis

The purpose of the Root Cause Analysis Phase is to work with the Customer to:

- Determine root causes for the gap(s) identified in the Performance Analysis Phase.
- Classify root causes as a lack of:
  - Skills and Knowledge
  - Motivation and Incentive
  - Environmental (expectations and feedback, tools and processes, and rewards, recognition, and incentives)
  - Assignment or Selection

The steps in the Root Cause Analysis Phase of the SNA process are:

1. Review Performance Analysis report.
2. Develop data collection plan.
   a. Strategically design the data collection plan involving the customer so they better understand the process and method. The Customer provides extant data and list of APs.
   b. During an SNA, analysts may need to see the performance at both the non-optimal and optimal performance level.
3. Collect data.

4. Classify Root Causes. Root Cause Determination Guide can be found HERE.
5. Prepare Root Cause Analysis Report. Example can be found HERE.
6. Brief report findings and recommendations to the Customer(s).
7. Continue to Intervention Selection and Design Phase.

Phase 4: Intervention Selection and Design

The purpose of the Intervention Selection and Design Phase is to work with the Customer to:

- Develop effective and cost-efficient interventions.
- Prioritize interventions.
- Compare costs of interventions.

The steps in the Intervention Selection and Design Phase of the SNA process are:

1. Review Root Cause Analysis Report.
2. Select at least one intervention recommendation for each performance gap identified. **NOTE: Some performance interventions may address more than one performance gap and noted accordingly.**
    a. Develop interventions recommendation list and link at least one intervention to each performance gap identified. Example of an intervention recommendation list is (found HERE).
3. Rank order each intervention based on Rationale, Value, Integration, and Acceptability.
4. Develop intervention selections
5. Brief report to Customer(s). Analyst provides Out Brief to Project Manager, Customers, Stakeholders, and FC-L representative.
6. Continue to the Report Preparation phase.

Phase 5: Report Preparation

The steps for preparing the report are in Section VI. Follow the subsequent outline in the development of the final report:

- Table of Contents
- Executive Summary
- Purpose
    - Methods
    - Recommendations
- Project Overview
    - Reason for Analysis
- Alignment
    - Alignment Meeting

- Stakeholders and Roles
- Responsibilities
- Funding Agreement
- Scope

- Method
  - Overview
  - Extant Data Review
  - Site Visits and Interviews
  - Focus Groups
  - Strategic Needs Assessment Overview
  - Performance Analysis
  - Intervention Analysis
- Causal Analysis
  - Causal Analysis Overview
  - Causal Analysis – Element #
- Intervention Selection
  - Intervention Selection Introduction
  - Interventions
- Future Actions
  - Next Phase
- Appendices
  - Appendix A – Abbreviations and Definitions
  - Appendix B – Request for Analysis
  - Appendix C – Scoping Documents
  - Appendix D – Alignment Agreement
  - Appendix E – Document Review
  - Appendix F – Site Visits
  - Appendix G – Task Validation Meeting Results (if conducted)
  - Appendix H – Intervention Selection

NOTE: Additional appendices added as required.

Phase 6: Out Brief

The steps for conducting an Out Brief are located in Section VI.

Phase 7: Implementation

The purpose of the Implementation Phase is for the analyst to work with the Customer and FC-L Training Manager to develop a comprehensive POAM to implement the interventions.

The steps in the Implementation Phase of the SNA process are:

1. Draft POAM.
2. Route draft POAM to all stakeholders for concurrence (Customer, Training Manager, Analysis Source).
3. If a follow-on analysis is required, coordinate additional RFA(s). If a non-instructional intervention is required, Program Managers are responsible for implementing non-instructional interventions.
4. If training or job aid development is required AND
   a. E2 or E3 Quals are affected, then Coordinate PME Qual changes and Enlisted Accession training through Accessions TRACEN and training manager.
   b. E-4 Quals are affected, then coordinate "A" school modifications through "A" school Training Manager.
   c. E-5 or E-6 Quals affected, then coordinate revisions for affected EPQs.
   d. Other tasks are required, identify C School requirements, program funding (resource proposal [RP], technical adjustment, or offset) to support resident instruction development, and engage applicable TRASYS component for development, implementation, and evaluation.

      NOTE: TRASYS component will act as the Contracting Officer Representative (COR) if contracted service is appropriate provider.

   e. Alternative Development is required, then see the Advanced Distributed Learning SOP and coordinate RFD with Program Manager.

4.2 Front End Analysis (FEA)

4.2.1 Introduction

An FEA is a systematic process for:

- Describing new performance.
- Determining inhibitors to competent performance.
- Recommending the skills and knowledge (S/K), environmental (ENV), motivational/incentive (M/I), and assignment and selection (A/S) interventions that must be put in place to help USCG workers achieve optimum performance.

EXAMPLE

The Office of Intelligence Workforce Management requested that the FORCECOM Organizational Leadership and Training Program Division, (FC-L), determine what skill sets personnel need for the management of the Center for Development of Security Excellence (CDSE) Operator/Linguist Deployers and the factors that influence performance in the field.

Performance challenges the CDSE program was experiencing include:

- Difficulties filling CDSE positions and early loss of personnel due to advancements.
- Long lead times required for finalized security clearances.
- Positions require a lengthy DoD training process and, due to limited availability of seats, has resulted in an extensive backlog of CDSE personnel awaiting qualification.
- Sea pay and sea time initiatives were identified as potentially insufficient.
- The CDSE program relies extensively on Department of War (DoW) linguists to fill linguist team positions due to a lack of qualified USCG linguists.

These factors directly impacted the program's ability to support cutter operations.

This analysis focused on documenting the gaps between the optimal state of the Bridge Program's business goals, as defined by CG-BRG, and the current state, as practiced in the District Bridge Offices (DBO). The analysis identified the root causes and recommended

The USCG uses an HPT Methodology based on SABA Software's (SABA) Peak Performance System© (PPS) FEA methodology to define performance. The USCG has found that some modifications to the PPS were necessary to fit the Coast Guards business model were necessary to provide our customers the best performance support.

An FEA is used in the following situations:

- New acquisitions (i.e., ships, aircraft, and equipment procured to accomplish USCG missions).
- No previous FEA has been conducted.
- The original performance has changed i.e., new equipment, new policy, new procedures.
- As part of a larger analysis such as an SNA.
- The USCG also uses the FEA methodology to determine the cause of performance problems and to recommend interventions to improve deficient performance.

4.2.2 Target Audience for FEAs

The target audience for an FEA includes:

- USCG FORCECOM Training Managers
- USCG Headquarters Program Managers
- Acquisition Managers
- Rating Force Master Chiefs (RFMCs)
- Training Center course designers/developers.

4.2.3 Background

The FEA identifies the skills and knowledge required of performers, the motivational issues related to job performance, personnel assignment and selection criteria, issues relevant to performance, and environmental factors such as policy/tools/processes that can be either a barrier or catalyst to competent job performance. The FEA methodology used by the USCG fits into HPT methodologies and into Instructional Systems Design (ISD) models.

4.2.3.1 Benefits of Using FEA Methodology?

The following are reasons for using FEA methodology to define performance:

- Focuses on alignment with associated USCG business goals and ensures interventions recommended through the analysis tie back to helping performers achieve the goals.
- Focuses on the performer and their performance in the field.
- Provides a detailed prescriptive and standardized process for how to conduct each aspect of an FEA. This process ensures that FEA outputs are replicable no matter who conducts the analysis.
- Defines an AP as –"the best of the best" currently doing the job– and ties project success to early identification. The AP observations and interviews gather data for analysis.
- Places emphasis on selecting the type of FEA most applicable to a particular project.
- Provides a thorough study of the performer's performance in the field.
- Produces major accomplishments (for Skills and Knowledge gaps), and a task and step list used for design of job aids and training interventions validated with APs.

  NOTE: The task list for an FEA differs in breakdown of the job and naming conventions than the JTA methodology.
- Emphasizes job aid development (performance supports stores information in the job aid)
- Facilitates training development (intervention stores information in the student's long-term memory).

4.2.3.2 How Does FEA Fit into HPT Methodologies?

This methodology is an HPT approach that defines a process for analyzing, designing, developing, implementing, and evaluating projects to most cost effectively influence human performance that is of value to the USCG's basic business goals.

An FEA requires the analyst to consider all influences affecting performance. Figure 6 shows the four categories impacting performance factors.

Figure 6. Performance Factors.

Categories impacting performance factors:

- Skills/Knowledge (S/K): Assesses whether personnel possess the required competencies to perform their duties effectively. If gaps exist, training, education, or other learning interventions may be necessary to enhance performance.
- Motivation/Incentive (M/I): Evaluates whether personnel have sufficient motivation or incentives (intrinsic or extrinsic) to perform their tasks efficiently. This includes leadership influence, recognition programs, career progression opportunities, and alignment with personal and organizational goals.

- Assignment/Selection (A/S): Ensures personnel are appropriately assigned based on their qualifications, experience, and potential for success. This category examines if the right individuals occupy roles that align with their capabilities and mission needs.
- Environment (ENV): Examines external factors affecting performance, such as tools, equipment, procedures, policies, workspace conditions, and organizational culture. Ensuring a supportive work environment is crucial for optimal human performance.

Performance Levels:

The analysis effort focuses on the performance at the following levels:

- Job: The overall role or position held by an individual within the organization, encompassing all responsibilities, duties, and expectations associated with that position.
- Job Accomplishment(s): The successful execution of the primary functions of a job, measured by the extent to which an individual meets performance standards and contributes to organizational goals.
- Major Accomplishments (MAs): A significant, mission-critical outcome that results from multiple job accomplishments. Major accomplishments typically align with higher-level organizational objectives and reflect key contributions to operational effectiveness.
- Tasks: A specific, measurable unit of work within a job that contributes to job accomplishment. Tasks are the fundamental building blocks of performance, requiring defined inputs, processes, and outputs to be effectively executed.

This performance breakdown is useful for designing subsequent intervention recommendations. Its focus on observing and interviewing APs results in the capture of specific actions and processes that can be incorporated into specific performance interventions. As a systematic model, it defines a rigorous and standardized approach to gathering and analyzing data. When the problem is poor performance, it provides a rigorous and standardized method for performing performance gap analysis at the task level.

It also applies an equally rigorous and standardized approach to converting FEA data interventions for improving the worker's performance into S/K, M/I, A/S, and/or ENV recommendations.

4.2.3.3 How Does FEA Fit into the ISD Model

When an analyst identifies training as the appropriate intervention to fill a gap, the FEA becomes a critical element of the ISD's first analysis phase. The USCG is committed to designing or developing training only after a completed analysis determines training is the solution to a performance problem. Though an FEA uses jobs, major accomplishments, tasks and steps, these parts of an FEA generally but may not always equate to the following when developing curriculum:

Job ↔ Course

Major Accomplishment ↔ Lesson Unit

Task ↔ Terminal Performance Objective (TPO)

Step ↔ Enabling Objective (EO)

4.2.3.4 FEA Model is Helpful for Training Designers and Developers

The FEA methodology is particularly useful to USCG Training Centers because it provides USCG staff and contractors with performances, major accomplishments, tasks, and steps needed to design and develop efficient and effective job aids and performance-based training.

4.2.3.5 Requirements for Conducting an FEA

The requirements for conducting an FEA are:

- Graduate of FORCECOM's Front End Analysis Blended Learning Course.
- FEA job aids and worksheets acquired as instructional materials during training.
- Strict adherence to the FEA job aids and completion of all the worksheets.

4.2.3.6 Two Types of FEAs

There are two types of FEAs: New Performance Planning (NPP FEA) and Diagnostic (DFEA). Selection of the type of FEA performed occurs during the project scoping process.

4.2.4 The FEA Process

The FEA training in conjunction with the FEA job aids describes the process to conduct an FEA. Figure 7 below provides a general overview of the FEA process. The Step Action Tables below provide guidance in addition to using the job aids.

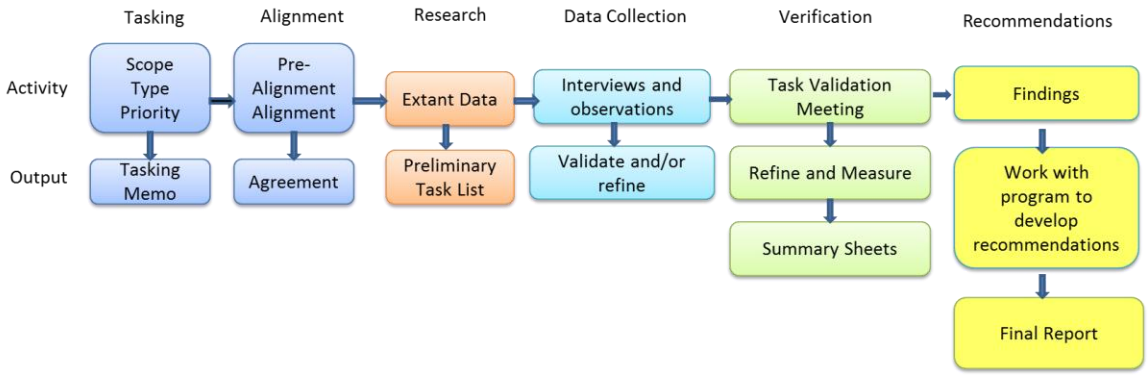

Figure 7. FC-Tace Analysis Process (Step Action Table).

4.2.5 New Performance Planning (NPP) FEA

An NPP FEA generally analyzes "new starts" such as when a new piece of equipment, policy, or position is created. An NPP FEA also analyzes a job with no prior FEA or a job/piece of equipment that has changed so much the original FEA is no longer valid.

Phase 1: Project Communication Tracking

Use this phase throughout the project to communicate the project status and keep the Program informed on the findings so the final report is not a surprise. Communication is essential between the team throughout the entire project. Poor or a lack of communication results in conflicts, misinformation, and a product that may not meet the Program's needs in solving the performance problem.

1. Maintain project tracking.
    a. Develop status report during the Alignment.
    NOTE: At a minimum, the project status is communicated bi-weekly to the Program Manager and Training Manager.
    b. Send status report to Program, stakeholders, and Training Manager.
    c. Enter status into tracking tool (SharePoint) weekly.
2. Resolve issues.
    a. Discuss with Program, Chain of Command, and Training Manager.
    b. Resolve at appropriate level.
    c. Document on status report.
    d. Document on tracking tool.

Phase 2: Alignment

The steps for the pre-alignment and alignment meetings are located in Section III.

NOTE: Depending on the project's complexity and issues, it may be necessary to refine the Alignment Agreement with the Program several times.

Phase 3: Data Collection and Analysis

After the Alignment Phase, analysts begin collecting data for the analysis which includes gathering and reviewing extant data, meeting with SMEs as required, and interviewing and observing APs. Collecting data is the largest part of conducting the FEA. The purpose of Data Analysis is to determine performance (MAs, tasks, and steps) and then identify performance gaps using the performance factors S/K, ENV, M/I, and A/S. FEAs often include elements of other analysis such as SNA, CCA, Curriculum Comparison, etc. Analysts determine this to meet the needs of the analysis project and provide an effective HPT solution to the customer.

The following should be considered during data collection and analysis:

- Use "Job Aid 6 New Performance Planning FEA" (Harless, 2001) – this is a hard copy reference from the SABA library.
- MAs are expressed as nouns or noun phrases.
- Tasks are expressed as action verbs with objects.
- Analysts use job aids to interview APs.
- Analysts complete and retain summary sheets.
- All questions found in the job aids are adequately answered.
- Task data are sorted through relevant algorithms to properly identify what S/K tasks should have a job aid (with introductory or extensive training) developed and which tasks should be trained to memory.

NOTE: The FEA method for S/K findings includes algorithms for making train/no train decisions and for determining under what circumstances job aid tasks require introductory or extensive

training. To standardize FEA outcomes, USCG analysts must use the algorithms in the FEA materials to make training and job aid recommendations.

The FEA method for S/K findings utilizes a formula comprised of the following task data:

- Speed
- Frequency
- Complexity
- Consequences of error
- Probability of change
- Barriers to job aiding

The steps for the Data Collection and Analysis Phase are:

1. Develop data collection plan.
    a. Analyst verifies with Program all extant data sources.
    b. Analyst identifies and collects all relevant extant data.
    c. Analyst determines data collection method.
    d. Program confirms sites, APs, and SMEs for data collection visit(s) initially identified/approved in the Alignment Agreement.
    e. Program Champion provides an analysis team introduction to the site(s), and notifies site(s) the analysis team is conducting interviews and observations of identified APs.
    f. Analyst schedules site visit(s).

        NOTE: The Program office will provide site locations.

    g. Analyst schedules interview(s).

        NOTE: The Program office will provide interviewees and contacts.

    h. Analyst estimates travel budget.
    i. Analyst sends scheduled list of site(s) and estimated travel costs to Program. Program will provide Travel Order Numbers (TONOs). Enter information into the Travel Preparation and Examination System (TPAX) and print orders.

        NOTE: Contractors must provide travel requests with proposed costs to the COR.

    j. Analyst updates Branch Chief.
    k. Analyst updates project tracker.
    l. Analyst reviews Alignment documents.
    m. Analyst team schedules travel by reserving hotel rooms, flights, and other form of transportation.

2. Develop performance hierarchy.
    a. Analyst reviews all relevant extant data.
    b. Analyst creates preliminary performance task list.
    c. Analyst prepares list of questions to ask SMEs and APs.
    d. Analysis team conducts interviews with SMEs to refine preliminary performance task list.
        i. Ask prepared performance related questions.
        ii. Ask follow-up questions to clarify if needed.
    e. Document findings and transcribe notes into electronic format to ensure file for reference.
    f. Analysis team conducts AP site interviews and observations
        i. Ask prepared performance related questions.
        ii. Ask follow-up questions to clarify if needed.
        iii. Document observations/findings and transcribe notes into electronic format to ensure file for reference. Note any findings in the four areas of S/K, ENV, A/S, and M/I
    g. Analyst analyzes data to determine if additional data is needed or items need clarification.
    h. Analyst discusses situation with Program to determine if additional data collection is needed.
    i. Analyst updates performance task list.
3. Identify performance factors (ENV, M/I, S/K, and A/S).
    a. Separate findings into different performance factors (S/K, ENV, A/S, and M/I).
    b. Validate performance hierarchy for S/K findings and conduct task validation meeting (TVM).
    c. Conduct meeting/validate list (MAs, tasks and steps)/measure MAs, tasks and steps.
    d. Using "Job Aid 6 New Performance Planning FEA" (Harless, 2001), document TVM results on the summary sheets.
    e. Convert completed summary sheets into electronic format to be used as part of the final report.

Phase 4: Findings and Performance Intervention Recommendations

Creating the intervention recommendations is the heart of the analysis project. Close cooperation between all members of the team is mandatory. Project analysts must consult with the Program, Training Managers, and stakeholders to determine achievable interventions. This helps the analysts and Program to shape recommendations. However, if current constraints prevent an intervention

from being implemented (i.e. budgeting), these recommendations may prove useful to gain the resources necessary to implement a solution.

Working with the Program, Training Manager, and stakeholders may eliminate the need to consult with several specialists. If the Program cannot afford certain interventions or foresees too many impediments to implement them, it will be necessary to work with the Program on possible achievable solutions. Develop a system of achievable positive performance interventions before preparing a draft FEA Report. An internal review will ensure the report is on track.

Use NPP FEA Summary Sheets 1-5 (examples found HERE), in the Harless Job Aid Section 6 (this is a robust paper document found in the SABA library), during this phase. The steps of the Performance Intervention Recommendations Phase are:

1. Develop Findings.
    a. Review performance data and notes from site visits, observations, and interviews.
    b. Look for opportunities and barriers to performance.
    c. Categorize preliminary findings into the four Harless performance factors (S/K, ENV, A/S, and M/I).
    d. Determine if trends exist.
    e. Analyze data (quantify/qualify).
    f. Develop preliminary findings.
    g. Discuss preliminary findings with Training and Program Managers.
    h. Gather and obtain clarification/additional data when needed.
    i. Finalize findings.
2. Develop preliminary Intervention Recommendations.
    a. Develop supporting rationale and benefit to the organization.
    b. Discuss with Training and Program Manager.
    c. Gather any additional data as required.
    d. Conduct internal review to ensure report is on track.
    e. Finalize Intervention Recommendations.
3. Develop any other analysis products to meet the needs of the customer.

Phase 5: Report Preparation

The steps for the report preparation are located in Section VI. The subsequent outline should be followed in the development of the final report:

- Table of Contents
- Executive Summary

- Purpose
- Methods
- Recommendations

- Need to Analyze
  - Reason for Analysis
  - Case for Analysis
- Alignment
  - Alignment Meeting
  - Stakeholders and Roles
  - Responsibilities
  - Scope
  - Analysis Overview
  - Funding Agreement
  - Constraints
- Method
  - Analysis Type
  - Data Collection
  - Extant Data Review
  - Task Validation Meeting
  - Site Visit and Interviews
- Findings and Recommendations
  - Discussion
- Future Actions
  - Next Phase
- Appendices
  - Appendix A – Abbreviations and Definitions
  - Appendix B – Request for Analysis
  - Appendix C – Alignment Agreement
  - Appendix D – Major Accomplishment Data Summary Sheets
  - Appendix E – Performance Interventions

- Appendix F – FC-Tace Advocacy (if needed)

NOTE: Additional appendices added as required.

Phase 6: Out Brief

The steps for the out brief are in Section VI.

NOTE: All Customer questions and concerns must be resolved prior to the Out Brief.

Phase 7: Post Analysis

The Post Analysis Phase ensures the implementation of intervention recommendations and monitors changes in performance. The FEA effort is only as good as the interventions implemented.

For S/K interventions (training, job aid, etc.), FC-Tace and/or other TRACENs representatives may be required to design and develop interventions. If this is determined, they will need to be part of the action plan.

The steps for conducting the Post Analysis Phase are:

1. Performance improvement after analysis.
   a. Training Manager works with Program to implement interventions.
2. Conduct Customer Service Evaluation (within 30 days of Out Brief).
   a. FC-Tace provide URL of report location in the Analysis Library (for internal Customers).
   b. Provide report in e-mail (for external Customers).
   c. Develop and send out survey to Program and Training Manager.
   d. Receive feedback.
   e. Lead analyst and internal Chain of Command review feedback.
   f. Collect data to look for trends and means of improvement.
3. FC-Tace conduct organizational impact survey six months after intervention implementation.
   a. Gather information (recommendations from report).
   b. Gather email addresses of Program and stakeholders.
   c. Provide URL of report location in the Analysis Library (for internal Customers).
   d. Provide a link to the report in e-mail (external Customers).
   e. Develop and send out survey.
   f. Receive feedback.
   g. Lead analysts and internal Chain of Command review feedback.
   h. Collect data and determine organizational impact and return on investment.

4.2.6 Diagnostic Front End Analysis (DFEA)

A DFEA analyzes why a group of people are not performing as expected (e.g., CASREPS indicate boilers are replaced too frequently). A DFEA is the appropriate FEA method to use when there is documented evidence or a perception that workers are not performing as required from an existing analysis.

Use a DFEA where a general problem exists. A general problem is a specific performance problem and characterized by asking the question: "What goal or accomplishment is not being produced?" For instance, if USCG members were having problems making boat trailers ready for use, this would indicate a general problem.

The questions asked are:

- What is not being produced?
- What are the immediate results or effects?
- What are the long-term consequences?
- What is the value of the general problem?

EXAMPLE

Coast Guard policy requires Coast Guard vessels performing ports, waterways, and coastal security (PWCS) activities to carry mounted automatic weapons (MAW). The MAW provides both a visual deterrent and an interdiction capability, particularly against a small boat threat. However, the M240B presents challenges and some risk of collateral damage in a port environment. The belt-fed weapon can shoot approximately 700 projectiles per minute at a range of just over two miles; therefore, proficiency is an essential skill of every M240B gunner. While no documented evidence exists that a lack of proficiency resulted in PWCS mission degradation, there have been seven M240B negligent discharges since 2010, all attributed to the lack of proficiency during training, loading, or unloading.

A general problem is the result of a root problem deficiency (RPD). An RPD occurs when a task is not performed when needed. It is a statement of who, what, when, and where plus the negative results.

Examples of possible RPDs might include:

- The performers do not have the right skills/knowledge.
- The performers are not given sufficient time.
- The criteria for performance of a task are too high.
- The tools available are not adequate.
- The performers lack feedback on performance.
- The performers lack access to the data they need.

- The performers are rewarded for other actions.
- The work is poorly designed.
- The wrong performer is assigned to the position.
- The performer is not receiving the correct inputs.

NOTE: Many steps for conducting a DFEA are the same as an NPP FEA (RFA, Pre-alignment Meeting, Project Tracking, Alignment, Analysis Results, and Post Analysis). The differences exist in the Performance Data and Performance Recommendation Steps.

Phase 1: Alignment

The steps for the alignment meeting are located in Section III.

Phase 2: Define General Problem

This phase identifies the problem, deficient accomplishments, tasks, and who is not accomplishing the performance.

1. Define the general problem.
    a. Identify the potential value. The potential value may be measured as a higher risk of loss of life, serve damage to equipment, time delay resulting in mission failure, etc.
    b. Develop a task list (major accomplishments and tasks).
    c. List the deficient accomplishments.
    d. List the task of each accomplishment.
    e. Work with the Program to determine which tasks are deficient.
    f. Determine who is deficient in performing the tasks.
    g. Determine when and where the deficient performance is occurring.
    h. Determine any possible linked deficiency by exploring links between tasks or performances.

Phase 3: Propose Cause Hypothesis

The next phase of the DFEA theorizes what may be causing the performance deficiency.

NOTE: Always consider performance factors S/K, ENV, A/S and M/I as possible causes while forming a hypothesis. Determining how evidence will be collected to support or eliminate reasons for the lack of performance should also be considered at this time.

Formulating a Cause Hypothesis is a team effort and should involve the Program, Training Manager, and stakeholders.

Phase 3: Propose Cause Hypothesis (continued)

The step for the Cause Hypothesis Phase is:

1. Formulate Cause Hypothesis.

a. Determine the impact of not performing/producing the accomplishment and task.

b. Work with the team to develop possible causes to the performance problem (S/K, ENV, M/I, and possible Root Causes).

c. Move to Phase 4.

Phase 4: Evidence Collection and Determine Solutions

This phase resembles the Data Collection Phase of the NPP FEA. Use the methods determined in the Cause Hypothesis steps to collect data that either supports or rejects your hypothesis.

NOTE: You may find evidence for other causes you did not hypothesize. When conducting your data analysis, include a wide variety of performers including both APs and under-performing personnel.

The steps are:

1. Data Collection Plan.
   a. Create Data Collection Plan.
   b. Determine how evidence will be collected.
   c. Develop a list of questions for the next steps.
   d. Meet with Program, Training Manager, and other stakeholders to discuss Data Collection Plan.
2. Collect evidence.
   a. Gather evidence in accordance with data collection plan.
   b. Determine if collected evidence supports (or does not support) the hypothesis.
   c. Review hypothesis and collected data.

   NOTE: If collected evidence supports the hypothesis, continue. If the hypothesis is not supported, return to Phase 3 to determine if the task is actually deficient or the hypothesized cause is incorrect.
3. Analyze evidence to determine probable cause.
   a. Determine findings and probable causes and root causes.
   b. Meet with Program, Training Manager, and other stakeholders to discuss hypothesis, evidence, findings and probable cause.
4. Determine solutions and recommendations.
   a. Review findings.
   b. Develop potential solutions.
   c. Review performance data and notes from Evidence Collection and Determine Solutions Phase.

d. Develop preliminary recommendations.

e. Discuss with Program, Training Managers and other stakeholders.

f. Gather additional data to get further evidence as required.

g. Finalize recommendations.

h. Document each step on DFEA Summary Sheets 1-4 (Harless 2001).

Phase 5: Report Preparation

The steps for the report preparation are located in Section VI.

The following outline should be followed in the development of the final report:

- Table of Contents
- Executive Summary
  - Purpose
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- Need to Analyze
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  - Case for Analysis
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  - Scope
  - Analysis Overview
  - Funding Agreement
- Method
  - Analysis Type
  - Data Collection
  - Extant Data Review
  - Site Visit and Interviews
  - Constraints
- Findings and Recommendations

- Discussion

- Future Actions
  - Next Phase

- Appendices
  - Appendix A – Abbreviations and Definitions
  - Appendix B – Request for Analysis
  - Appendix C – Scoping and Tasking Form
  - Appendix D – Alignment Agreement
  - Appendix E – Diagnostic Summary Sheet
  - Appendix F – FC-Tace Advocacy (if necessary)

NOTE: Additional appendices added as required.

Phase 6: Out Brief

The steps for the Out Brief are in Section VI.

NOTE: Resolve all customer questions and concerns before the Out Brief.

4.3 Job Task Analysis (JTA)

4.3.1 What is a JTA?

A JTA is a simple, effective tool to use when you need to answer these questions:

- What are the job tasks?
- What level of performance support do those tasks require- training, job aids, or a combination of both?

The JTA is a good tool to use when the goal is to assess skill/knowledge needs, and only skill/knowledge needs.

EXAMPLE

The 2016 Department of Homeland Security (DHS) Labor Management Survey reflected workforce dissatisfaction with the supervisory proficiency of their supervisors. The USCG currently has two courses that train civilian supervisors: Supervisors of Civilians Tier I and Tier II. The courses have been subjects of complaint due to either course length, information inaccessibility, or course cost.

The former USCG Office of Leadership (CG-128) requested an analysis of the Supervisors of Civilians positions throughout the USCG. FORCECOM was tasked to conduct a JTA to identify the accomplishments, tasks, and

steps performed by Supervisors of Civilians and recommend skills and knowledge performance interventions to improve the two courses.

4.3.2 JTA Precedents

Before conducting a JTA, the analysis team should complete the following universal steps:

- Alignment
- Data collection plan
- POAM

Follow the steps in each of these earlier sections.

4.3.3 JTA Add-ons

Answering the questions, "What are the tasks, and what performance support do they require?" is often enough to meet the client's needs and thus may be the end of the analysis project. However, many times the client may need additional questions answered, so the JTA becomes the first step or the foundation of a larger analysis project. Common additions to a JTA include:

- A curriculum comparison to determine if suitable training already exists.
- An instructional method selection analysis to determine what form the training should take.
- A cost comparison to determine the most cost-effective instructional choice.

Later sections discuss the steps for these. During alignment, the team (analysts, FORCECOM, clients) decides if the analysis' problem statement and goals require any additional components.

4.3.4 The Basic JTA Process

These are the basic steps to a JTA:

1. Build a draft (prototype) task list.
2. Verify (validate) that the task list is complete and accurate.
3. Approve the task list.
4. Collect job aid and mandated training information.
5. Collect basic data for each task.
6. Collect DIF (difficulty, importance, and frequency) data for each task.
7. Calculate the DIF score.
8. Determine the performance support result for each task.
9. Conduct a logic check on the results.
10. Summarize the findings.

Step 1: Build a Draft Task List

A draft task list is the output of preliminary research into the job being analyzed, a first cut of what the tasks could be. Before building the task list, it is important to understand the levels of performance and their definitions.

- Duty: The general job responsibility.
- Task: A discrete action or unit of work. A task has a clear beginning and a clear end, and it can be observed and measured in some way. A task should have at least two steps.
- Step: An action that contributes to completing a task, usually sequential.

The task list will be built in that order (Figure 8).

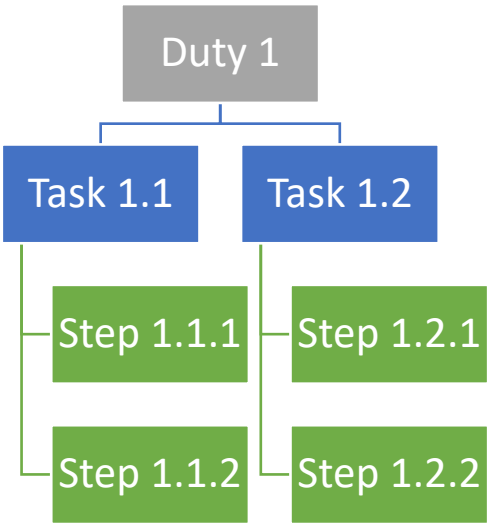

Figure 8. Task List.

Notes on task lists:

- **A JTA typically does not require step-level data; performance support decisions are made at the task level. However, the analysis team (FORCECOM, analysts, client) may decide during alignment that the project should include steps and then allow for the extra time needed to do that.**
- **Leveling tasks (determining if an action is a task or a step) is a key part of building a task list at this stage. However, it is important to note that if it goes to instructional design, tasks maybe broken apart, combined, or re-leveled for instruction.**

Step 2: Verify (Validate) that the Task List is Complete and Accurate

The goal of this step is to ensure the task list has all the tasks it should have, and that all the tasks on the list are directly related to the job and only that job.

Most common ways to do this:

1. Use a technical authority to review and approve the list.

   a. This method would be appropriate if the job is very new and there are not many performers, if there is a great deal of policy involved, or if it is highly specialized.

2. Work with APs to validate the list, often through a focus group or interviews. Using a Task Analysis/Detailing worksheet found HERE is recommended.

This method is appropriate when there are multiple influences on the job, such as geographical differences or differences in unit type.

Program/clients must choose and accept the APs as good representatives of how the job should be performed.

Step 3: Approve the Task List

Key stakeholders for that project need to approve the task list. That typically includes the client, FORCECOM, and any SMEs or others with specialized knowledge about the job. At this point, this excludes instructional school staff.

NOTE: Instructional school staff typically do not determine which tasks are relevant or irrelevant but may offer opinions in the way of analysis comments about the level of possible training interventions (should the analysis indicate training).

Step 4: Collect Job Aid and Mandated Training Information

Some of this information may come from SMEs and Program, some from APs. Helpful hint: These questions do not work well in a survey format; they are better done in person.

1. Is training mandated for this task?
2. Is use of a job aid required for this task?
3. Do job aids already exist for this task? If so, what are they and where are they kept?
4. Are there barriers to using a job aid? If so, what are they? Some common barriers are:
   a. Speed- the task must be performed immediately with no time to consult a job aid.
   b. Environmental – Elements of the task's environment impair the ability to use a job aid, like noise, darkness, motion, etc.
   c. Social – Does the use of a job aid diminish the credibility of the performer?
5. Are there ways to mitigate these barriers?

Step 5: Collect Basic Task Data

According to C5ISC, Figure 9 is a formula for calculating 95% Confidence Interval (CI) in survey results:

CI = NORMSDIST ((z*(pt -P)/((P*(1-P)/n) * ((N-n) / (N-1))) ^ 0.5))

N	Total Population		
n	Sample size/# Responses	1-tail	2-tail
z	t-stat @ 95% Conf Level	1.64	1.96
P	Target Satisfied %	0.75	
pt	Proportion of Population to be Tested	0.776	
CI	Confidence Interval %		

Figure 9. Calculating a 95% Confidence Interval.

In practical terms, Table 3 can be used as a reference point:

Sample Selection ID	Population	Surveys Needed for 95% Confidence
1	1000000	384
2	100000	383
3	90000	383
4	80000	382
5	70000	382
6	60000	382
7	50000	381
8	40000	381
9	30000	379
10	20000	377
11	10000	370
12	9000	368
13	8000	367
14	7000	364
15	6000	361
16	5000	357
17	4500	354
18	4000	351
19	3500	346
20	3000	341
21	2500	333
22	2250	328
23	2000	322
24	1750	315
25	1500	306
26	1250	294
27	1000	278
28	750	254
29	500	217
30	250	152
31	240	148
32	230	144
33	220	140
34	210	136
35	100	80

Table 3. Survey Response in Relation to Total Population for 95% Confidence.

The data from Step 5 and Step 6 can be collected together in a survey or focus group.

1. Do you perform this task, yes/no?

2. If you do not perform this task, why not?
    a. No opportunity- it has not come up yet
    b. It's someone else's job.
    c. Nobody at this unit performs this task.
    d. Other?

Step 6: Collect DIF Data

Rate each task for difficulty, importance, and frequency using this scale (Table 4).

DIF Definitions and Rating System How would an average performer rate each task?	
Difficulty (D) (Complexity, number of steps, amount of effort involved)	1. **Very Low** - anyone can do it. 2. **Low** - typically less than 5 steps, not much judgment, application of rule with no exceptions, no hand-eye coordination. 3. **Moderate** - typically 5 to 10 steps, gross judgment, application of rule with few exceptions, gross muscular movements. 4. **High** - typically 10 to 15 steps, fine judgment, application of rule with many exceptions, precise hand-eye coordination. 5. **Very High** - typically more than 15 steps, requires extensive skills, knowledge, or support
Importance (I) (Consequence of error)	1. **Very Low** – If task is not done correctly, no possibility of economic loss or injury to self or others. 2. **Low** - If task is not done correctly, very little possibility of economic loss or injury to self or others. 3. **Moderate** - If task is not done correctly, would require some correction but would probably not cause economic loss or injury. 4. **High** - If task is not done correctly, possible economic loss or injury to self or others is possible. 5. **Very High** - If task is not done correctly, injury, loss of life, or economic loss is likely.
Frequency (F)	1. **Very low**: Infrequent/ unpredictable 2. **Low**: Semi- annual (on average of twice/year) 3. **Moderate**: Monthly (on average 2- 3 times /month) 4. **High**: Weekly 5. **Very high**: Daily/Hourly

Table 4. DIF Scale.

Step 7: Calculate the DIF Score for Each Task

1. Calculate the Difficulty (D) score by averaging all the "D" responses.
    a. For the first task, add up all the "D" responses.
    b. Divide that sum by the total number of responses.
        i. If the answer is not a whole number (which is common), round to the nearest whole number. (.49 and below goes down, .5 and up goes up)

c. Record that average as the "D" score for that task.

d. Repeat the process for each task.

2. Calculate the Importance (I) and Frequency (F) scores for each task using the same process as outlined in sub step 1 above.

3. For each task, add the D, I, and F scores to create a total DIF score. The number will be between 3 and 15.

Step 8: Determine the Performance Support for Each Task

Use the following Table 5 to determine the performance support result.

Determine Performance Support Results		
Ask this question...	If the answer is YES...	If the answer is NO...
1 Is training mandated for the task?	Go to question 7 to determine if a job aid is also needed	Go to question 2.
2 Is a job aid mandated for the task?	Go to question 7 to determine if training is also needed.	Go to question 3.
3 Are there barriers to using a job aid that cannot be mitigated?	Mark the task as *perform from memory.*	Go to question 4.
4 Is the DIF result 6 or less?	Go to question 5.	Go to question 6.
5 Does either the D, I, or F have a score of 3 or more?	Consider a *job aid,*	Mark the task as *no formal training needed.*
6 Are there barriers to using a job aid that cannot be mitigated?	Mark the task as *perform from memory.*	Go to question 7.
7 Is the DIF result 7, 8 or 9?	Go to question 8.	Go to question 11.
8 Is the difficulty score very high (5)?	Mark the task as *job aid with extensive training.*	Go to question 9.
9 Is the difficulty score moderate (3) or high (4)?	Go to question 10.	Mark the task as *stand-alone job aid,* unless training is mandated, then mark it as *job aid with introductory training.*
10 Is the importance score high (4) or very high (5)?	Mark the task as *job aid with extensive training.*	Mark the task as *job aid with Introductory training.*

11 Is the DIF result 10, 11, or 12?	Mark the task as *perform from memory.*	Mark the task as *job aid with extensive training.*

Table 5. How to Determine Performance Support Results.

Step 9: Conduct a Logic Check

A logic check is simply a process of reviewing all the tasks and performance support results to make sure that they are (a) accurate and (b) make sense to the world of work. Some basic steps in the logic check include:

1. Confirm that no job aids are already in use or are required by policy for perform to memory tasks.
2. Confirm that any barriers to job aid use cannot be reasonably mitigated.
3. Add any relevant qualitative data to the task that may change the result.
4. If there are disagreements about some of the performance results, double-check the DIF scores to see if rounding adjustments impacted the results.

NOTE: Trust that the calculations will result in the best intervention for the performer; overriding the data during the logic check should only be done with careful consideration and documented reasoning.

Step 10: Summarize the Findings

The final step is to collect all the information learned in this process into findings. Findings will vary from project to project, but they usually include whether a job generally requires training, job aids, or both, what level that training should be, etc.

Sometimes findings may reveal unexpected information that is relevant to the performance. It is always best to note any additional findings as this information may be important to the stakeholders for making final performance decisions.

This is usually a good place to send work-to-date to the clients for review and approval. The next step in the process is to write the report, which is covered in the next section.

4.4 Occupational Analysis (OA)

4.4.1 Introduction

An Occupational Analysis (OA) is a process that measures the job performance requirements of an occupation. An OA takes a "snapshot" of an occupation's world of work at a particular point in time.

The OA process relies on a rigorous and systematic process to obtain USCG occupational data. The USCG must have absolute confidence in the integrity of OA data because it is used to help determine:

- Entry level and subsequent pay grade performance qualifications.
- Training for “A” and “C” schools.
- Proper staffing.

As an integral part of the ENLISTED RATING ADVANCEMENT TRAINING SYSTEM (ERATS)process, an OA is mandated by the PERFORMANCE, TRAINING, AND EDUCATION MANUAL(PTEM). The USCG follows a prescribed cycle for conducting an OA for each of its enlisted ratings. It might also conduct an OA to analyze a whole community's world of work (i.e., officers, enlisted, and civilians performing jobs within the Marine Safety community). Use an OA to examine non-traditional jobs, such as Command Master Chief or the All-Reserve IV rating, which involves a mix of enlisted personnel, officers, and civilians performing the rating's work.

4.4.2 Target Audience

The target audience for an OA includes:

- USCG FORCECOM Performance Analysts (Performance Consultants and HPT Practitioners)
- USCG FORECOM Training Managers
- Rating Training Advisory Council (RTAC)
- Integrated Process Team (IPT)

4.4.3 Background

The USCG RTAC is the prime Customer as part of the ERATS process. As prescribed by the PTEM, the RTACs use OA outputs to assist in determining the correct performance qualifications for each pay grade within a rating. FC-L Training Managers are also prime customers since they manage the Enlisted Performance Qualifications Program. They validate the performance qualifications an Enlisted Performance Qualifications Review identifies. When FC-L publishes official performance qualifications at the E-4 level, course designers/developers and contractors use the information to help determine the content to develop USCG training curricula.

Program Managers may also request an OA to analyze conditions within a community or analyze information related to standing up a new rating, such as Cyber Security.

The USCG conducts an OA because there is a recurring need to look at the jobs members are performing to ensure training and qualifications reflect the true needs of the field.

The PTEM mandates OA studies for the USCG enlisted ratings. Currently, FC-Tace conducts all OAs in the USCG.

4.4.4 Occupational Analysis Process

Table 6 outlines the Occupational Analysis process.

Accomplishment	Action	When	Who
Fiscal Year OA Schedule Developed	PTEM mandates a Rating Qualification Review Process to include an OA every 4 years for each enlisted rating unless otherwise recommended by the RTAC.	FC-L works with FC-Tace and Program Managers each spring to finalize an OA schedule for the upcoming fiscal year.	➤ FC-L ➤ Program Managers ➤ FC-Tace OA staff

Alignment Meeting	Hold alignment meeting to explore the request for an OA in more detail and to obtain alignment on key issues, such as AP identification.	As soon as a meeting can be coordinated after receiving formal tasking from FC-T.	➤ FC-L ➤ FC-Tace OA staff ➤ RTAC
Task Validation Meeting	Hold meeting with APs and RTAC to update and validate the current task list created using the task descriptions of the current Rating Performance Qualifications (RPQs) and the previous surveyed tasks	Date set at the alignment meeting.	➤ APs ➤ FC-Tace OA staff ➤ RTAC ➤ FC-L
OA Survey Developed	The OA survey is developed (i.e., survey questions, demographics, survey design, posting survey online, etc.).	Post Alignment (lasts approximately four weeks).	➤ FC-Tace OA ➤ staff ➤ RFMC ➤ Rating Knowledge Manager (RKM)
OA Survey Administered	The OA survey is administered. There may be additional work in this phase if analysts must involve HQ Program Managers in devising strategies to increase survey response rates.	Follows survey development (minimum six weeks).	➤ FC-Tace OA staff ➤ RFMC ➤ RKM ➤ Possibly FC-L Training Managers and/or Program Managers
Survey Analyzed	Analyze the data obtained from survey responses (i.e., return rates, performance qualification recommendations, etc.).	Follows survey administration (Approximately four weeks).	➤ FC-Tace OA staff
Report Prepared	OA report prepared and routed for signature.	Follows analysis of responses (Approximately four weeks).	➤ FC-Tace OA staff

OA Findings Reported	Report OA results and consult in the Rating Qualification Review Process as prescribed by PTEM.	Analysts coordinate the Report Out Phase following completion of report (one day). This Out Brief effectively ends the formal OA process.	➢ FC-Tace OA staff ➢ RTAC ➢ FC-L

Table 6. Occupational Analysis Process.

4.4.5 How to Conduct an OA

The USCG has a specific process and set of procedures for conducting an OA. The following sections contain the process and procedures. All OAs conducted for USCG purposes shall follow these guidelines to standardize OA outputs throughout the organization.

Phase 1: Alignment

The steps for the alignment meeting are in Section III.

Phase 2: Task Validation

1. Prepare Draft Task List.
    a. Gather task data from the following sources:
        i. RPQs
        ii. Previous OA Survey
        iii. FEA if applicable
        iv. JTA if applicable
        v. SMEs
    b. Develop draft OA Task List:
        i. Tasks are specific actions. These actions represent a single unit of measurable work and have a definite beginning and end.
2. Conduct Task Validation Meeting (TVM).
    a. Conduct TVM with APs (three days) to revise and validate core duties and tasks performed by the rating and evaluate Difficulty and Complexity of each task
    b. Meet with RTAC to develop additional questions for Survey and review data from APs.

Phase 3: Survey Development

1. Develop draft Occupational Survey consisting of the following sections:
    a. Demographics
        i. Time at Present Unit
        ii. Current Duty Status

iii. Current Pay Grade

iv. Gender

v. Senior Person Abroad Unit

vi. Only Person Aboard Unit

vii. Number Personnel Supervised

viii. First Assignment in Rating

ix. Type Unit Currently Assigned to

x. In a Special Assignment Billet

b. Task List. This section, the heart of the survey, contains provisions to determine which tasks the individual performs and how frequently they perform each task.

c. Additional write-in tasks

d. Job satisfaction and competency questions or any other questions the RFMC requests

e. Career Intentions Questions

f. General comments to program or RFMC as applicable

g. Hours to Complete Survey

h. Survey Considerations

i. For enlisted ratings, keep the Demographics, Job Satisfaction, and Career Intention questions constant for comparison purposes.

ii. Categorize task statements according to the current RPQ.

2. Review survey and quality assurance process.

a. Send test survey for review to program or RFMC/RKM as applicable.

b. Allow one week turnaround time.

c. Incorporate recommended changes made by the program or RFMC and RKM (any changes to AP task validation is strictly limited).

Phase 4: Survey Administration

1. Administer Survey.

a. Utilize CGBI (or its equivalent) or the Pay and Personnel Center (PPC) to obtain email roster for survey.

b. Prepare survey for distribution to all individuals.

NOTE: Currently, only Verint or Microsoft Forms survey software are USCG supported.

c. Request RFMC send an e-mail to all rating members regarding the importance of the survey.

d. Make survey available to respondents for a minimum of six weeks. In certain circumstances, extend surveys to meet the required response rate.

e. Develop a matrix of unit type and pay grade in Microsoft Excel format (or equivalent) for recording weekly results.

f. Provide a weekly update to the RFMC and RKM showing the return rate by unit type and pay grade.

Phase 5: Survey Analysis

1. Analyze survey results for each of the following categories.
   a. Rate Return Summary
   b. Findings and Indications of the Task List Analysis
   c. Performance intervention recommendation utilizing the DIF model (located HERE)
   d. Active and Reserve Task Data
   e. Time at Present Unit
   f. Current Pay Grade
   g. Gender
   h. First Assignment in Rating
2. Only Rating Aboard Unit
   a. Senior Rating Aboard Unit
   b. Typical Work Week in Hours
   c. Number People Supervised
   d. Units Assigned To
   e. Job Satisfaction Analysis
   f. Career Intention Analysis
   g. Time to Complete Survey
   h. Maintain all raw data from the survey in a Microsoft Excel file. Provide raw analyzed task data to appropriate stakeholders.

Phase 6: Report Preparation

The steps for the report preparation are in Section VI. Follow the outline below in developing the final report.:

- Table of Contents
- Executive Summary
- Purpose

- Scope
- Project Alignment
- Survey Development
- Survey Makeup
- APs
- Survey Return Rates
- Survey Analysis
- Findings and Indications of the Task Inventory Analysis
- Performance Intervention Recommendations
- Task Data Table Job Aid
- The Complete "World of Work"
- Active Duty Task Data
- Active Duty Shipboard Task Data (if applicable)
- Active Duty Shoreside Task Data (if applicable)
- Reserve Task Data
- Active Duty Demographic Data
- Active Duty Job Satisfaction Data
- Active Duty Career Intentions Data
- Reserve Demographic Data
- Reserve Job Satisfaction Data (if applicable)
- Reserve Career Intentions Data (if applicable)

Phase 7: Out Brief

The general steps for the Out Brief are located in Section VI.

NOTE: All Customer questions and concerns must be resolved prior to the Out Brief.

4.5 Workforce Requirements Analysis (WRA)

4.5.1 Introduction

The demand for resources in the USCG Training System is constantly changing including the demand for personnel. The demand for specific skills in the fleet initiates new courses, terminates old courses, and increases/decreases classes. A WRA is the tool used to identify how these changes affect the required personnel in each Training Division within each TRACEN. Statistical modeling

determines staffing requirements and provides FORCECOM with accurate and reliable data to make personnel decisions.

4.5.2 Target Audience

The target audience for a WRA is:

- USCG Staffing Requirements Analysts (Performance Consultants and HPT Practitioners)
- USCG Training System Managers
- Commercial Contractors

4.5.3 Background

In 1992, the U.S. Army Force Integration Support Agency (USAFISA) conducted a study to determine resident training staffing standards for USCG TRACENs to include Cape May, NJ; Petaluma, CA; Elizabeth City, NC; and Yorktown, VA. This study provided the USCG the capability to project future TRACEN staffing requirements for all resident training functional areas. The study involved the collection of documented data and accounting for the time spent in these functional areas. The TRACEN Instructor Staffing Standards cover staffing directly related to resident instruction, facilitated online training (FOT) and blended training solutions

Currently, FC-T/L collaborates with appropriate HQ offices to develop staffing equations for resident instruction, training analysis, design and development, and the evaluations for all USCG TRACENs. This should occur triennially.

4.5.4 Resident Instruction Method

Each TRACEN is analyzed according to the work performed at each level of their specific organizational structure. The process is the same regardless of how the TRACEN is organized. For the functional area of resident instruction, curriculum outlines are reviewed and validated to determine the minimum number of instructor contact hours (ICH) required to teach each course. The work required to teach each course but not included in a staffing equation (known as additives) is validated and updated. The indirect work performed not required to teach any course is also analyzed.

The primary workload factors for Resident Instruction are the ICH. Analysts use the staffing equations developed by FC-T to calculate the earned instructors per course. The following steps are performed to calculate this number:

1. Calculate monthly instructor contacts hours (MOICH).

$$\frac{\text{Number of Annual Convenings} \times \text{One-Time ICH}}{\text{12 months}} = \text{MOICH}$$

2. Apply the specific staffing equation to calculate earned hours per course.

$$\text{"A" Value} + (\text{MOICH} \times \text{"B" Coefficient}) = \text{Earned Hours}$$

NOTE: The "A" value and "B" coefficient represents the required core tasks performed before, during, and after instruction to execute each convening as well as the required instructor "break-in" time for the specific school/branch/TRACEN.

3. Calculate total instructor workload per course.

$$\text{Earned Hours} + \text{Additives} = \text{Total Instructor Workload}$$

4. Calculate the number of instructors earned per course.

$$\frac{\text{Total Instructor Workload}}{\text{Manpower Availability Factor (MAF)}} = \text{Earned Instructors Per Course}$$

5. Calculate Indirect Work.

$$\frac{\text{Total Indirect Work}}{\text{MAF}} = \text{Earned Instructors for Indirect Work}$$

6. Calculate the total number of staff earned at each school.
Direct Work is the earned instructor per course and Indirect Work is the earned instructors to perform additional tasks not required to execute classes.

$$\text{Direct Work} + \text{Indirect Work} + \text{Overhead Staff} = \text{Total Earned Staff}$$

NOTE: Earned instructors will be rounded using the method described in the Manpower Requirements Determination Techniques, Tactics and Procedures (TTP). Overhead staff are positions that do not execute classes but are required to support the TRACEN (e.g., School Chief and Yeoman).

7. Identify the staffing delta.

$$\text{Total Staff} - \text{Total Earned Staff} = \text{Delta}$$

NOTE: Deltas for each organizational level will be aggregated at the next higher level and a total for the training division will be the final output for the study.

4.6 Rapid Analysis (RA)

4.6.1 Introduction

Another tool in the analyst's toolkit is the Rapid Analysis (RA). Sometimes referred to as a "quick look," an RA is more of an adaptative methodology than it is a different type of analysis. In an RA, the team will develop a preliminary understanding of the problem, conduct an intensive inquiry to gather findings, and develop data-driven recommendations to provide the client actionable results they can implement at a speed relevant to the issue.

At its core, an RA is a way to quickly develop an understanding of a situation and has the following qualities:

- Adaptable
- Focused on quickly producing and crafting outputs for known stakeholders
- Limited in scope
- Actionable results in three months or less

- Intensive, team-based inquiry
- Iterative data analysis

4.6.2 Methodology

The RA methodology has grown organically out of a need to address emergent problems quickly, when it is not possible nor practical to wait the length of time necessary to conduct a full analysis. When deciding whether to employ an RA, it is important for both the analyst and the client to understand what it is, and what it is not. A RA is not a holistic look at the program, nor will it offer a 100% solution. It will, however, offer the client data gathered using time-proven HPT principles and recommendations based on conclusions extrapolated from available data. If the trade-off between time and comprehensiveness of the analysis is acceptable to the client, then an RA may be the best tool for the job.

4.6.3 Highlights

Even though rapid analyses do not adhere to a specific industry-standard, an efficient RA follows some of the steps of other analysis types (i.e. FEA, JTA, TRA) but at an accelerated tempo. The project lead determines which steps to include based on the client's needs and the ultimate goal of the analysis. In this context, the term 'rapid' means omitting, scaling down, or accelerating certain analysis steps. This is a truly hybrid approach to analysis, including only the most critical elements of various analysis types—all completed rapidly. Due to severely restricted time constraints, the client and the analysis team must agree on the following:

- All personnel associated with data collection (i.e. subject matter experts, accomplished performers, program representatives) must be readily available to the team over the course of the analysis. An RA cannot accommodate meeting/interview delays due to consistent scheduling conflicts.
- Except in unusual circumstances, data collection and interviews occur remotely. The quick turnaround of an RA typically does not allow time for the team to travel to conduct in-person observations and meetings.
- The scope of the analysis must remain limited. Scope cannot creep due to new information.
- Surveys, if used, can only be open for very short windows. Therefore, it is important that an influential champion be actively engaged in generating target audience participation.

Complete RAs within 60 days of alignment, provided there are no significant barriers. Example of a Rapid Analysis can be found HERE.

SECTION V: Analytical Support Tools

Introduction

This section provides tools for evaluating proposed training curriculum, ensuring its alignment with organizational objectives, resource constraints, and performance improvement goals. A Training Curriculum Comparison assesses alternative programs to determine the most effective instructional design and content delivery methods. A Cost Analysis evaluates financial implications, including development, implementation, and sustainment costs. Additionally, a Goal Analysis measures the program's effectiveness in meeting operational and strategic objectives. Finally, a SWOT Analysis identifies strengths, weaknesses, opportunities, and threats, ensuring informed decision - for optimizing training outcomes. This structured evaluation will support the selection of a training program that is both cost-effective and mission-aligned.

5.1 Training Curriculum Comparison (TCC)

5.1.1 What is a Training Curriculum Comparison?

A training curriculum comparison is exactly what the name implies: it compares existing job tasks and their training requirements to an existing course or curriculum to determine if that course fully meets the Coast Guard's training needs. A curriculum comparison can be a stand-alone analysis, part of the primary project/report, or an appendix to another report.

Establish a process that provides a task list, and if possible, training and job aid requirements before conducting the TCC. This is usually done with a JTA or an FEA. However, a task list may also come from extant data research, such as national standards, a previously signed curriculum outline, or Coast Guard policy and these task lists might not include training and job aid requirements. Follow a TCC with a Cost Comparison Analysis to provide the costs for options resulting from the TCC. Decide during alignment whether the TCC is part of a larger analysis or stand-alone.

5.1.2 Why is a TCC Important?

A training curriculum comparison provides information for stakeholders to make several types of important decisions, such as:

- Does an existing Coast Guard course require updating?
- Does an existing government off the shelf course (GOTS) meet the needs of the Coast Guard?
- Does an existing commercial off the shelf course (COTS) meet the needs of the Coast Guard?
- If a course covers the tasks, does it cover it at the correct training level? (Does it match the performance support requirements?)

5.1.3 Factors to Consider for the Comparison

- Does a task list exist?
- What materials are available for comparison (such as course description, job aids, Performance Test, Student Guides (SGs), Instructor Guides (IGs), media, etc.

- Alignment of curriculum materials to Coast Guard training system requirements
- Availability of SMEs and APs to assist in the comparison

5.1.4 How to do a TCC

A TCC can be a complex process. Ideally the process will include all the steps. However, the analyst may not have access to all the information needed to complete all the steps. For example, course information may be proprietary, the curriculum outline may be outdated, or other similar constraints may arise. When reporting, clearly describe how many of the steps the analysis includes and why.

The process includes:

- Step 1: Acquire task list
- Step 2: Isolate training level interventions (if available)
- Step 3: Identify all the relevant course(s)
- Step 4: Determine which tasks are covered in the course
- Step 5: Determine how relevant the course training materials are to the task
- Step 6: Evaluate for thoroughness of the content at the task level
- Step 7: Evaluate course for coverage
- Step 8: Draft the report

Step 1: Acquire Task List

A TCC is normally performed as an additional analysis to a JTA or FEA or other analysis which will provide the task list. Develop a list from an extant data review, and confirm it with APs and SMEs, if no list currently exists.

Step 2: Isolate Training Level Intervention (if available)

Identify and separate tasks with a training performance support level intervention. For example, Job Aid with Introductory Training (JAIT), Job Aid with Extensive Training (JAET), or Train to Memory (TTM). Eliminate tasks that indicate no training or only job aid from the training curriculum comparison.

Step 3: Identify All the Relevant Course(s)

This will require research and out-reach to vendors (including commercial sources), Department of War or Coast Guard training centers, and other government agencies, as applicable. Coast Guard personnel/resources who can assist in the identification of existing courses may include as Training Managers/Acquisition Managers, Course Chiefs etc.; however, these may not be the only resources required to identify the following possible curricula:

- Existing Coast Guard Courses — Coast Guard curriculum outlines can be found in the FORCECOM Curriculum Library on the FORCECOM Training SharePoint site, including Curriculum Change Notices
- GOTS — (Government off the shelf) government agencies with available training

- COTS – (Commercial off the shelf) commercial organizations with available training
- Original Equipment Manufacturer/Factory (OEM) Training , etc.

"After identifying all applicable courses, request and obtain copies of course materials. Be aware that a fee may be required to release materials. Some vendors may not release their curriculum citing proprietary rights.

NOTE: Course observations, consultations/interviews with curriculum venders are options for completing the comparison and final determination of coverage.

Step 4: Determine Which Tasks Are Covered in the Course

This is a simple task to learning objective comparison to see if the objectives match tasks and document the results.

This step primarily determines if the task is included in the curriculum to which it is being compared. This first examination compares the tasks to the course objectives (Terminal Performance Objectives (TPOs), Learning Objectives (LOs), Enabling Objectives (EOs), etc.); in other words, a task-level assessment of the curriculum to determine if the course aligns with the tasks from the task list.

Use APs or SMEs to help identify any matches that may not be obvious to the analyst.

Step 5: Determine How Relevant the Course Training Materials are to the Task

The intent of this step is to determine what training materials are available to continue to the next step.

- How is it trained? By job/training aid, lecture, demonstration, practice, and assessment?
- How relevant is the training material to actual Coast Guard training? For example, models of equipment, supported by job/training aids, technology similarities, etc.

NOTE: This step requires course materials. If the materials are not available, the course comparison cannot continue. Move to step 6 and complete the process.

Step 6: Evaluate for Thoroughness of the Content at the Task Level

This task evaluates how thoroughly a task is covered and assigns it a 'score.' Each task is scored individually. The method of scoring, at a minimum, should include the following:

- **Does not cover:** Does not cover the task at all or may cover a small amount that is not significant enough to score.
- **Partially covers**: The course content does include some but not all of the training requirement; for example, the task may require JAET, but the course may not allow for practice nor test the task.
- **Fully covers**: The curriculum aligns with the performance support requirement using the appropriate delivery methodologies; for example, if JAET, introduces a prepared job aid, includes a demonstration of completion, allows adequate practice, and terminates with a successful exam. Remediation is also a vital requirement for meeting criteria.

- **Exceeds**: The task only requires that the job aid is introduced, but does not require testing, and the course demonstrates the tasks, provides practice, and requires testing. Or the comparison reveals additional steps that are not required for Coast Guard training.

Step 7: Evaluate Course for Coverage

This step evaluates the overall coverage of the course for efficiency and effectiveness of the Coast Guard training requirements. Factors to consider:

- Results of step 6
- Tally by evaluation criteria (does not cover, partially covers, fully covers, exceeds) for each course compared
- Evaluate course for overall content compliance with current Coast Guard policy, procedures, or culture. For example, regulatory requirements, Program requirements, processes specific or unique to the organization, etc.
- Determine if there are any excesses, including how many additional learning objectives are included in the course(s) but not required by the task list; does the length of the course exceed what is required by the Coast Guard or the Coast Guard is willing to accept
- Consider ranking by relevance if more than one course is evaluated
- Course cost, if available (a Course Cost Analysis may be required if not available)

At the result of this step, the analyst will be able to determine what recommendations will be made. For example, the analyst may formulate percentage recommendation options that provide varying degrees of solutions, i.e. one option may provide a 60% solution while another option will provide a 90% solution.

Step 8: Draft the Report

Describe the project driver/problem statement, the analysis process (tell the story), and include the task list, any course curriculum compared to the task list, and a summary of coverage for each course in the report.

Consider process constraints during the comparison. Make sure the report fully explains any caveats or other obstacles/limitations faced during the comparison. Examples may include incomplete materials provided; courses not examined due to accessibility.

A cost comparison analysis (CCA—see Cost Comparison Section) will likely assist decision-makers in evaluating the value for each solution, as the percentage of adequately trained tasks is only one variable in the outcome.

5.2 Cost Analysis

5.2.1 Introduction

Complete cost analyses as a USCG requirement before the organization will resource a project. Conduct them in support of another analysis such as an FEA, SNA, and less often a JTA. Cost analyses allow decision makers with limited funds to select projects that maximize the dollars invested in our people. The analyst(s) must identify the cost associated with each S/K performance improvement

delivery option. Present the information so decision makers can compare each option and select the one that works best for the organization. When conducting an SNA, it is important to determine costs associated with intervention recommendations so the USCG can make decisions for implementation.

5.2.2 Target Audience

The target audience for cost analyses includes:

- USCG FORCECOM Performance Analysts (Performance Consultants and HPT Practitioners)
- USCG FORCECOM Training Managers
- USCG Headquarters Program Managers
- Commercial Contractors

5.2.3 Background

Creating cost analyses are dependent on many different factors. Each analysis project offers a different set of performance improvement options with unique costing requirements. The analyst should identify any constraints or assumptions that can influence the cost associated with these options. The RFA typically outlines which cost analysis type to include in the final analysis report. Analysts must work with the Client to identify the type of cost analysis to include in the primary analysis final report during the Project Alignment Phase and revise it when new cost factors are discovered.

Consider cost analyses as another data collection process and a tool to help determine which S/K improvement option(s) to fund. Selecting the type of analysis at the beginning of the project will ensure the analyst(s) collects the proper cost information. There are three different types of cost analyses that can be conducted on a project: Cost Comparison Analysis (CCA), Cost Benefit Analysis (CBA), and Return on Investment (ROI).

Each of the three analyses have different requirements for completion as well as the amount of information collected. An analyst(s) collects more information transitioning from a CCA to a CBA to a ROI. Analysts should only calculate ROI on products that meet certain criteria as discussed later in this section.

5.2.4 Other Considerations When Conducting Cost Analyses

There are many methods to consider when conducting a CCA, CBA, or ROI. You can use any cost analysis method to compare the cost and benefits associated with different kinds of performance improvement interventions; however, most cost analyses for TRACENs will only look at performance interventions to close gaps in S/K. Other considerations to keep in mind are:

- All cost analyses have a short "shelf-life" since environmental and technological advances change in the workplace. Reevaluate any cost analyses over a year old for validity.
- The analyst(s) should also inform the Customer that all cost analyses are forecasted. Project assumptions and constraints, technological advancements, and other ENV factors can make a forecasted analysis differ from the actual cost incurred after a project's implementation.
- When new technology is part of a cost analysis, it should include documentation of discussions with respective technical centers (i.e. Command, Control, Communications,

Computers, Cyber, and Intelligence Service Center (C5ISC) and USCG Operations Systems Center [OSC] Martinsburg) regarding the feasibility of using the technology in the USCG as well as any associated hidden costs.

- All cost analyses should include the cost data required for budgeting using the USCG's Resource Proposal (RP) process.

5.2.5 Types of Cost Analyses

Below are detailed definitions of each of the three types of cost analyses. As stated earlier, most analysis efforts in the USCG will be a CCA; however, the type of analysis should be discussed and agreed upon with the Customer during the Alignment Phase of the larger analysis project. All cost analyses, regardless of the type performed, will include first-year costs and life-cycle costs for each performance intervention.

Cost Comparison Analysis (CCA)

A CCA presents several performance improvement delivery options and the associated cost for each of these options. Select this type of analysis when qualitative benefits are difficult to quantify or assess the monetary value of the benefit to the organization. Use it to determine whether a project should continue. Advantages and disadvantages are identified for each option.

EXAMPLE

As a result of a FEA, a skills and knowledge gap was identified. A recommendation was made to provide training the force. A CCA was developed to estimate the costs of various training solutions.

Cost Benefit Analysis (CBA)

A CBA calculates cost and benefits then compares the results of each option. It is a method that tries to compare the quantitative and qualitative relative benefits (both negative and positive) of two or more training approaches at a given level of cost. The USCG can evaluate options and identify the most cost effective. To use a CBA, the analyst must identify and compute the monetary benefits associated with the cost of implementing a given solution. There are three major phases to completing a CBA:

1. Calculate cost
2. Calculate benefits
3. Compare results

A CBA generally focuses on isolating the forecasted effects of the given solution to the impact on the business. The program is a success if the forecasted costs for implementing the program are less than the forecasted benefits to the business such as improved productivity, reduced accidents, etc.

EXAMPLE

Coast Guard Emergency Medical Technicians require recertification and there is difficulty meeting the need driven by a quota reduction trend for the resident course.

This analysis explored three options for delivery, in addition to the current resident course, with the goal of determining the most cost-efficient option to keep all Coast Guard EMTs certified.

Return on Investment

A ROI takes a CBA and CCA to the next level of evaluation and conducted only when a monetary value can be applied to the benefits. The ROI is calculated using the program's benefits and costs:

$$\frac{ROI = (monetized\ benefits - program\ costs)\ \times 100}{program\ costs}$$

Base ROI calculations on business impact data obtained after a program has been implemented. Preprogram ROI forecasting is based on being able to accurately:

1. Estimate the changes in business impact data (quantitative benefits or the amount of change directly related to the performance improvement intervention).
2. Convert data into monetary values.
3. Estimate project costs.
4. Identify qualitative benefits.
5. Calculate ROI.

Not every analysis is a good candidate for ROI. Short-term projects or projects that only affect a small percentage of the organization will have difficulty quantifying the time and resources to develop a ROI. Conduct an ROI only on projects with extended life cycles tied directly to organizational strategic initiatives or projects with a high level of accountability due to significant monetary investment.

5.2.6 Factors That Influence Training Costs and Benefits

Once the Customer and analyst(s) agree on the type of cost analysis, the analyst(s) must determine which costs to include in the report. Determine total training costs by adding personnel, equipment, facility, and material costs. Table 7 below provides examples of the type of costs that make up total training costs.

Cost Category	Potential Cost Targets	Cost Considerations
Personnel	➢ Administrators ➢ Instructors ➢ Instructional Designers ➢ Students ➢ Analysts ➢ Developers ➢ Graphic Artists ➢ Contractors ➢ SMEs ➢ APs	➢ Pay and benefits of all direct (government employee) and indirect (contracting) people ➢ Travel ➢ Per diem (government or commercial rate) ➢ Overtime
Equipment	➢ Simulators ➢ Training Devices ➢ Mock-ups	➢ Acquisition ➢ Life Cycle Costs ➢ Setup and Installation Cost
Facilities	➢ Classrooms ➢ Labs ➢ Offices ➢ Libraries	➢ New or Existing Construction, Leasing Spaces ➢ Recurring Maintenance
Materials	➢ Instructor Materials ➢ Student Materials ➢ Office Supplies	➢ Acquisition ➢ Identify existing off the shelf materials from Commercial and other Government Agencies. ➢ Life Cycle Costs

Table 7. Training Cost Examples.

Explore costs for providing various instructional delivery methods associated with a TRACEN in advance. Use different formulas to determine which ones work best for different situations.

NOTE: The Comptroller division can be a good source to use when conducting cost benefit analyses. They can provide standard personnel costs and other data.

5.2.7 Additional Factors to Consider – e-Learning Levels of Interactivity

Other factors to consider when conducting USCG cost analyses are the levels of complexity and student interactivity, especially when an e-Learning method (EPSS, computer-based training [CBT], or web-based training [WBT]) is the recommended instructional strategy for the performance intervention.

Student interactivity is the number and type of interactions a student has with the program. An e-Learning activity can be as simple as an electronic document where the student simply reads information from a computer screen or as complex as using a simulator or virtual reality where every move the student makes interacts and influences the e-Learning environment.

When recommending a level of complexity and student interactivity, consider the following variables:

- Data obtained from SMEs and APs about the performance gap and the level of performance performed by the student to master the learning objective.
- Capability to provide drill and practice exercises based on the complexity of the tasks and its related steps.
- Capability to provide branching paths from simple, moderate, or complex equipment operations based on the students' response/action.
- Computer evaluation of a student(s) performance and intellectual skills by computer based predictive and performance items.
- Provide state-of-the art technology for simulation and communication.
- Allocate available resources towards the project (building, classroom, and laboratory facilities, software and hardware capabilities, product support, and funding).

Consider the following five levels of complexity and student interactivity when developing an e-Learning intervention:

- Level 1: Passive - The student acts solely as a receiver of information.
- Level 2: Moderate Student Interaction - The student makes simple responses to instructional cues.
- Level 3: Complex Student Interaction - The student makes a variety of responses using varied techniques in response to instructional cues.
- Level 4: Real-Time Student Interaction - The student is directly involved in a life-like set of complex cues and responses.
- Level 5: Complex Student Interaction with Virtual Reality - Computer/web based training which includes text graphics and animation with full student interactivity (virtual reality simulation).

It may appear that electronic media training instruction has a significantly higher production cost than resident training. However, depending on the level of complexity and student interactivity when using electronic media, the pay-off is in the learning transfer which can reduce the overall training time by as much as 50%.

NOTE: Industry standards suggest that as students move further away from instructor-led training (e.g., EPSS or self-paced computer-based training), instructional development hours will increase, thus increasing the overall first-year cost.

When calculating the cost for these types of performance interventions, use Table 8 for determining the associated development hours based on the level of complexity and student interactivity for e-Learning instructional strategies

5.2.8 Benchmarking

One of the ways to determine levels of student interactivity estimates is to use some type of benchmark within the industry for the design and development effort required for each developmental hour associated with various instructional strategies. Unfortunately, within the

international training community, there is no agreed upon standard for estimating the number of hours when estimating design and development hours for the various instructional strategies.

Table 8 was created after consolidating interviews of expert e-Learning curriculum design and development organizations and USCG internal e-Learning experts, lessons from International Society of Performance Improvement (ISPI), Association for Talent and Development (ATD), and USCG HPT Conferences, and a thorough review of e-Learning topics and articles. It provides some degree of standardization and outlines accepted ratios concerning e-Learning design and development times, as well as all other instructional strategies considered when closing the S/K performance gap.

Type of Training per 1 Hour (hr) of Finished Instruction	Average Experienced Design and Developer (per 1 hr of instruction)
Traditional Design and Development Instruction	
Stand-up training	38
Instructor-led or computer/web-based training	28
Computer/web based e-Learning Design and Development (from scratch without a template)	
Level 1	93
Level 2	122
Level 3	154
E-Learning Training Developed within a Template	
Level 1	42
Level 2	71
Level 3	132
Simulations	
Level 4 Equipment or hardware (equipment emulation)	142
Level 4 Soft skills (leadership, ethics, etc.)	142

****Based on a web article written by Karl M. Kapp (2017) and derived from a study conducted under ATDs source for e-Learning.**

Table 8. Design and Development Hours Industry Standards (Benchmarking).

5.2.9 How to Conduct Cost Analyses

The steps for conducting any of the three cost analyses are:

1. Review the S/K performance gaps in the outputs of the analysis report (i.e. FEA report). To complete any of the three cost analyses, the analyst(s) must have a completed SNA, FEA, or JTA.

   NOTE: The analyst(s) may be asked to only update the cost benefit analysis section of a previously completed analysis project.

2. Identify the constraints with the Customer (normally the HQ Program Manager), e.g.:

   a. Select the type of analysis to conduct.

   b. Resources available to close the performance gaps.

c. Existing program sponsored efforts to address situation (may require some research).

d. Cultural barriers to implementation.

3. Determine the appropriate instructional strategies based on the Train to Memory, Job Aid with Extensive Training, or Job Aid with Introductory Training requirements.

NOTE: Tasks that require a Job Aid or a Job Aid with Extensive Training are good candidates for online job aids, an EPSS, or a blended solution.

4. Conduct a search to identify if there are any courses or products developed by other government agencies that could be considered as options when conducting one of the cost analyses.

5. Develop at least three options for possible ways to deliver the S/K intervention(s).

NOTE: Resident training will most likely be one of the options.

6. Identify which cost to include for each option and any other associated costs (See 5.2.6. Factors that Influence Costs and Benefits). Costs will identify first year cost and life-cycle cost. Most models will consider the following cost:

a. Personnel cost

b. Training materials

c. Delivery cost

i. Travel cost

7. Total all costs by first year cost and life-cycle cost.

8. Identify advantages and disadvantages for each option. Make sure to capture both quantitative and qualitative benefits.

9. If conducting a CCA, proceed to step 11.

10. If conducting a CBA or ROI, identify measurable benefits (any gain directly resulting from the performance intervention option you are analyzing.) Savings could be for:

a. Time

b. Materials

c. Equipment

d. Reduction of personnel turnover

11. Solving personnel problems as applicable

12. Capture the data compiled in steps 2 through 9 in the cost analysis section.

13. Write the cost analysis report and add as an appendix to the primary analysis report. Consider the cost analysis can be a part of another analysis project or as identified in a Statement of Work (SOW) or the alignment meeting.

14. Circulate the analysis report through internal processes for official approval.

15. Publish the report.
16. Coordinate the Out Brief date and time. The Out Brief does not require face-to-face interaction and may be done via phone conference, video-tele-conference (VTC), or other means.
17. Out Brief cost analyses as part of the larger analysis effort.

5.2.10 Determining Solutions When Conducting a Cost Analysis

Although there are many ways to conduct a CCA, CBA, or ROI, the method selected should produce results that allow decision makers to answer these questions:

For a CCA, CBA and ROI:

- How does this project stack up with other competing training priorities?
- Is the cost so high it does not matter how many performance problems it solves?
- Will this solution really eliminate performance deficiencies?
- In addition, for a CBA and ROI:
- Will this performance intervention or training program provide real benefits (worth) to the organization? Do the benefits outweigh the cost of developing and implementing the intervention?
- How does the project tie into USCG business goals and plans?

5.3 Goal Analysis

5.3.1 What is a Goal Analysis?

People are often expected to perform in ways that do not fit the traditional mold of a terminal performance objective (e.g., a task in a curriculum outline). For example, the goal could be to "communicate effectively," "maintain quality," "live a healthy lifestyle," or "provide a psychologically safe work environment." While these are important goals, it's not clear what actions to undertake to achieve these goals. Goal analysis is a method for defining performance outcomes when goals are stated in vague or abstract terms. It is a process for clarifying what needs to be accomplished to consider the goal completed.

The process for conducting a Goal Analysis is defined in Robert Mager's book, *Goal Analysis – How to Clarify Your Goals so You Can Actually Achieve Them*, third edition, 1997. He describes goals as having one common element, they all sound important and something we want to achieve. When a goal is stated in abstract terms, it is challenging to determine the steps needed to accomplish it. Dr. Mager refers to these as "fuzzy" goals. This section provides a summary of his process, for more information including many more examples, refer to his book. Specific details regarding the book are included in the Reference section of this SOP.

5.3.2 When to Use Goal Analysis?

Use goal analysis to identify the performance outcomes needed to complete the goal. This type of analysis is generally used as a complementary or an "add-on" to other types of analysis.

As an analyst when initially aligning on a project to determine desired outcomes, it is common for a client to define success or training needs through stating overarching fuzzy goals. Use the Goal Analysis methodology to work backwards from a stated goal to define the performance necessary to achieve it. The actual performance then becomes the focus of the Goal Analysis itself and allows the analyst to define project success and set a proper scope.

Use it during any type of job/task analysis when the desired behavior is not stated as a task. For example, stating a goal as 'communicate effectively' without additional clarity makes it difficult to determine the actions needed to achieve it.

Most Goal Analyses will not take very long to complete and generally can be conducted in one or two sessions to ensure alignment on the intention of the goal and how the analyst will measure goal achievement. For this type of analysis to be successful, it is critical to have a concise list of stakeholders who can quickly validate the performance necessary to achieve the stated goal(s).

NOTE: If conducted as a "stand alone" analysis, the analyst should complete an abbreviated/informal alignment process with the client to ensure project expectations are met. Since this type of analysis is generally use as complementary or an "add-on" to other types of analysis, completing a formal project alignment, identifying stakeholders, and developing a data collection plan are not necessary because the Goal Analysis effort are captured in these supporting documents for the larger analysis effort to include the data collection plan.

5.3.3 Why is Goal Analysis Important?

Goal Analysis is a systematic approach which breaks down a goal into its requisite tasks and desired behaviors to achieve success. It provides the analyst with an opportunity to ensure the goal(s) continues to align with the overall direction or outcome of the project. It provides a chance to identify difficulties encountered or best practices associated with a specific task aligned with goal achievement.

5.3.4 Who Conducts the Goal Analysis?

For the initial Goal Analysis, Mager suggests the optimum number of individuals as one or two (page 101) because the more people involved in this process the longer it will take to reach consensus on defining the required performance or tasks necessary to accomplish the goal. So, an individual or small group of two or no more than three can develop a Goal Analysis, but it will be more efficient if the client/customer who established the goal(s) is part of this small group effort. It could be helpful to have one analyst facilitate the session with an additional analyst available to record the responses during the process. However, if the client/customer is not available, then the analyst(s) can work with one other SME to draft an initial list of all the components of the meaning of the goal that define success. Share this initial draft with the client/customer to ensure alignment. See the individual steps in the following "Goal Analysis Process" section for more details.

5.3.5 Goal Analysis Process Guidelines

When conducting this type of analysis, it can be easy to confuse process with outcomes (goal accomplishment). For example, "Make a cake" is an outcome-based statement, whereas "develop cake baking skills" is process-based. Mager provides the following guidelines to address this concern (Figure 10):

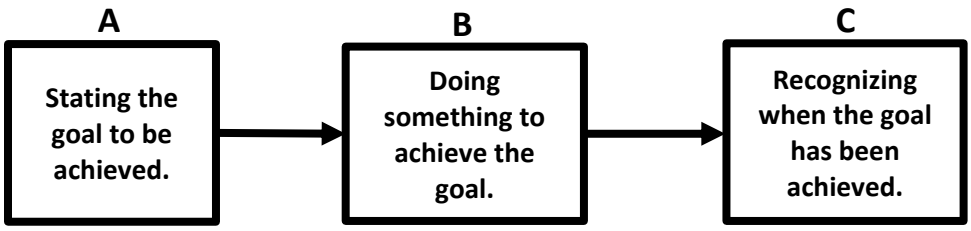

Figure 10. Goal Analysis Process Guidelines.

"Our concern in the book is with Items A and C, because until we know how to recognize our destination (achievement of the goal), we don't know what to do to get there. The procedure for achieving goals, then, is first to say what the goal is (A), then to describe how the goal accomplishment is to be recognized (C) and then finally to take action (B)." (Mager, 1997)

5.3.6 Goal Analysis Process

This process is the same regardless of the cause for the analysis it is complementary to. The following steps assume that the analyst, individual, or small group conducting the analysis have convened. These are the basic steps to a Goal Analysis:

- Step 1: Write down the goal
- Step 2: List Performances that exemplify goal achievement
- Step 3: Sort the list and eliminate any remaining "Fuzzies" goals
- Step 4: Describe performance in complete sentences
- Step 5: Test for completeness
- Step 6: Present results to decision maker(s)

Step 1: Write Down the Goal

The first step is simply to write down the goal as it exists in current terms. In a group setting, it helps to write the goal on a white board or flipchart to allow for rapid revisions. Use words that are familiar to the client/customer, regardless of how "fuzzy" or vague they maybe. It does not have to be long or complicated or even a complete sentence. For example, the list may include items like:

- Get healthy or live a healthier lifestyle.
- Maintain quality.
- The employee should have a good attitude regarding their co-workers.
- Conduct themselves ethically.
- Provide a psychologically safe work environment.

Using the "Goal Analysis Process Guidelines" diagram presented above, this step can be summarized in this way. People can almost always agree with each other on the importance of a vaguely stated goal (A), such as "maintain quality." However, they will not necessarily agree on the specific actions (B) that should represent the definition of those things (C).

The objective of this step is to write down the goal, using whatever words that best describe the intended outcome.

NOTE: When conducting a goal analysis, be sure to be clear about who is performing the actions associated with accomplishing the goal. For example, the actions representing the goal of "be safety conscious" are one thing for a Boatswain Mate and something quite different for a Yeoman.

Step 2: List Performances That Exemplify Goal Achievement

In this step, try to answer the question, "How will I know when I see it?" List everything a person would have to say or do to confirm that he or she has met the goal. Write down everything that comes up. Do not edit or evaluate statements; this will occur later in the process. The purpose right now is to get everything down that indicates achievement of the goal.

This step can be the most challenging because many times this step can result in getting more "fuzzies." Sometimes, especially at the beginning, it may be easier to describe the goal using other vague words. For example, using the goal above of "get healthy," the list might include things like "exercise more," "eat right" or "lose weight," as ways to recognize achievement of the goal. However, in their current form, these are just as "fuzzy" as the original goal but write them down anyway. It is important to write down everything. In future steps, any item can be crossed off, but an item can't be crossed off if it is not on the list. Dr. Mager suggests this rule for this step: "*First you get it down, then you get it good"*.

Mager presents five strategies to help redefine 'fuzzies' into measurable, observable performance. The analysis team can use these strategies to break down fuzzy goals into performance outcomes that directly contribute to achieving the goal.

- Strategy 1 - Answer the question "What will I take as evidence that my goal has been achieved"?
- Strategy 2 - Given a group of people, separate them into two groups: those who achieved the goal and those who had not. Establish a definition which determines the basis for who has and who has not achieved the goal.
- Strategy 3 - Imagine that someone else will be charged with the responsibility of deciding which person has achieved the goal. What will the instructions be to tell this person how to proceed? What should the person look for? Dr. Mager asks, "*How will the person know a good achiever when he or she sees one"?*
- Strategy 4 – Direct the stakeholders to think of a person who has already achieved the goal (or models the desired behavior). What hypothetical performance(s) could be observed which indicates the goal is being achieved? Write these down. This strategy works well with goal statements like "provide excellent customer service" or "have a good attitude." It's important to realize that if you cannot think of a real person who exemplifies your goal, you may need to re-evaluate the goal, as your expectations may not be realistic.
- Strategy 5 – If all else fails, try the "back door." Just write down all the reasons you would never point to someone and say, "This person represents the goal." What behaviors, or absence of behaviors, would cause you to say, "This is not someone who has achieved this goal, and this is why." Once the negative items are listed, turn them into positives statement describing the things a person does (and does not do) to accomplish the goal.

At the conclusion of this step, the question, "How will I know when I see it?" has been answered. *Write down the performance that would cause you to agree the goal has been achieved, without regard for duplication or "fuzziness."*

Step 3: Sort the List and Eliminate Remaining "Fuzzies"

Once a good list is generated, review the items and their validity. At this stage, eliminate duplicate performance outcomes and better define or remove 'fuzzy' statements. Working with the previous example from Step 2, "get healthy," some additional "fuzzies" were identified: "exercise more," "eat right" or "lose weight." These could be turned into performances by simply adding parameters or measurements. For example, "exercise more" could be rewritten as: "Exercise a minimum of three times per week." That might be one of the performances that would show achievement of the goal "get healthy."

In this step:

- Identify redundancies or duplications, where similar words describe the same goal or performance. For example, "takes responsibility" and "takes initiative" convey the same action for the goal. Eliminate duplicates or reword them to clearly differentiate the needed performance. Look to cross-off any items that are determined to be no longer relevant to attaining the goal.
- Place a checkmark by any item that does NOT qualify as a performance. If possible, reword it to clearly identify the performance needed to achieve the goal and remove the checkmark. For each remaining "fuzzy" goal indicated by the checkmark, restart the process by writing it down as a new goal (Step 1) and continue until you have a list of only performances (Steps 2 and 3).
- Ensure remaining items describe outcomes, not processes. For example, "Make a cake" is an outcome-based statement, whereas "develop cake baking skills" is process-based. If a process is listed, eliminate it. The goal analysis aims to recognize outcomes, not create them.

NOTE: Mager summarizes this step as follows. Once a goal has been written down and a list has been drafted of the things you think would cause you to agree the goal has been achieved, sort out the list. Remove duplicates and any items that, on second thought, are deemed unwanted.. Check abstractions, and mark performances in some other way. Then write each remaining goal (abstraction) on a separate piece of paper. Repeat the process until every item remaining is either a performance or a non-performance; either a "does it" or a "doesn't do it."

Step 4: Describe Performances in Complete Sentences

During this step of the process, take each performance that has been identified and write it as a complete sentence. This helps define or "fine-tune" what is really meant by the statement. For example, if the list under the "get healthy" goal example from previous steps had "exercise more," "lose weight" and "eat more fruits and vegetables" as performances, then they could be written as follows:

To achieve the goal "Get Healthy" means to:

- Exercise 45 minutes per session, three sessions per week.
- Lose 10 pounds over the next three months.
- Eat a minimum of three servings of fruits and vegetables every day.

Each sentence should describe an outcome that must be achieved to say the goal has been reached. The performance statements should address what the goal means to the client/costumer in their situation.

The results from this step will make it easier to test these outcomes to see if they truly reflect what is meant by the goal and it will help with the decisions as to what to do next.

The task during this step is to write a complete statement for each performance, describing the nature, quality, or amount you will consider acceptable for each desired performance (outcome). Typically, this will be a single sentence, however sometimes it may require two or three sentences to ensure clarity - to truly reflect the action that must be achieved.

NOTE: It is common for the initial goal statement to evolve. The goal analysis helps determine the necessary actions for successfully achieving the goal. Throughout this process, refining the language to ensure the desired outcomes is a natural occurrence.

Step 5: Test for Completeness

The last step is to test for completeness by asking, "If all these things occur as described, would I be willing to say the goal has been achieved?" If the answer is:

- Yes, then your goal analysis is complete.
- No, then you need to answer this question, "What else would have to happen before I would agree the goal had been achieved?" Alternatively, determine what performance is missing or perhaps needs to be defined further. Add the missing item or re-defined performance statement and ask the initial question for Step 5 again.
- If there are items still missing, then complete Step 1-5 above until the performances needed to call the goal achieved have been identified.

Step 6: Present Results to Decision Makers

This is an optional step and only needed if the client/customer was not part of the Goal Analysis process (Steps 1 – 5). Present the results to the client/customer and ask if they agree with this statement from Step 5, "If all these things occur as described, would I be willing to say the goal has been achieved?" When the client/customer answers "yes" the goal analysis is finished, continue to Step 7.

Step 7: Return to the Formal Analysis for This Goal Statement

If the Goal Analysis was used to navigate through a challenging project alignment with unclear goals, return to alignment, and proceed with the project. Use the Goal Analysis as an add-on to a more robust analysis, and proceed with the project, resuming the analysis with the better-defined goal.

For a more in-depth look into this topic, read Dr. Robert Mager's book, *Goal Analysis: How to clarify your goals so you can actually achieve them*, third edition, published by the Center for Effective Performance, 1997.

5.4 Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

5.4.1 What is a SWOT Analysis?

A Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis is a method for evaluating the overall strategic position of a particular situation. Perform the SWOT analysis on a product, a service, an organization, or even an individual (e.g., for career development). Conduct the analysis as a standalone effort, as part of a larger initiative such as a Strategic Needs Assessment (SNA), or informally to help stakeholders develop a deeper understanding of the situation being analyzed. The result is information vital to strategic planning and decision making.

A SWOT analysis identifies positive and negative factors that impact success, both inside and outside the organization, group, or individual. There are two sides to a SWOT analysis, internal and external.

1. The ***strengths*** and ***weaknesses*** are internal influences, and are the factors over which the organization, group, or individual has control.
2. The ***opportunities*** and ***threats*** are external influences, and are the factors over which the organization, group, or individual may not have direct control over but must, at a minimum, be acknowledged, addressed, or mitigated.

Use a SWOT analysis to inform large and small decision making. It can help to determine the efficacy of something as small as introducing a new product or service, or something as large as acquiring a new operational platform or merging specific enlisted rates. Conducting a SWOT allows a group to capitalize on strengths, identify weaknesses, take advantage of opportunities, and mitigate threats. Done properly, a SWOT will have two results: an understanding of the "big picture" of the most important factors that influence success, and a clear action plan, a series of steps to take to move toward the end goal.

5.4.2 When to Conduct a SWOT Analysis?

There are numerous situations in which a SWOT analysis could be beneficial as this approach offers helpful perspectives at any stage of an effort, such as:

- Explore possibilities for new efforts or solutions to problems.
- Explore the efficacy of a new venture, product, acquisition, or merger.
- Make decisions about the best path for the initiative.
- Identify opportunities for success in context of threats to success and clarify directions and choices.
- Determine where change is possible. When at a juncture or turning point, an inventory of strengths and weaknesses can reveal priorities, as well as possibilities.
- Adjust and refine plans mid-course. A new opportunity might open wider avenues, while a new threat could close a path that once existed.
- Decide how to invest an increase in funding.
- Help in identifying core competencies of the individual, group, unit, or organization.
- Reveal competitive advantages.

- Analyze prospects for sales, profitability, and product development.
- Allow for the development of contingency plans.

Additionally, SWOT analysis is an excellent way to organize information gathered from studies or surveys. It can offer a clear way and standard presentation format for communicating about the initiative, program, or situation.

5.4.3 Why is SWOT Analysis Important?

SWOT analysis is a process that can help challenge risky assumptions and to uncover dangerous blind spots about the organization's performance. It is a process to identify where the organization or subject of the analysis is strong and vulnerable, as well as where it should defend and attack. When used carefully and collaboratively with primary stakeholders, it can deliver new insights on where the individual, group, unit, or organization (from here and after these options will be referred to as the "analysis subject") currently is and what strategies can be employed to achieve a successful outcome.

For example, the project team may recognize some of the analysis subject's strengths. However, until they compare these strengths to weaknesses and threats, they risk overestimating the influence of strengths. Equally, the project team likely has reasonable concerns about some the analysis subject's weaknesses but, by going through the analysis systematically, the team could find an opportunity, previously overlooked, that could compensate for the weaknesses.

Remember, perform a SWOT analysis to reveal positive forces that work together and identify potential problems that need recognition and possible action. Develop an action plan to address the next steps.

5.4.4 Who Conducts the SWOT Analysis?

While any individual or group can conduct a SWOT analysis, stakeholders who will be most affected by the results should conduct it for maximum effectiveness. The most common users of a SWOT analysis are team members and project managers who are responsible for decision-making and strategic planning for the problem, program or situation being addressed by the analysis.

Each person or group offers a different perspective on the strengths and weaknesses of the issue/problem and has different experiences of both. Likewise, one staff member or stakeholder may have information about an opportunity or threat that is essential to understanding the position and determining the future.

Having more than one person working on the analysis will help to ensure it does not include biased or subjective information. It is also helpful to think of the analysis process as a collective enterprise by having people from different parts of the organization participate, so they can chime in about factors of which other stakeholders might not be aware.

5.4.5 What Makes a SWOT Analysis Work?

Due to the collaborative nature of a SWOT analysis, the working group will need certain qualities to succeed:

- Trust – The questions, particularly in the weaknesses and threats categories, may be uncomfortable. The group must be at a point in its working relationship where weaknesses and potential threats can be faced openly and objectively.

- Change – Having the ability and willingness to implement change.
- Varied Experiences – The team should be representative of the entire planning/project team.
- Time – Taking time to do a thorough analysis and assessment will help the group move forward in developing a workable action plan.

5.4.6 What are the Elements of a SWOT Analysis?

The four elements of SWOT analysis, illustrated in Chapter 3 of *The Essential Guide to SWOT Analysis* by Justin Gomer and Jackson Hill, are as follows in Figure 11:

Figure 11. Four Elements of SWOT Analysis.

Strengths – Charlie Loannue describes strengths in *SWOT Analysis – An Easy to Understand Guide (2012), as***,** "The resources and capabilities that can be used to develop a competitive advantage." They are within the organization's control, so they are internal.

- Consider all the things an analysis subject does well.
- Positive tangible and intangible attributes internal to an analysis subject.
- Consider if it provides a competitive advantage over your competitors.
- Ask, how can we use and capitalize on each strength?

Weakness – Factors that are within an organization's control that detract from or impede its ability to attain the desired goals or outcomes. Like strengths, weaknesses are internal. True honesty in this phase is critical.

- Think about factors such as personnel, physical and financial resources, and systems and processes.
- Characteristics that are holding the analysis subject back from being as successful as others performing the same actions or providing the same services.
- Weaknesses may also relate to the physical attributes of the subject being analyzed. One example of such a physical trait for the analysis subject of a unit would be its location.
- Ask how we can improve each weakness?

Another way to think about weakness is to think about it as the absence of strength. The goal would be to turn these weaknesses into strengths. Doing so, however, requires an honest assessment of where the analysis subject needs to improve.

Opportunities – External events/happenings that may help achieve goals or outcomes. They aren't entirely within the organization's control, but the group can certainly do its best to take advantage of

them. These opportunities could be specific to the problem, program, or situation being addressed by the analysis.

- External attractive factors represent the reason for an organization to exist and develop. For example, what are the needs of your customers that your field does not currently address?
- What opportunities exist in the environment, which will propel the organization forward? Identify them by their "time frames."
- Ask, how can we exploit and benefit from each opportunity?

The key with opportunities is that they must be acted on to take advantage of them.

Threats – External events/happenings that may impede or prevent achievement of goals or outcomes and are on the other side of opportunities. The Harvard Business Review defines threats as "possible events or forces outside of your control that your company or unit needs to plan for or decide how to mitigate."

- External factors beyond the analysis subject's control, which could place the mission or operation at risk.
- The analysis subject may benefit by having contingency plans to address them if they should occur.
- Consider new legislation, funding concessions, technology innovations, etc.
- Classify them by their "seriousness" and "probability of occurrence".
- Ask how can we mitigate each threat?

5.4.7 SWOT Analysis Process

The SWOT analysis process is the same regardless of the motive for the analysis, e.g., planning for a new product or how best to resolve a work issue. These are the basic steps to a SWOT analysis:

- Step 1: Align Project:
  - Identify topic/subject of the analysis.
  - Select the SWOT team members.
  - Draft data collection plan.
- Step 2: Collect data for the opportunities (O) and threads (T) external elements. *
- Step 3: Collect data for the strengths (S) and weaknesses (W) internal elements. *
- Step 4: Match internal strengths with external opportunities (SO).
- Step 5: Match internal weaknesses with external opportunities (WO).
- Step 6: Match internal strengths with external threats (ST).
- Step 7: Match internal weaknesses with external threats (WT).
- Step 8: Summarize the data for each SWOT element (Steps 2 through 7).

- Step 9: Review your findings and finalize analysis results.
- Step 10: Identify "next steps" you plan to take.
- Step 11: Draft Action Plan document.

***NOTE: Steps 2 and 3 can be completed in any order, but both must be completed prior to continuing to Step 4.**

Step 1: Align Project

This type of analysis can be formal with requirements for full project alignment as described in Section III. Use it informally for a quick check to ensure the team is on the right track or for an individual to identify their professional development strategies. When used informally it may not be necessary to conduct and document a full project alignment as described earlier in this instruction, but the following steps will still need to be completed.

- **Identify topic/subject of the analysis.** Remember from prior text, a SWOT analysis can be performed on a product, a service, an organization, or even an individual (e.g., career development). The results of a SWOT analysis directly highlight the merits of an objective or contemplated change. Therefore, a clearly articulated objective that will serve as the focus of the analysis is paramount.

  NOTE: If the client is considering multiple changes or objectives, it is a best practice to conduct an individual SWOT for each focus area. Synthesize overlapping strengths, weaknesses, opportunities, and threats between related initiatives to create a more comprehensive and integrated approach.

- **Select the SWOT Team Members.** The goal of this sub-step is to ensure that the primary stakeholders are represented. Include the client, FORCECOM, and any SMEs or others with specialized knowledge about the topic/subject or problem. For more ideas of stakeholder involvement on the analysis team, refer to, "Who Conducts a SWOT" and "What Makes a SWOT Analysis Work" earlier in this section.

- **Draft the data collection plan.** Identify the data to be collected, the sources from whom it will be gathered, and the method(s) for collection. For example, one-on-one interviews, survey stakeholders, or get a group together to brainstorm. If time allows, using various methods is generally best, but depending on the topic, it may be possible to collect necessary data in one facilitated brainstorming session. Let the parameters of the topic or problem being analyzed guide the process.

It is helpful to prepare questions related to the specific situation or product analyzed. Refer to, "What are the Elements of a SWOT" for different questions to ask. Complete an extant data review of internal and external sources to identify specific performance indicators, staffing trends, policies, etc. Again, let the parameters of the topic or problem of the analysis guide data collection needs. For more information, refer to the "Data Collection" section of this SOP.

Remember to keep a SWOT analysis short and direct – but only as short and simple as the application or situation demands – it is about fitness for purpose. Avoid unnecessary complexity and over-analysis.

NOTE: A SWOT Facilitator Brainstorming document (located HERE) supports the data collection process for the following steps 2 through 7. For more information on techniques for successful

facilitation of meetings see Ingrid Bens's book, "Facilitation at a Glance: Your Pocket Guide to Facilitation.

Step 2: Collect Data for the Opportunities (O) and Threats (T) External Elements

Identify what external opportunities presently influence the analysis subject. List foreseeable opportunities that exist in the future; these represent potential future strengths. Follow the same process for threats, listing present and future threats. Forecasted threats represent potential future weaknesses. When looking at external elements consider the following factors: political, economic, social, technological, legal, and environmental. Include any trends (for example social, demographic, economic, service expectations, etc.). Prioritize, capture, build on, and optimize opportunities. Threats need to be countered or minimized and managed.

NOTE: Distribute the SWOT analysis template individually or in a group based on the data collection strategy. If completing individually, then in the group meeting, combine individual answers for steps 2 through 7. If collection data in a group meeting, refer to the SWOT Facilitator Brainstorming Process Job Aid to support the data collection process for steps 2 through 7.

Step 3: Collect Data for the Strengths (S) and Weaknesses (W) Internal Elements

S and W relate to those abilities, strategies, programs, actions, and reputation of the analysis subject. They also include those resources that can access/leverage (e.g., budgets, grants, volunteers, inter-agency partnerships, etc.). When looking at internal elements consider the following factors: people, resources, marketing, operations, finances, and innovation/new ideas. Identify all the strengths that exist now for the analysis subject. Another words, what are the core competencies? Then, list all current weaknesses and areas that need improvement. Be realistic and honest about all strengths and weakness. Maintain, build upon, or leverage strengths. Remedy, change, or stop weaknesses.

Step 4: Match the Internal Strengths with the External Opportunities (SO)

Opportunities are potential future strengths. Compare data from current internal strengths with external opportunities to identify future opportunities that can be built upon and optimized. Sort the list in order of priority for action. Remember, strengths are factors that positively influence success. The goal is to maintain strengths, build on them and use them as leverage.

Step 5: Match the Internal Weaknesses with the External Opportunities (WO)

Weaknesses are factors that impeded success or slow progress. The goal with listing weaknesses is identifying feasible remedies. This is accomplished through comparing the data from internal weaknesses to external opportunities and identifying what actions need to be taken to manage all current weaknesses to optimize any future opportunities. Remember, opportunities are presented by the environment within which the analysis subject operates.

Step 6: Match the Internal Strengths with the External Threats (ST)

Strengths are the notable factors that directly drive success, so the goal is to maintain them, build on them and use them as leverage. Compare data from internal weaknesses to external threats and determine the actions needed to minimize or remedy future threats.

Remember, threats arise when conditions in the external environment jeopardize the reliability and success of the analysis subject.

Step 7: Match the Internal Weaknesses with the External Threats (WT)

Threats are potential future weaknesses. Existing weaknesses exacerbate or increase the impact of threats if left unchecked. Compare data from internal weaknesses to external threats and determine the actions needed to manage future threats or counter them with effective strategies.

Step 8: Summarize the Data for Each SWOT Element (Steps 2 Through 7)

Complete the analysis by collaborating on each category in steps 2 through 7. Use a SWOT matrix (found HERE) to capture the findings. The analysis should distinguish between where the organization is today and where it could be in the future. Discuss, organize, merge and cluster the information into categories (such as demographics, policy, technology, service expectations, etc.). The summary should answer the following questions:

- How can we use and capitalize on each strength?
- How can we improve each weakness?
- How can we exploit or benefit from each opportunity?
- How can we mitigate each threat?

NOTE: Various SWOT templates (found HERE) are available to summarize the data, or to create one that includes all four elements on one page.

Step 9: Review the Findings and Finalize the Analysis Results

Review the results from Step 8 and clarify any information as needed. Concentrate on one SWOT element at a time. Review the groupings and labels to ensure understanding of overall impact. Discuss how to use the information gathered from the analysis to inform the next step.

Step 10: Identify the "Next Steps" to Take

Review the SWOT matrix to identify the next actions to take. Use this information to create an action plan.

Step 11: Draft Action Plan Document

Use the actions identified in the review of the SWOT matrix to create an action plan to address each of the four areas as well as any additional concerns for implementation. First prioritize the actions, identify who will complete each, estimate the timeline to complete each, and identify and document any needed resources.

Summary

A SWOT analysis can be instrumental in strategy formulation and selection, but it involves a great subjective element. Consequently, two independent groups will rarely come-up with the same final version of a SWOT analysis. However, it is an excellent tool for looking at the negative factors first to turn them into positive factors. Successful analysis subject build on their strengths, correct their weaknesses, and protect against external threats. They also recognize and exploit new external opportunities. Use a SWOT analysis as a guide and not a prescription.

SECTION VI: Concluding an Analysis

Introduction

The process of reaching a natural conclusion in an analysis involves several steps (Figure 12). Initially the analyst engages in a comprehensive review of the data to gain a complete understanding of the existing need or opportunity. As this understanding solidifies, the next phase involves drafting the final report and identifying potential solutions. What information should appear in each report and how the data is organized is outlined in Sections IV-V based on the type of analytical methods selected. This section instead focuses on the point in which the analyst has organized the data and drafted much of the report and is now moving towards recommending solutions. These solutions are aimed at addressing gaps in performance or elevating the current state to higher levels of achievement. As the analyst navigates through this systematic approach, the analysis progresses towards its conclusion. This progression signifies the culmination of efforts, resulting in a data-informed and justifiable set of solutions ready for implementation.

Drafting recommendations is one of the last steps for an analysis project, followed by implementation planning and presenting the results of the analysis to senior leadership stakeholders. Close collaboration between the analytical team, client(s) and the Training Manager is paramount across each of these final steps. Often these steps will overlap and may even trigger a return to drafting recommendations when alternative solutions or revisions to improve actionability of proposed solutions are discovered during the review, implementation, or final out brief phases.

Figure 12. Analysis Conclusion Phases.

NOTE: While the client may consider the analysis project complete after the results are briefed, the true last step is evaluating the impact of the implemented solutions and the overall impact of the analysis itself. The evaluation process, outlined in Section VII of the SOP, typically begins within one year of the final briefing.

6.1 Non-Instructional Interventions (NIPS)

NIPS is the convergence of external environmental factors successfully engineered to ensure optimal job-site performance when combined with human performers.

The term NIPS is negatively constructed to define what it is not because many people make the incorrect assumption that training ensures performance. It does not. NIPS provides the foundation of support for workers to perform their jobs in an exemplary manner. Shortcomings or problems with motivation, tools, capacity, and leadership, if not comprehensively addressed, will negatively influence job performances. If NIPS has not been adequately prepared to support human performers in their efforts, job performance will suffer, and mission execution will be less efficient and/or less effective.

The following examples (Table 9) show how analysts and program sponsors can interpret fact-data gathered from interviews and surveys and create actionable findings and recommendations. These recommendations will become the basis for any NIPS.

If facts from FEA data suggest…	Category is…	And findings will state…	Then possible IPS recommendation and POAM action item is…
Multiple mishaps occur when 2" hitches disengage from 1 ½" balls.	Environmental	Performers frequently do not visually recognize the difference between 2" balls and 1 ½" balls	Prepare a COMDINST or ALCOAST to require all trailer hitches to be color coded blue and yellow respectively.
Performers are frequently required to work 12 or 24-hour shifts.	Environmental Personnel selection and/or assignment	Watch sections are routinely short workers due to insufficient staff during peak work season, gaps in assignment process, or scope of work creep creates increased demands	Initiate a Manpower Requirements Analysis or Staffing Standards analysis be conducted to determine actual requirements. Review personnel assignment policy.
Difficult or unsafe worksite conditions identified as a barrier to exemplary performance by 62% of survey respondents.	Environmental	Unsafe and demanding worksite conditions reduce efficiency and effectiveness of performance	Initiate a formal review of job-site conditions by certified safety engineer or possibly human factors engineer.

Performers report that policy, procedures, and practices do not exist, are vague, or out of date.	Environmental	Formal documentation does not provide clear and accurate job-site performance	Review existing documentation and initiate plan for revision and rewrite of document.

Table 9. Interpreting Data to Create Actionable Findings and Recommendations.

Table 10 provides additional guidelines and examples for guidance and insight.

If facts from FEA data suggest…	Category is…	And findings will state…	Then possible IPS recommendations and POAM action items may be…
Training center instructors are not using performance-based instructional methods in the classroom.	Motivation and Incentives	Key instructor personnel are resistant to using performance-based instructional methods	Develop a change management plan to demonstrate and persuade key personnel. Provide incentives for compliance.
Key decisions are not made to implement new programs.	Motivation and Incentives	Competing organizational elements have overlapping authority and responsibility	Initiate an organizational redesign.
Personnel are routinely under-performing at the jobsite despite training.	Personnel Selection	Prerequisite qualifying scores are set to low to provide personnel with the capacity to perform	Create a multi- disciplinary working group to assess actual requirements and consider aligning with actual requirements.
Numerous mishaps have been reported due to improper use of key navigational equipment.	Skills and Knowledge	Key personnel have not been adequately trained how to operate the new radar	Determine the best mix of possible training solutions and implement a design and development project as necessary.

Table 10. Additional Guidelines and Examples.

As described in these examples, NIPS have been recommended to target shortcomings and/or problems with motivation, tools, and capacity, to enhance the entire Integrated Performance System, and provide a foundation of support for people to perform their jobs in an exemplary manner.

6.2 Recommendation Development

Step 1: Review KPIs

Before beginning to draft recommendations, it is a best practice to review the KPIs that define the current state and ideal state of performance. Some of these KPIs may have been directly provided by the client during the project initiation process and are already recorded on the draft evaluation plan started during the alignment phase. Record any newly discovered KPIs during the analysis process on the draft evaluation plan, if not already done. As shown in Figure 13, the strongest recommendations are directly linked to KPIs. With the KPIs in mind the analyst should consider which set of solutions or specific interventions will have the strongest impact on the known KPIs. Establishing this link between KPIs and recommendations is what makes measuring the impact of recommendations possible.

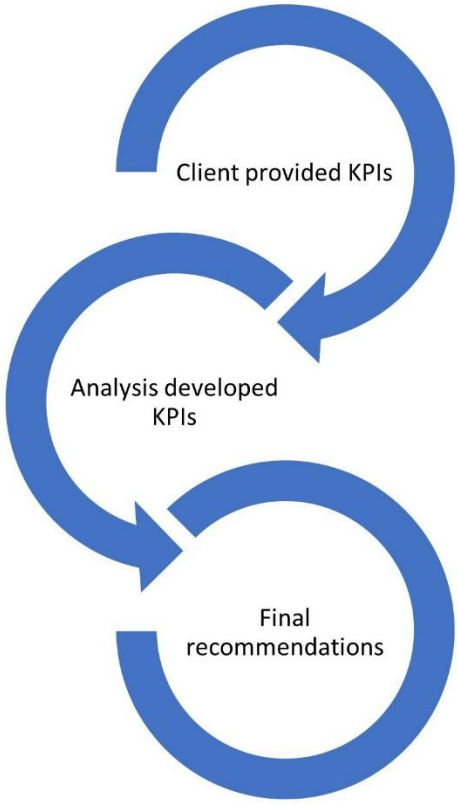

Figure 13. Linking KPIs to Recommendations.

Step 2: Draft Recommendations

The analysis team leads the development of recommendations but should collaborate with others in the process. The Training Manager, various Training Center personnel, instructional designers and other SMEs and APs can provide valuable insight to refine draft recommendations based on the analysis data gathered. Collaborating with instructional designers is especially important when drafting a recommendation related to the development of an instructional intervention. Present recommendations in reports using various formats. The most complete way to present a recommendation is using the Finding -> Rationale -> Recommendation -> Benefit, format.

A *finding* is a concise statement of observations from data collection efforts that confirm a performance barrier related to the analysis focus. Findings may also highlight other causative factors discovered which impede target performance more broadly, sometimes even beyond the stated need or opportunity.

Rationale is the supporting qualitative and/or quantitative data that substantiates the finding and provides an opportunity to zero in on specific data points the analysis team wants the client to be especially aware of.

The *recommendation* then is a clear statement of what the client should implement or do in response to the finding and rationale presented.

Lastly, *benefit* is typically framed as a two-part statement which discusses how implementing the recommendations will impact a known KPI, and if known, the consequences of leaving the finding unaddressed. This statement provides context to help clients prioritize which recommendations to

implement first. In the example provided, the consequence of not addressing the finding is highlighted in light gray, and the clear connection between the recommendations and a KPI is highlighted in dark gray. The highlights are used for illustrative purposes in the SOP and are not done in the final report.

EXAMPLE

Finding: Food Service Officers (FSOs) do not have adequate policy guidance to conduct their duties.

Supporting Rationale: 100% of FSOs interviewed stated the lack of current policy governance impacts their performance. The Food Service Manual COMDTINST M4061.5A was last revised in March 2009. Since 2009 there have been significant changes to the world of work for FSOs. Policy updates are often promulgated via message, and as a result many of the FSOs stated that it is difficult to track and define current policy requirements. Additionally, due to the significant level of policy updates, the Coast Guard Food Service Practical Handbook COMDTPUB P4061.4 has become obsolete. However, it has not been cancelled and remains on the service-wide resource list. FSOs are unsure of the validity of the information in the manual when they encounter problems and are instead relying on self-made peer and mentor networks. As of March 2023, a new Food Service Manual is in concurrent clearance which should address the major gaps in policy guidance for FSOs. It is difficult to define and enforce standards and expectations without modern policy for FSOs to rely upon.

Recommendations:

- Culinary Services Division (CG-1113) should continue to prioritize the release up an updated Food Service Manual.
- CG-1113 should organize the resources found on the CS SharePoint site and cancel any irrelevant resources.
- CG-1113 should create an easy to read/access Job Aid or appendix for all policy changes not captured in current manuals.

Benefit to the Organization: There is a significant amount of confusion regarding policy guidance for FSOs. The role of an FSO is inherently difficult and without proper guidance it is more likely for mistakes to be made. Improved policy administration and resource organization will lead to FSOs having stronger administrative support and is likely to decrease the number of monetary and procedural mistakes made.

NOTE: Based on this example, the takeaway for the client should be that promulgating appropriate policy guidance will reduce financial and procedural mistakes. The goal of any recommendation is to make it measurable. In this instance, error rates before and after promulgation of policy can be assessed to determine impact. While this example represents a

non-instructional intervention recommendation, e.g., policy development, instructional intervention recommendations are presented in the same manner.

Step 3: Evaluate Draft Recommendations

When recommendation drafting is complete, the analysis team is responsible for initiating an internal review of the recommendations prior to sending to the client. This review should include the Training Manager and may include other reviewers as required by local guidance. The goal of this review is to ensure each recommendation is:

- Data driven;
- Connected to a client and/or organizational goal;
- Measurable, in terms of the potential impact if implemented; and
- Feasible for implementation given any known client constraints.

Complete any necessary revisions based on reviewer feedback in preparation for routing the recommendations to the client for review.

NOTE: Concerns with feasibility alone are normally not enough to invalidate a recommendation. Retain proposed solutions that exceed the current capabilities or resources of the client but have the potential to yield the greatest improvement in performance. Analysts in this case may consider proposing iterative solutions that will aid the client in incrementally working towards a greater solution that may require more time and resources to implement then presently available. Removing a potential recommendation because it is "too bold", or "too costly" may inadvertently stifle innovation and limit the client's ability to advocate for a superior solution. Give careful consideration before eliminating a recommendation, ensuring the client has an opportunity to weigh in.

Step 4: Submit Draft Recommendations for Client Review

Once the internal recommendation review is complete, re-incorporate the recommendations (if drafted separately) into the draft report and send it to the client through the Training Manager for review. The report and recommendation review period concludes with an Implementation Meeting described in the next section. Ideally, provide the client with two weeks to review and offer feedback on the report and recommendations. This timeframe may vary based on the report's length and the approved project POAM.

NOTE: The steps outlined in Section 6.2 Implementation Planning occurs concurrently with the two-week client review period that begins in this step. This review period should end with the Implementation Meeting, outlined in Step 6.

6.3 Implementation Planning

The goal of implementation planning is to spur discussions before the final out brief that lead to:

- Preliminary identification of recommendations the client desires to implement.
- Addressing any questions regarding the report or recommendations contained within, that may result in a need to revise the report for content or clarity before the out brief.

- Preparation for the final out brief by identifying obstacles and concerns that may need to be addressed during the out brief.
- Identification of additional stakeholders and resources (logistics) that will be needed post analysis to assist with formal implementation of recommendations.

This phase of concluding an analysis (Figure 14) involves effectively leveraging the time between the draft report being sent out for client review and preparing for the final out brief. While much of the communication between the client and analysis team can be done ad hoc during this time, the review period formally concludes with a Pre-Implementation Planning Meeting. The meeting aims to shift the paradigm from an inactive review period—where a client may or may not share feedback before the final out brief—to an active review period, with designated time to facilitate sharing feedback in advance of the final out brief. This ensures the analysis team delivers the highest quality product by making necessary adjustments to the report, if needed, before closing out the analysis at the conclusion of the out brief.

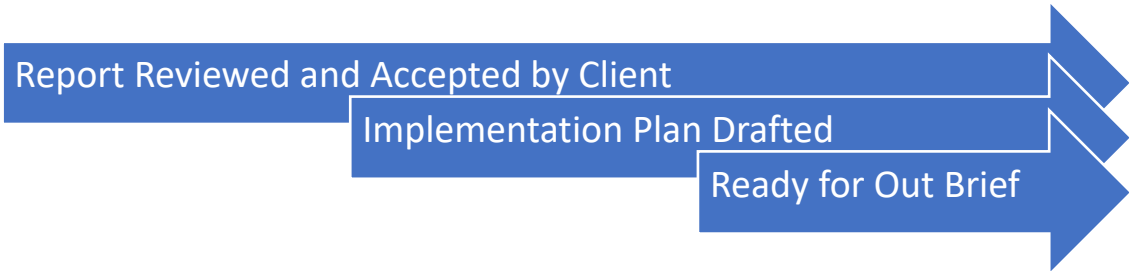

Figure 14. Ready for Final Out Brief Phases.

NOTE: Implementation action planning is a pre-planning effort to identify resources and start socializing intended interventions with the responsible parties that will develop them. The result is a high-level plan that roughly estimates what is needed to develop the solution, and notionally how long it would take to implement a solution. It is not intended to replace the formal project planning that typically occurs at the beginning of design and development projects.

Step 5: Determine Ownership of Recommendations

Group the recommendations by responsible party in preparation for the Pre-Implementation Planning Meeting. Generally, recommendations related to instructional interventions will be led by FC-T, Training Center, or contract resources. Non-instructional intervention development, e.g., job-aids, TTP, Personnel Qualification Standard (PQS), Electronic Support System (EPSS) etc., will have a shared responsibility between FC-T and the client depending on the type of intervention. Policy development is usually the sole responsibility of the client.

EXAMPLE

Recommendation: Revise an existing 'C' School taught at a TRACEN.

Resource Considerations: The course in question is a USCG developed and delivered course, which is normally supported by the respective training center's Performance Systems Branch (PSB) or equivalent entity. However, due to competing demands the PSB is unable to support revising the course until the triennial review which is scheduled in 8-

months. The client has requested the course be revised in four months to coincide with a major change in policy. The analysis team and Training Manager would then consult with the FC-T Enterprise Performance Solutions Branch (EPS) to identify FORCECOM Enterprise Performance Solutions (FC-Teps) personnel or training system contract resources. This coordination results in the identification of two instructional design contractors who can provide support shortly after the planned project out brief.

Action: The analysis team invites the Training Center PSB and FC-Teps to the implementation planning meeting to have a high-level discussion on sharing resources to complete the revision in 4-months.

NOTE: Grouping recommendations in this manner helps determine upfront which resources need to be consulted and included in the implementation planning process. After determining ownership, consult the training system representatives needed to design, develop, and implement the recommended interventions, and then invite them to the implementation meeting.

Step 6: Convene the Implementation Action Plan Meeting

The Training Manager schedules the implementation action plan meeting to coincide with the conclusion of the client's final report review period. This step may require one or more meetings depending on the number and complexity of the recommendations. A representative from the client program office, preferably an action officer, should attend the meeting ready to deliver feedback on the report and walk through the recommendations with the analysis team. Based on the type of recommendations, additional representatives from the training system are also included to engage in high level discussions regarding the ability to support implementation and answer any specific questions the client may have about the design and development of a potential intervention.

The client action officer is responsible for outlining which recommendations the program office will pursue. The analysis team or the client should capture these recommendations to devise a plan for implementation. The plan is not meant to replace robust project planning, all dates and resources needed are tentative and subject to revision. The goal of this plan and the meeting itself is to broadly outline when design and development of selected interventions could start, roughly how long it would take, and identify the resources necessary to make implementing the recommended interventions achievable.

NOTE: The secondary goal of this meeting is to set an intentional date before the out brief to actively illicit for feedback on the report from the client. This reduces the likelihood of disagreement or concerns with the findings, recommendations and report itself being raised for the first time during the final out brief. Client action officers must come prepared by having reviewed the report and internally briefing the findings to their principal to facilitate relaying senior level feedback during the implementation action plan meeting. Communicate these expectations to the client action officer when delivering the draft report for review and setting the implementation action plan meeting date.

Step 7: Finalize Evaluation Plan

With the client having fully reviewed the recommendations, the evaluation plan can now be finalized. The analysis team should record each recommended intervention on the plan linking each to their associated KPIs.

Step 8: Finalize Report and Schedule Final Out Brief

Include the Implementation Plan and Evaluation Plan in the report as appendices. If the Implementation Meeting feedback results in changes to the report, make those changes, mark the report as final, and sign it if required by local policy, in preparation for distribution to the client. The out brief is now scheduled, usually within one week of the last Implementation Meeting date. This timeline may differ based on client availability and the project schedule agreed to in the POAM. The final report should be sent to the client through the Training Manager when the document is ready ahead of the out brief.

6.4 Final Out Brief

The out brief marks the official conclusion of the analysis phase of the project. The out brief presentation content is divided into three key topic areas: Findings and Recommendations, Implementation Planning (Next Steps), and Evaluation (Figure 15). The analysis team and Training Manager jointly lead out briefs.

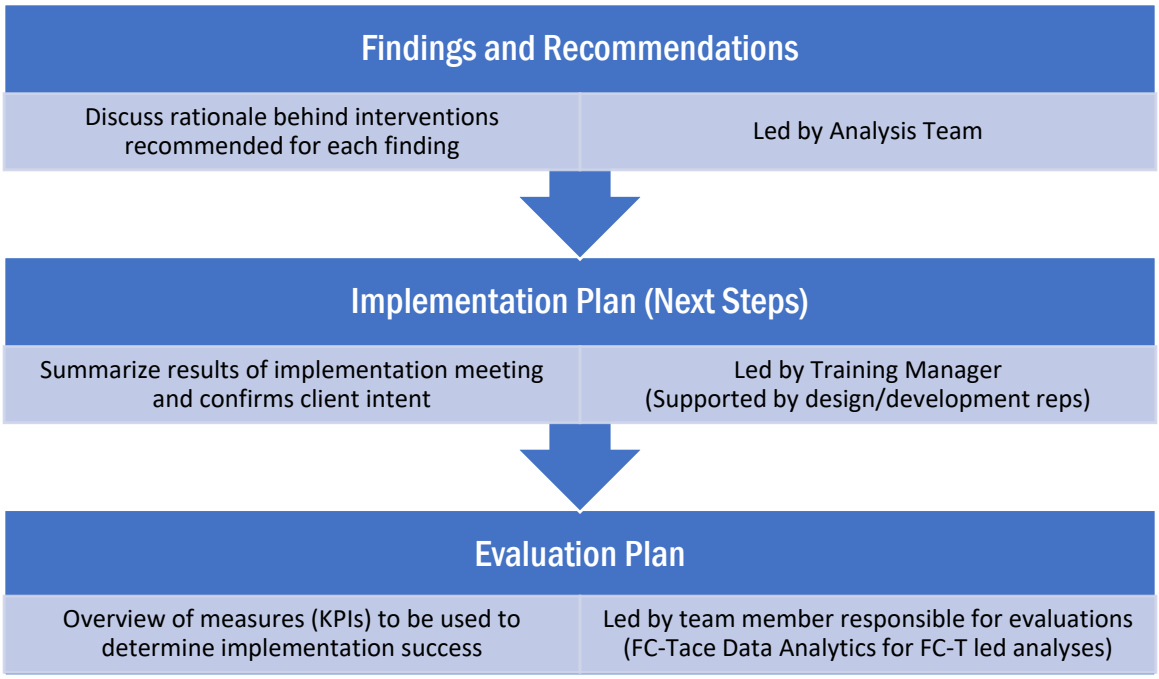

Figure 15. Final Out Brief Topics and Presenters.

Step 9: Prepare for the Final Out Brief

The analysis team develops the meeting agenda, prepares the presentation, and gathers any other necessary briefing materials. The Training Manager will schedule the meeting and invite appropriate

stakeholders. An example out brief presentation can be found HERE. Attach the presentation and final report to the invite as soon as they become available.

NOTE: Invite the stakeholders who were identified as critical to implementing analysis findings and consulted during the Implementation Meeting to the final out brief. This enables senior stakeholders to ask designers and developers directly if there are questions regarding the process or estimated timeline.

Step 10: Convene the Final Out Brief

The Training Manager leads the out brief by taking attendance, provides a brief overview of the project focus and meeting agenda and then introduces the invited attendees to the analysis team. The analysis team will provide an overview of the findings and recommendations and answer any questions regarding the analytical process as needed. After covering the findings and recommendations, the team will turn it back to the Training Manager to discuss next steps. The Training Manager will provide an overview of the implementation action plan meeting, introduce the client to the training system representatives that will assist with instructional interventions development, as applicable, and discuss the recommended way forward to maximize performance improvement based on the analysis findings. The meeting concludes with an overview of the evaluation plan. During this discussion a general timeline will be set for when the project evaluation phase will begin.

NOTE: Discussing the evaluation process is another opportunity to highlight for the client the importance of following through with implementation, as each recommendation on the evaluation plan is directly contrasted with its intended impact. Generally, evaluations will begin 1-year post analysis, however this is heavily influenced by the notional implementational timeline.

6.5 Report Archival

All analysis reports should be uploaded to FC-T's Analysis Library located on SharePoint (found HERE), regardless of the originator of the analysis. If used properly the Analysis Library is a one-stop-shop for all performance analyses conducted internally or on behalf of the Coast Guard. This allows analysts to quickly reference the library to determine if previous work has been conducted on their current project area of focus. This avoids duplication of prior efforts and provides a historical reference point of previous performance.

Report File Naming Conventions

While analytical approaches are flexible in nature, and may incorporate several different methods, the analyst should name the analysis by its predominant approach in the file name. "Capture secondary, tertiary, and additional methods or analytical approaches in the report itself and the cover page. In addition to the name of the analysis approach used, the file name should be appended with the year completed, and a brief descriptor of the target audience or job. **Avoid using acronyms** in the file name to ensure the content remains immediately recognizable when downloaded.

EXAMPLE

General File Name Fields:

<Year>_<Target audience/job>_<Analysis Type>.pdf

Job and Target Audience Examples:

2023_Boarding Officer_Job Task Analysis.pdf

2020_Fleet Ready Ensign_Strategic Needs Assessment.pdf

NOTE: Job or position focused analyses should use the recognized name for the qualification or position title as applicable, e.g. Marine Inspector, Boarding Officer, Pursuit Coxswain, Safety Officer, Sector Commander, Commanding Officer/OIC etc., in the file name.

Meta Data

Meta data is what improves the searchability of the library and allows for filtering. Make the applicable meta data entries as the file is uploaded into the library. The following meta data fields have been approved for the FC-T Analysis Library:

- **Analysis type.** The primary or predominant analytical approach, using the named analysis types from Section IV-V of this SOP should be entered here.
- **Primary client.** This field is where the primary client for the project is entered, e.g., MLE-2, CG-SAR, CG-113 etc.
- **Report short name.** This field allows the use of common acronyms. Using the Boarding Officer Job task analysis from the example above, the short name would be: 2023 BO JTA. This field will help a library user find the file they need if searching by a related acronym.
- **Project lead.** The originator of the analysis should be entered in this field. For Training Centers, the TRACEN acronym is acceptable, e.g., TCY, TCCM, MLEA, ATTC etc. For FORECOM led analyses, it should include the branch, FC-T, FC-Tace, etc. For externally performed analyses, it should include the agency or contract company, e.g., Government Accountability Office (GAO), RAND Corporation, Booz Allen Hamilton, etc.
- **Analysis duration.** This field allows entry of up to a triple digit number which represents the number of days needed to complete the analysis phase of the project. The analysis duration is determined by the number days between the final Alignment Meeting and the final Implementation Meeting. This calculation is working days; accordingly, it should preclude weekends and holidays.
- **Year complete.** Enter the year the project was completed, which should mirror the year on the cover page of the report.

NOTE: Naming conventions and metadata fields were created long after the establishment of the original analysis library on the legacy CGPortal. For analyses prior to 2023 that cannot be effectively categorized in the new SharePoint library, they should be appended with the analysis type "Performance Analysis". Use this categorization sparingly.

APPENDIX A: Abbreviations and Definitions

Abbreviations

ADL ..... Advanced Distributed Learning

ALMIS ..... Asset Logistics Management Information System

AP ..... Accomplished Performer

A/S ..... Assignment and Selection

ATC ..... Aviation Training Center

ATD ..... Association for Talent and Development

ATTC ..... Aviation Technical Training Center

CBA ..... Cost Benefit Analysis

CBT ..... Computer-Based Training

CBNA ..... Competency Based Needs Assessment

CCA ..... Cost Comparison Analysis

CDSE ..... Center for Development of Security Excellence

CG-1B4 ..... Manpower Requirements Determination Office

CG-1113 ..... Culinary Services Division

CG-128 ..... Office of Leadership

CG-21 ..... Office of Intelligence Workforce Management

CG-751 ..... Office of Cutter Forces

CGBI ..... Coast Guard Business Intelligence

CGLO ..... Coast Guard Liaison Officer

CGPT ..... Coast Goard Projects Team

COR ..... Contracting Officer Representative

COTS ..... Commercial Off-the-Shelf

CPT ..... Certified Performance Technologist

DA ..... Direct Access

DBO ..... District Bridge Offices

DFEA ..... Diagnostic Front End Analysis

DHS ..... Department of Homeland Security

DIF ..... Difficulty, Importance, and Frequency

DoW ..... Department of War

ENV ..... Environmental

EO ..... Enabling Objective

EPSS ..... Electronic Performance Support Systems

ERATS ..... Enlisted Rating Advancement Training System

ETMQC ..... Education and Training Management Quota Command

FC-T ..... FORCECOM Training Division

FC-Teps ..... FORCECOM Training Division, Enterprise Performance Solutions

FC-Lot ..... FORCECOM Leadership and Training Division, Operations Branch

FEA ..... Front End Analysis

FORCECOM ... Force Readiness Command

FOT ..... Facilitated Online Training

FSMS ..... Financial System Modernization System

FSO ..... Food Service Officer

GA ..... Goal Analysis

GAO ..... Government Accountability Office

GOTS ..... Government Off-the-Shelf

HPT ..... Human Performance Technology

hr ..... Hour

HSI ..... Human System Integration

ICH ..... Instructor Contact Hour

IG ..... Instructor Guide

IPT ..... Integrated Process Team

ISD ..... Instructional System Design

ISPI..... International Society of Performance Improvement

JAET ..... Job Aid with Extensive Training

JAIT ..... Job Aid with Introductory Training

JTA ..... Job Task Analysis

KPI ..... Key Performance Indicator

LD ..... Learning Development Center

LO ..... Learning Objective

MA..... Major Accomplishments

MAW ..... Mounted Automatic Weapons

M/I ..... Motivational and Incentive

MLEA ..... Maritime Law Enforcement Academy

MISLE..... Marine Information for Safety and Law Enforcement

MOICH..... Monthly Instructor Contact Hours

NAWCTSD..... Naval Air Warfare Center Training Systems Division

NIPS..... Non-Instructional Interventions

NPP FEA..... New Performance Planning Front End Analysis

O..... Opportunity

OA ..... Occupational Analysis

OEM .....Original Equipment Manufacturer

OSC.....Operations Systems Center

POAM.....Plan of Action and Milestones

PPC..... Pay and Personnel Center

PPS .....Peak Performance System

PQS.....Personnel Qualifications Standard

PSB .....Performance Systems Branch

PTEM.....Performance, Training, and Education Manual

PWCS.....Ports, Waterways, and Coastal Security

PWS.....Performance Work Statement

RA.....Rapid Analysis

RFA.....Request for Analysis

RFMC.....Rating Force Master Chief

RKM .....Rating Knowledge Manager

RP .....Resource Proposal

RPD .....Root Problem Deficiency

RPQ .....Rating Performance Qualification

RTAC.....Rating Training Advisory Council

ROI .....Return on Investment

S .....Strength

SABA.....SABA Software, Inc.

SG.....Student Guide

S/K.....Skills and Knowledge

SME .....Subject Matter Expert

SMTC.....Special Mission Training Center

SNA .....Strategic Needs Assessment

SO.....Internal Strength with External Opportunity

SOJT .....Structured On-the-Job Training

SOP ..... Standard Operating Procedures

SOW ..... Statement of Work

ST..... Internal Strength with External Threat

SWOT ..... Strengths, Weakness, Opportunities, and Threats

T ..... Threat

TCC ..... Training Curriculum Comparison

TISCOM ..... Telecommunication and Information Systems Command

TNA..... Training Needs Assessment

TONO..... Travel Order Number

TPAX ..... Travel Preparation and Examination System

TPO..... Terminal Performance Objective

TQMS..... Training Quota Management System

TRACEN ..... Training Center

TTM ..... Training to Memory

TTP ..... Tactics, Techniques, and Procedures

TVM..... Task Validation Meeting

USAFISA..... United States Army Force Integration Support Agency

USCG ..... United States Coast Guard

W..... Weakness

WBT..... Web-Based Training

WO ..... Internal Weakness with External Opportunity

WRA.....Workforce Requirements Analysis

WT..... Internal Weakness with External Threat

VTC ..... Video-Tele-Conference

Definitions

Ability: Latent capacity of a person to perform a job task; it includes knowledge, skills, attitude and application in complex and novel circumstances; abilities are developed over time through practice and feedback.

Accomplished Performer: An individual who routinely produces accomplishments at or above standard. Often intended to mean the best performer currently on the job; a person whose skill or performance exemplifies the optimal or desired state. A subject matter expert may or may not qualify as an accomplished performer.

Accomplishment: (1) An output of behavior that has direct value to the goals of the job and the organization (e.g., equipment operational). (2) The outcomes or products of a worker that is valuable to his/her organization. For example, Officer Evaluation Reports ready for approving signatures and a decision on number of enlisted personnel above the advancement cutoff. See outputs.

Action Plan: A plan that identifies who will implement recommended solutions/interventions from an analysis; developed by FC-T Performance Consultants in conjunction with client and analysis source during or immediately following analysis Out Briefs.

Actual: The current skill, knowledge, perspective, and environment of individuals in an organization; specifics about what people do now.

Alignment: First phase of the Peak Performance System Phase 1 (Analysis) process. Involves interpretation of request from a potential client, gathering of information regarding a project, deciding on type of analysis relevant to the project, and specification of Initial Goal of the project.

Analysis: Break down into component parts. Work done prior to the design of a project. Diagnostic FEA, Planning FEA, assessment of exiting training, or maintenance of existing training are all types of analysis.

Analyst: Person who performs USCG range of analyses, normally a USCG Performance Technologist or Certified Performance Technologist.

Assessment: Investigation of existing training to determine if it should be adopted as is or adopted to current needs or rejected.

Assignment and Selection (A/S) Intervention: An intervention to improve performance that involves matching "right" people to specific jobs.

American Society for Training and Development: Certifying body for the professional performance certification of Certified Professional in Learning and Performance.

Attitude: The choices we make, generally speaking, people choose to do things when they value the results and have confidence in their capacity to perform the task.

Barriers: Individual and organizational factors that constrain the success of people and organizations; for example, executives lack keyboard skills so they avoid emails; barriers influence the proposed solution set.

Behavior: The actions (tasks and steps) a person takes to produce an output. Actions can be either overt (i.e., observable) or covert (i.e., cannot be observed such as thinking or decision-making).

Benchmark: Comparative standard for evaluating accomplishments against known examples of excellence; a target goal that is beyond current capabilities but for which the organization is striving.

Blended Solution: A mixture of training and performance supports, i.e.; Web Based Training, Personnel Digital Assistant for data collection, and Electronic Performance Support System containing links to publications and Job Aids.

Causes: Influences that impede individual and organizational performance; there are four kinds of causes: (1) absence of skills and knowledge or information, (2) weak motivation, (3) improper environment, (4) flawed incentives, (5) wrong assignment and selection. The causes of undesirable performance should be uncovered during analysis; the causes define the nature of the proposed solution set (See Barriers and Drivers).

Coast Guard Liaison Officer (CGLO): USCG maintains an O-5 CGLO at the Naval Air Warfare Center Training Systems Division (NAWCTSD) Orlando. The CGLO works with FC-T to complete the RFA process, conduct alignments, choose best projects for completion by NAWCTSD CG Projects Team (CGPT). The CGLO links the CGPT to the USCG and oversees the quality of analysis work and the stewardship of CG funds.

Consequences of Error: The penalty for non-standard performance.

Constraint: Givens of a project that may represent a barrier to ideal design unless minimized.

Cost Analyses: A USCG requirement that is completed before an organization provides resources for a project. A costing analysis study will consist of one of three studies: cost comparison analysis, cost benefit analysis, and return on investment.

Cost Benefit Analysis: An examination of expected or perceived costs in relation to expected or perceived gains, typically conducted when contemplating new actions or considering new interventions.

Cost Comparison Analysis: A cost comparison analysis presents several performance improvement delivery options and the associated cost for each of these options. This type of analysis is selected when the intangible benefits are difficult to quantify. It can also be used to determine whether a project should be continued.

Customer: Generally the program office initiating the request and responsible for providing funding, identifying sites to visit, and selecting SMEs and APs for interviews and performance observation.

Curriculum: A course of study. A USCG curriculum consists of pre-design, course design, lesson plans, training aids, instructional materials, student evaluation plan, test, course map, all other associated training materials, and curriculum outline.

Demographics: Characteristics of the population (i.e., age, gender, rating, geographic location, unit type, time in service, time in job, etc.) used by the analyst to make assertions about survey data; vital statistics related to survey participants.

Design: The second phase of the ISD model. Design work involves creating a blueprint or course map that plots out how the training program will be delivered, what methods and strategies will be used, how people will be tested, what training materials and media need to be developed and so forth. Design work acts as a blueprint for the developer to use in developing the training program or performance support.

Development: The third phase of the ISD model. Development work consists of developing or producing products from the plan (design) provided by the course designer. Typical development work involves creating completing tests (level 2 evaluations), developing lesson plans, course materials, selecting media, training aids, case studies, role plays, electronic performance supports, Job Aids, etc.

Diagnostic Front-End Analysis: A problem-solving set of analysis procedures used in projects when existing performers are not producing present accomplishments satisfactorily; the procedure finds the deficiency (gap) in performance as well as the cause and solution.

Diagnostics: The practice of troubleshooting problems for causes.

Difficulty: How difficult it is to perform a specific task and/or how long it takes for a student to learn a specific task (criteria: 10 or more steps, fine judgment to tell things apart, application of rule with many exceptions, precise hand-eye coordination, fine-grained muscular movements, several decisions to be made, how long it takes).

Difficulty, Importance, Frequency (DIF) model: A filter used to determine whether a task should be trained, job-aided, or learned on the job.

Drivers: Levels in an organization and person that influence performance; there are many drivers for example, how much a person knows, how much that person values the work, the person's confidence, the available tools, and an organization's culture, policies, and incentives; the drivers influence the nature of the solution set that is proposed (See Barriers and Causes).

Duty: Major divisions of work in a job, comprised of a group of related tasks; a broad descriptor under which tasks are organized. Duty areas consist of cluster of tasks.

Duty and Task Inventories: A list of duties and tasks associated with a USCG Rating; validated by the SME at the beginning of the OA process.

Electronic Performance Support System: An electronic, packaged (self-contained) Advanced Distributed Learning (ADL) solution or job aid that unifies relevant support and reference information, media, and guidance at a single, accessible point, and is organized in a logical and consistent way to not cause a significant decrease in performance. An EPSS can be built into an equipment's operating system or provided as a standalone software application or a handheld data assistant.

Environment: The environment that surrounds and affects performance is made up of policies, procedures, processes, available time, physical space, tools, equipment, work design, etc.

Environmental Interventions (ENV): Those recommendations that seek to close gaps in the performer's current environment (e.g., better work design, easily accessed standardized workflow procedures, etc.).

Evaluation: A multilevel, systematic method for gathering data about the effectiveness of training programs. Measurement results are used to improve the offering, determine whether the learning objectives have been achieved, and assess the value of the training to the organization.

Extant Data Analysis: Analysis of records and files collected by an organization reflecting actual employee performance and its results (e.g., attendance figures, help desk tapes, callbacks for repairs, and employee evaluations).

Feedback: Feedback consists of information about the nature of an action and its result in relation to some criterion of acceptability. It is never-ending input of one sort or another.

First Year Cost: An aggregate total of the non-recurring costs, the overhead instructor cost, and the recurring costs.

Frequency: Number of times the task is performed in a given period of time.

Front End Analysis: A systematic process for describing new performance; determining inhibitors to competent performance; and recommending skills and knowledge (S/K), environmental (ENV), motivation/incentive (M/I) and assignment and selection (A/S) interventions that must be put in place for Coast Guard workers to achieve optimum performance

A level of performance analysis that is a subset of program level analyses. FEAs are limited to specific individual jobs, specialties, or activities and they are geared towards individual performance. If using this methodology for a group or unit with varied jobs, the performance analyst will more likely conduct a series of FEAs, one for each of the individual jobs. The FEA report includes a set of required skills that are used in the follow-on design of training. The report also includes other recommended non-training interventions.

Goal: In context of alignment, a description of the initial intention of a project in terms of the type of analysis to be performed (i.e., to conduct an analysis for the deficient situation: "Performance appraisals are not being produced satisfactorily."

Human Performance Technology: A group of methods, processes, and approaches used to improve human performance by solving or avoiding problems, and taking advantage of new technologies, methods, and other opportunities. HPT is a systematic approach to improving human productivity, competence, and capability. The goal of HPT is to identify and develop a set of interventions (or solutions) that solve or mitigate barriers to performance (e.g., lack of skill or knowledge, a flawed environment, ineffective reward or incentive systems, poor motivational structures, wrong people assigned to jobs, or new or unique equipment or systems)

Human System Integration (HSI): The Human System Integration process is a management and technical strategy to integrate the domains of Personnel, Training, Human Factors Engineering, System Safety, Habitability, and Personnel Survivability into the material life-cycle. These domains collectively define how the human parts of the system affect system or capability performance (e.g., mission performance, safety, supportability, and cost). The HSI domains also identify how the system affects the human aspects of the system (e.g. the trade structures, skill gaps, and training requirements, workload and manning levels, and operator/maintainer characteristics such as body size and strength). The human parts of the system include the whole range of system stakeholders that is the system, supporters, trainers, operators, and maintainers. Human Systems Integration ensures that users of a technological system can operate and maintain the system to a desired level of performance within a planned operational context. Human factors engineering is a key differentiator in the development of successful technologies that optimize and enhance human capabilities.

Importance: The potential for danger to self, others, operations, national security, equipment, or the environment if the task is not done correctly.

Incentives: Incentives are provided by an organization to influence people's behavior. Incentives ensure or reward desired performance.

Instructional Interventions: Solutions identified from an analysis that are associated with skills/knowledge gaps.

Instructional Systems Design: A systematic approach to developing training or instruction that involves five phases: analysis, design, development, implementation, and evaluation. Data from one phase serves as input for the next phase. For example, analysis outputs enlighten subsequent decisions in the design process.

Interventions: The recommendations that are the outcomes of a performance analysis; known as interventions or solutions.

Interview/Focus Group: A data collection strategy in which oral questions are asked of individuals or small groups of individuals to gather relevant information. Can take place face-to-face or over the telephone.

International Society of Performance Improvement (ISPI): Certifying body for the professional certification of Performance Technologists (CPT).

Job: The formal title of a position (same as job title); also used to include specialty (e.g. Machinery Technician on 270'). The overall contribution to the position to the organization's mission.

Job Aid: A storage place for information, other than the brain, that is accessed on –the-job, in real time and puts the user under stimulus control. A guide that supports on-the-job performance by helping personnel execute tasks otherwise done infrequently, are too complex to memorize, or are comprised of critical steps. Job aids may supplement or replace training. *Examples include simple checklists, document templates, aviation repair procedures*. See also Electronic Performance Support System.

Job Aid Analysis: A type of analysis that involves two steps and provides two outputs: (1) determination as to whether a Job Aid must is appropriate to support performance of a specific task (given environmental, ergonomic or social constraints), or whether that task must be trained to memory and (2) determination as to whether Job Aided can stand alone or required extensive or introductory training.

Job Aid with Extensive Training: One possible outcome of a Job Aid analysis. Job Aid with Extensive Training means the Job Aid must be used as a training aid and supported by extensive training (i.e., introduction and context, practice, repeated practice, fading, shaping, and backward chaining.

Job Aid with Introductory Training: Another possible outcome of a Job Aid analysis. Job Aids with Introductory Training require relatively little training. It should be sufficient to introduce the Job Aid, demonstrate how it is used, and provide initial cueing and practice.

Job Analysis: A process used to determine what is included in a particular job and how a job is supposed to be done. Typically, it includes work by SMEs who distill a job into a set of functions consistent with major accomplishments and then further chunk the functions into tasks and task elements; type of performance analysis that determines the duties and tasks that are, or should be, performed by personnel occupying a given type of billet or fulfilling a given function.

Job Task Analysis: The process of describing jobs based on the organization or task data obtained from incumbents through task inventory surveys. Program and Training Managers use the resulting information to make training decisions (i.e., Job Aid task, train task, do not train task, train task on-the-job).

Knowledge: Being able to accurately recall information or explain where to find the information with minimal search time (the source instruction or reference). Recalling information and finding

information with minimal search time are the building blocks for higher order performances. What has to be memorized and what can be left to the open-book real world are contextual decisions and will depend on task-specific characteristics such as frequency, timing, criticality, complexity, etc.

Knowledge Management: Field of study concerned with the desire to create a culture in which knowledge is paramount. Knowledge moves throughout the organization, hopping boundaries and transcending turf. Coast Guard e-Learning is working to attain this culture; CG e-learning is defined as "Growing, using, and moving knowledge using electronic means where we need it and when our people want it."

Major Accomplishment: Job outputs that allow the job to support the organization's mission.

Motivation: Motivation is the personal desire to perform. It is comprised of both value and confidence. Value is knowing why desired performance is important and confidence is the belief by the member that he/she can do it.

Motivation/Incentives Interventions: Recommendations for increasing the performer's personal desire to perform; aids to help performers in seeing the desired performance is important, performance supports, tools, training, etc. to increase performer confidence, new incentive program based on performer input for what would be motivating.

Naval Air Warfare Center Training System Division: NAWCTSD maintains a Coast Guard Projects Team, which is a team of government analysts trained to perform USCG FEA and other types of USCG analyses. The Navy benefits from maintaining this team because it infuses the Coast Guard Performance Technology culture into a command that provides ADDIE services to various naval training commands. This team also serves as a "collaboration engine" between the USCG, the Navy, and other armed services. USCG maintains an O-5 Coast Guard Liaison Officer at NAWCTSD Orlando.

Needs: The difference between the desired results (optimals) and the current results (actuals). Needs differ from wants in that needs are based on identified performance gaps, whereas wants have a personal value/preference attached that may or may not be linked to a performance gap or clear performance.

New Performance Planning Front End Analysis: This is used to analyze new starts – different performance expectations for a new vessel or a new policy. NPP FEA defines and describes major accomplishments, tasks, task steps, sub-steps, and the positive influences required to support optimal performance for a newly created job, a new piece of equipment, a new system – any new start in the organization. If performance intervention is recommended, it will also include detailed task analysis required to develop training/performance support products.

Occupational Analysis: A process that measures an occupation's job performance requirements and world of work at a particular point in time. OA, as an integral part of the Rating Performance Qualifications (RPQ) process.

Off-the-Shelf Analysis: Off-the-shelf analysis is a process used to evaluate commercial-off-the-shelf or government-off-the-shelf training and performance support products for possible use in the USCG program or as potential stand-alone products the USCG could procure or buy. The procedures for analyzing COTS and GOTs products are found in COMDTINST 1554.1.

On-the-Job Training: A method of teaching new skills and knowledge while performing job duties.

Structured On-the-Job Training (SOJT). An activity where knowledge, skills and abilities are attained at the worksite by use of a qualified OJT Monitor/instructor who introduces tasks in a priority sequence of activities, provides feedback, and measures and evaluates outcomes.

Unstructured On-the-Job Training (UOJT). An activity where knowledge, skills and abilities are attained at the worksite by employees without a planned, measured or a monitored approach with inconsistent and unpredictable outcomes

Optimals: The desired state. The directions the organization and its people are trying to go. Specifics about broad goals and desired skills, knowledge, and perspective as they relate to a particular task or organizational problem.

Outputs: Statements of accomplishment. They are NOT behaviors. They are NOT increments of knowledge. They are statements of what the performer produces on the job. (See Accomplishments).

Perform/Do Not Perform: Used to determine the percentage of people in the job or rating who are performing the task (JTA).

Performers: For the purpose of the JTA, those identified as the sample or whole target population taking the JTA survey.

Performance: Summary term used to indicate behaviors and the accomplishment that is produced by those behaviors

Performance Consultants: A consultant working in partnership with analysts and customers to identify barriers, explore a suite of solutions, and work collaboratively to obtain new procedures, technology, behaviors, and ideas adopted.

Performance Deficiency: Below standard accomplishment because of inadequate behavior.

Performance Gap: Exists when optimals (desired state) differ from actuals (current state of performance).

Performance Requirements: The statements describing specific outcomes with associated criteria and measures,

Performance Support: Any tool, device, or program that exists to help workers perform their jobs (e.g., Job Aids and EPSSs).

Performance Technologist: One who applies systematic, data-drive approach to improving human performance. A PT should normally be working towards becoming a Certified Performance Technologist.

Problem: A deviation from standard; less than adequate performance present at the organizational, unit, or individual job level; a problem manifests itself as the delta between what you seek (optimal) and what you have (actual), therefore a shortfall (gap).

Rapid Analysis: Sometimes referred to as a 'Quick Look' – this analysis approach is a strategy to consider when a cursory evaluation is needed to address a smaller scope issue and time constraints are a major factor. Often an abbreviated analysis usually completed within 2-4 weeks.

Rating Force Master Chief: The Headquarters Ombudsman for individual ratings focusing on structure, qualifications, performance, and training. Also the prime customer for OA data.

Rating Review: An activity normally performed by a Rating Manager or RFMC to determine health of the rating, including assessing structural concerns for the rating size, grade distribution, flow, and performance qualifications.

Request for Analysis: The initial stimulus for a possible project to aid the customer in solving a problem or developing a specified perceived need (e.g., help us plan for a new job we are creating).

Return on Investment: ROI takes a CBA to the next level of evaluation and may be conducted when a monetary value can be applied to the benefits.

Root Cause: The reason attributed to a gap condition where actual and optimal are not the same.

Root Cause Analysis: Study to determine what gets in the way of individual and organizational performance and why. Cause analysis should result in recommended actions that address specific categories of causes, such as motivational, environmental, skills/knowledge, equipment, and assignment and selection. The idea is that there is a different way to address problems that have different causes. Cause analysis helps ensure that the solution will solve the problem.

Scope: Determining the boundaries of a project. Answering questions like how big is the problem, how many people are available to answer the survey, how much is it going to cost, how long will it take, etc.

Skills: Ability to behave in a way associated with successful job performance.

Skills and Knowledge Interventions: A strategy (or strategies) such as training, electronic performance support systems, Job Aids, better/quicker access to publications, etc. that reduces or eliminates gaps in a performer's S/K.

Solution System: An array of interventions (solutions) that, when strategically combined, increase human performance in the workplace. Decisions about the nature of a solution system are based on causes and drivers and determined during a performance analysis.

Specialty: A more specific title within the generic title used to represent more specialized functions (e.g., Johnston Boiler technician is a specialty within MK job title).

Stakeholders: People who have an interest in an outcome of an analysis study such as a DFEA, NPP FEA, JTA, CBA, etc. The findings may have an effect on them or their work.

Strategic Needs Assessment (SNA): A formal evaluation that examines the external and internal factors that affect performance within the context of an organization's business strategy, and identifies the gaps between the current and desired conditions

Structured On-the-Job Training (SOJT): Performance based training that is intentionally designed to occur at (or near) the learner's unit in a structured way to achieve standard performance outcomes "reliably and predictably" (Jacobs 2003). Well-designed SOJT provides a training setting that closely matches the work setting but not does conflict with the safe accomplishments of actual work. Well-designed SOJT provides "train the trainer" guidance to standardize the performance of the experienced person (trainer), guidance for the learner, and guidance to the command on how to implement to SOJT as designed. The trainers and evaluators/qualifiers are typically the most experienced crew members who are assigned to the unit and who are actively performing the tasks they are training or evaluating (APs). These trainers may train more than one person at a time but they should provide one on one attention to help learners develop competence and confidence. (Jacobs 2003) SOJT must have life-cycle support in order to be

maintained and improved. It must be updated as Tactics, Techniques, and Procedures (TTP) change.

Subject Matter Analysis: Conducted through interaction with SMEs and documents to derive essential information that is used as the basis for training programs and Job Aids. Seeks the nature and shape of bodies of knowledge that employees need to possess to do their jobs effectively.

Subject Matter-Based Training: The training process that starts with the premise that a certain topic or body of knowledge will be taught, as opposed to performance-based training, which derives content from an analysis of the desired performance; typically the increments of subject matter-based training are grouped by topics and competencies.

Subject Matter Expert: A SME is a person who is identified as the most knowledgeable regarding a specific subject or piece of equipment: this is not necessarily the person with the most practical experience in the subject or the person who can best employ the piece of equipment – that would be the AP.

Survey: A method of collecting information from the field by the use of questionnaires or telephone interviews. FC-Tace has an online resource to help with creating surveys.

Survey Sample: The optimum sample size is the total group. When the total group cannot be surveyed because of either costs, time, or other constraints, a sample is drawn to represent the total. Categorize the population into separate groups (i.e., length of time in position, pay grade, geographical location, unit, or type of equipment used); then select a certain number of each category in approximately the same proportions as in the real population. The purpose of care in sample selection is so the analyst can say the findings are true not just the individuals who completed the survey but of those who did not as well.

Supervisor: For the purpose of JTA, those identified as people who supervise the performers.

Systematic: Characteristics of analysis efforts. Systematic efforts are data driven and are defined, orderly processes by which output from one phase serves as input for the next.

Systemic: Having a focus on relationships within an organization and on how change in one component influences others. Recognizing the individual, team, and organizational aspects of performance and the need for solution systems predicted on causes.

Systems Approach: Examines internal and external organizational factors that impact human performance. Also referred to as Systems Thinking.

Target Population: The workers an analysis project will influence.

Task: A discrete unit of work performed by an individual. It usually comprises a logical and necessary step in the performance of a job duty and typically has an identifiable beginning and ending.

Task Analysis: Detailed study performed to define the actions of master performers. Usually based on observing and interviewing accomplished performers as they do their work. Often results in a detailed list of activities, elements, and sub-elements in carefully specified order. TA considers both overt (can be observed) and covert (thinking and decision making skills that cannot be observed) behaviors.

Train to Memory, Job Aid with Extensive Training, Job Aid with Introductory Training, Job Aid, On-the-Job Training, No Training or other Performance Support Required.: Outcomes of JTA.

Training: An intervention for bringing about a change in behavior when a lack of skills or knowledge is present.

Training Center: One of eight USCG Training Centers (Aviation Technical Training Center [ATTC] Elizabeth Center, NC, Aviation Training Center [ATC] Mobile, AL, Leadership Development Center [LDC] New London, CT, Maritime Law Enforcement Academy [MLEA] Charleston, SC, Special Missions Training Center [SMTC] Camp Lejeune, NC, Training Center Cape May, NJ, Training Center Petaluma, CA, Training Center Yorktown, VA).

Training Requirements Analysis: A process where the scope of the analysis project is narrowed explain only to the program manager (or other client) only what the performance needs are and what training intervention is best suited to meet those needs in a cost-effective manner.

Training System: A systematically developed curriculum including, but not necessarily limited to, courseware, classroom aids, training simulators and devices, operation equipment, embedded training capability and personnel to operate, maintain, or employ a system. The training system includes all necessary elements of logistic support.

APPENDIX B: Resource Links

Below is a list of all resources linked in this document.

***PLEASE NOTE: when viewing resources in the repository, please do not edit the documents, rather, download a local copy to your desktop for individual use.**

- Alignment Agreement Example
- Analysis Determination Table
- DFEA Summary Sheets
- DIF Task Template
- Evaluation Plan
- FORCECOM Training Division Analysis Library
- Interventions Recommendation List
- Outbrief Presentation
- Rapid Analysis Example
- Root Cause Analysis Report
- Root Cause Classification
- SWOT Brainstorming
- SWOT Quadrant
- SWOT Template
- Task Detailing Worksheet