

STANDARD OPERATING PROCEDURES (SOP)

FOR

THE COAST GUARD'S TRAINING SYSTEM

Volume 4

JOB AIDS



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Washington, DC
April 2008

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TABLE OF CONTENTS

TITLE	PAGE
Section I; Overview	1
Introduction	2
Purpose	2
Target Audience	2
Background	2, 3
Use of Job Aids	3
Approved Methods for Gaining Proficiency in Designing and Developing Job Aids	3, 4
Assistance	4
Coast Guard Procedures for Producing Job Aids	5
Section II; Coast Guard Procedures for Producing Job Aids	4
Job Aid Analysis	6
Step 1: Collect Task Data	6
Step 2: Sort Task Data through Memory vs. Job Aid Filter	7
Step 3: Sort Tasks to be Job-Aided through Training Support Filter	8
Step 5: Validate Draft Job Aid	9
Step 5a: Edit the Draft Job Aid	10
Step 5b: Conduct Trials for Draft Job Aid	11
Step 5c: Revise the Draft Job Aid	12
Step 6: Troubleshoot the Draft Job	12
Step 7: Submit Job Aid for Review	12
Step 8: Deploy the Official Job Aid	13
Step 9: Maintain the Job Aid	13
Glossary	14
References	15

Section I: Overview

Introduction

Job Aids (JAs) are procedure guides with varying levels of procedure guidance used to shape behavior (when used for training purposes) or direct behavior (when used to elicit exact performance without prior intervention). A JA is a “storage place” for information other than human memory. Used on the job and accessed in real time, JAs are guides that support performance.

Some examples of job aids include:

- Armed Forces Recipe Cards
 - Aviation Computerized Maintenance Cards
 - Troubleshooting flowcharts
 - Inspection checklists
 - Tax form guides
 - Gas pump self-service directions
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Purpose

This SOP is designed to provide the user with Coast Guard formal training system’s guidance and standards for developing job aids.

Target Audience

The target audience for this SOP includes all members of the Coast Guard involved in the analysis, design, development, implementation and evaluation of performance or instructional interventions in support of the Coast Guard Training System. That audience includes Human Performance Technology (HPT) practitioners, members assigned as instructors, course designers or course developers, contractors and Headquarters Program Managers.

Background

Job aids should be used whenever appropriate for the following reasons:

1. Job aids do not forget information. Therefore, job aids are more reliable and consistent than human memory. The problem with relying on instruction alone is that humans forget details unless the details are reinforced frequently. Job aids help them remember details they might otherwise forget
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Section I: Overview (Continued)

Background

2. A JA is a storage place for procedural information that contains the information necessary to perform a task. Thus, an EXIT sign is not a job aid because it does not provide information about when to exit or how to perform an exiting procedure. An aircraft brochure on how to open the exit door is a job aid because it describes when and how to remove the door.
3. JAs should be used to shape performance of initial performance-based learning (mastery or memory), or as a performance-based refresher/re-learning tool when the performance is periodic, or as unsupported job-site performance.
4. In addition, JAs can be used to support behavior with prior training, the job aids can be used to train to mastery (i.e., JA with extensive training, or JA with intro training), or it can be used to train to memory by increasing its use through repetitive practice.
5. The Coast Guard can develop job aids three to four times faster than developing training materials designed for memorization.
6. The Coast Guard can train the use of job aids three to four times faster than training the same tasks for storage in human memory.
7. Job aids can be revised faster than instructional materials used to teach for memorization.

Therefore, job aids are more reliable, consistent, and faster (thus less expensive) than traditional training to memory.

Use of Job Aids

Program approved job aids shall be used when appropriate as determined by personnel trained and proficient in job aid design and development.

Approved Methods for Gaining Proficiency in Designing and Developing Job Aids

Coast Guard personnel gain proficiency in the analysis, design, development and validation of job aids through graduation from one of the following courses and subsequent practice in actually designing and developing job aids:

Section I: Overview (Continued)

- Coast Guard Course Designer Course (CDC, resident and non-resident); are taught as resident training at the Instructional Systems School in Petaluma, California.
- “Developing Job Aids for Peak Performance” workshop formerly known as the “Job Aids Workshop (JAWS).” SABA Knowledge Services owns this workshop and provides training at regular intervals for a set fee. The Coast Guard Training Center in Petaluma teaches this workshop (there are costs for instructional materials, travel and lodging); the Coast Guard’s Performance Technology Center (PTC) has people skilled in designing and developing job aids who consult with programs needing to develop job aids.

Approved Methods for Gaining Proficiency in Designing and Developing Job Aids

- SABA Knowledge Services three-part Peak Performance System workshops, “Optimizing Human Performance” (previously Front End Analysis), “Training Design for Peak Performance”, and “Training Development for Peak Performance” (formerly known as the Accomplishment-Based Curriculum Development (ABCD) workshops) also satisfy this requirement, particularly the second and third workshops that deal with the design and development of performance-based training materials. These are commercial workshops owned by Saba Performance Improvement Services. Personnel in TRACENs Petaluma, Yorktown, and Elizabeth City have obtained certification to train Peak Performance System Workshops.
- Course Designers and Developers who are developing job aids for the Coast Guard can also use references such as Dr. Rossett’s A Handbook of Job Aids or Dr. Nelson’s Expert OJT training and materials. These references (and others) follow the same procedures as SABA’s workshops for designing and developing effective and efficient job aids.

Assistance

Schools that require assistance in the development of job aids can receive help from a graduate of any of the above curricula.

Graduates of the above curricula may be found at Coast Guard training centers, Petaluma, Yorktown, and Elizabeth City (ATTC).

Section I: Overview (Continued)

Coast Guard Procedures for Producing Job Aids

Several kinds of stimuli call for the development of job aids. One is a front-end analysis (FEA) report that has identified several tasks that require job aid development. Another is a job task analysis that has identified several tasks in existing training that should be converted to job aids. Yet another is a program's decision to job aid a task as an effective and efficient means of passing knowledge, information and skills to the field. Still another is the result of course designers conducting job aid analysis on a group of tasks they have been asked to train.

The school responsible for providing the official skills, knowledge, and information regarding a Coast Guard task shall develop and validate job aids in accordance with the procedures described in the next section.

Section II: Coast Guard Procedures for Producing Job Aids

Job Aid Analysis

As part of a front-end or job task analysis, analysts will conduct job aid analysis. Schools will not routinely proceed toward job aid development without the benefit of the results of FEA or JTA, but if they have a situation in which they must design and develop job aids for existing (approved) training, then the responsible school shall conduct a job aid analysis. Graduates of one of the approved job aids curricula listed above shall perform the job aid analysis in accordance with guidelines in applicable curriculum and the standards listed in this SOP.

Job Aid Development Project Management

- "Based on recommendations contained in analysis report or through the RFA process to conduct an S&K JTA.
- Another source of authorization to develop a job aid solution is the SOW documentation.
- This SOP should require the development of Project Management Plan for major Job Aids to describe the process and the intended outcome, establish roles and responsibilities, to include development, implementation, and distribution. Additionally, it should include the responsibilities for periodic review and update schedule.
- It should define project timeline for milestones and deliverables

Step 1: Collect Task Data

The first step in job aid analysis is collecting task data; Analysts conducting task data collection should use worksheets for this purpose (part of the SABA instructional materials) or similar tools.

Task data should cover:

- **Speed.** How fast the worker must do the task.
- **Barriers.** Are there physical/environmental barriers to using the job aid? And, can those barriers be minimized?
- **Frequency.** How often does the worker have to do the task?
- **Consequences.** What is the result of making a mistake in doing the task?

Section II: Coast Guard Procedures for Producing Job Aids (Cont)

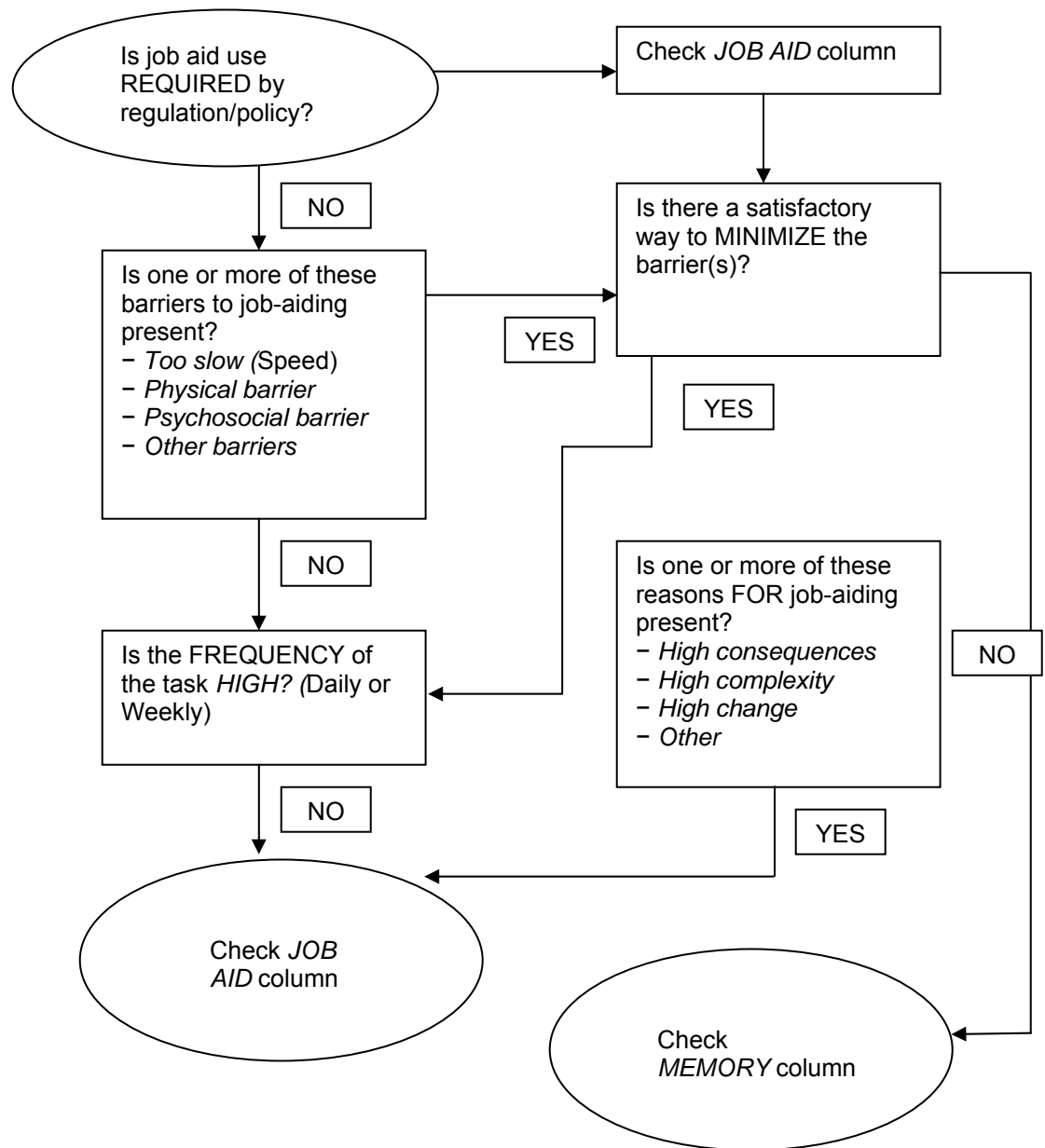
- **Complexity.** How difficult is the task to do?
 - **Change.** How likely is the task to change in the next year or two?
 - **Other variables.** What other variables might rule out using a job aid on the job?
 - **Mandate.** Is there an organizational mandate or policy that states a job aid must be used to do the task?
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Section II: Coast Guard Procedures for Producing Job Aids (Cont)

Step 2: Sort Task Data through Memory vs. Job Aid Filter

The second step is to sort task data through a memory versus job aid filter. That step will identify:

- Tasks that should be converted to job aids
- Tasks that must be trained to memory

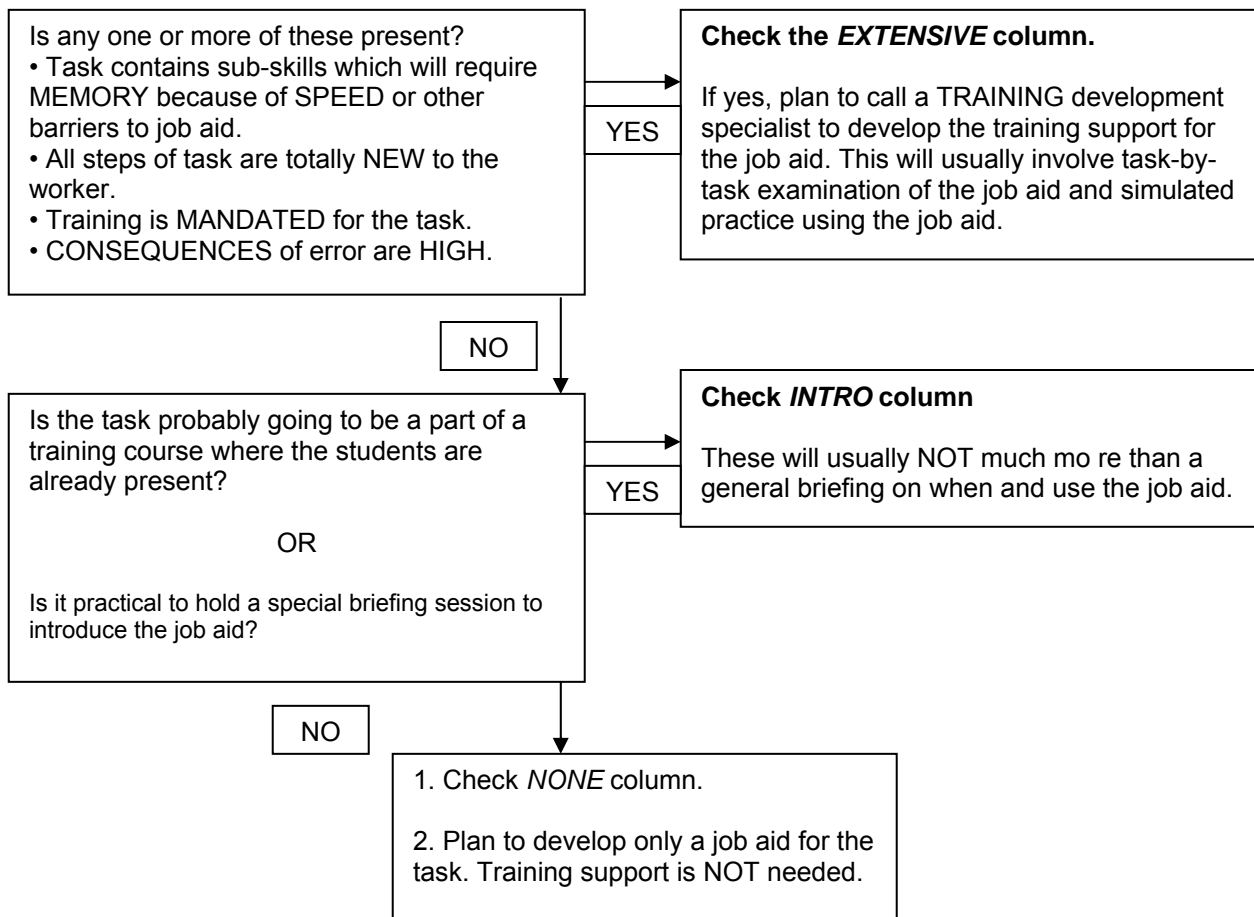


Section II: Coast Guard Procedures for Producing Job Aids (Cont)

Step 3: Sort Tasks to be Job-Aided through Training Support Filter

The third step is to sort those tasks identified as candidates for conversion to job aids through a training support filter. That step will identify job aids that require:

- No training support and can stand alone
- Introductory training
- Extensive training



The results of job aid analysis, and the data considered in deciding the results, shall be included as part of the school's audit trail for the Instructional Systems Development (ISD) process.

Section II: Coast Guard Procedures for Producing Job Aids (Cont)

Step 4: Design and Develop Job aids

During the design and development phase, the responsible school shall design job aids as the first products to be developed.

The steps in this phase are:

- Describe detailed behavior (task steps) for each task to be job-aided (may include a new paradigm for tasks with branching decision points).
- Decide the format for the job aid:

If Task Is:	Then Format Should Be
Decision-Making	Decision Table
	Algorithm
Sequential	Cookbook
	Worksheet

- Develop draft job aid

Graduates of one of the approved job aid curriculum shall design and develop job aids in accordance with the guidance from their job aid curriculum and the standards listed in this SOP.

Step 5: Validate Draft Job Aid

During the development phase, the responsible school shall validate a draft job aid for effectiveness and user friendliness.

- The steps for validation are editing, trying out, and revising the job aid
- The final job aid draft must also undergo several edits before finalization

Graduates of one of the approved job aids curricula shall validate and edit the job aids in accordance with the guidance from their job aids curriculum and the standards listed in this SOP.

Section II: Coast Guard Procedures for Producing Job Aids (Cont)

Step 5a: Edit the Draft Job Aid

Job aid developers shall conduct three edits of each draft job aid:

Edit For:	Steps:
Content	<ul style="list-style-type: none">• Technical correctness• Completeness• No extraneous information• All context information included• Put user under stimulus control
Structure	<ul style="list-style-type: none">• Context information at beginning?• Format appropriate?• Tells user when before do?• Steps small enough?• Information used together presented in same place?• Drawings to left of illustrations?• Enough white space?• Critical information highlighted?• Decision tables in boxes?• Steps numbered for sequence?
Language	<ul style="list-style-type: none">• Consistency• Simplicity• Clarity

Section II: Coast Guard Procedures for Producing Job Aids (Cont)

Step 5b: Conduct Trials for Draft Job Aid

Job aid developers shall conduct trials to determine how well the draft job aid works. Put another way, can the user produce the accomplishment to Coast Guard standards, using the job aid?

BETA Preparations

Ensure the individual trying out the job aid represents target users and has the same entry prerequisites as ultimate job aid users. Conduct supporting training (if any). Make sure you are conducting trials in as close to real-time, real job environment as possible. Steps for try-outs are:

Steps	Actions
1	BETA draft job aid with one worker at a time in as close to real environment as possible
2	Observe worker using job aid: <ul style="list-style-type: none">•Do NOT help user•Provide anything left out and make note on job aid of missing material
3	Stop worker if about to make a costly or dangerous mistake
4	Make notes at time of try-out on your copy of job aid
5	Conduct de-briefing with worker

Section II: Coast Guard Procedures for Producing Job Aids (Cont)

Step 5c: Revise the Draft Job Aid

Job aid developers shall use the results of trials and debriefing to revise the job aid.

Steps	Actions
1	Revise job aid based on trials results.
2	Conduct at least one more trial.
3	Use results from trials to draft final job aid.
4	Conduct additional try-outs (at least one more).
5	Continue revising the job aid based on additional trial data.

Step 6: Troubleshoot the Draft Job Aid (optional)

If the job aid developer has a job aid troubleshooting checklist available, the developer can use that tool for a final check of the draft job aid.

NOTE: Such checklists are available in the course materials referenced earlier. They are also available in reference materials such as ASTD's Info Lines, Dr. Rossett's Handbook of Job Aids, etc.

Step 7: Submit Job Aid for Approval

Job aid developers shall submit finalized job aid to the appropriate Program Manager or Rating Force Master Chief (RFMC).

Developed By	Approved By			
Training Center (TC)	Training Officer	CG-132	Rating Force Master Chief (RFMC)	Program Manager
Other Unit				

Section II: Coast Guard Procedures for Producing Job Aids (Cont)

Step 8: Deploy the Official Job Aid

The applicable Program Manager or RFMC will deploy the approved job aid to field units. However, the job aid developer should coordinate with these people concerning deployment plans. Questions that may need to be answered are:

- Will the job aid be deployed as print material and if so, who will be responsible for printing, storing, etc. the job aids?
- Will the job aid be delivered as a CD-ROM? If so, who will burn the CDs and who will deploy them to applicable units?
- Other related logistical and “who is responsible/who pays?” questions.

NOTE: The Program Manager or RFMC may need TRACEN staff to assist with deployment implementation.

Step 9: Maintain the Job Aid

The job aid developer shall coordinate with the applicable Program Manager or RFMC to determine who will be responsible for job aid maintenance. Typically, if TRACEN staff have developed the job aid, then they will be responsible for ensuring the job aid is maintained (i.e., revised to keep up with changing qualification factors, policies and/or procedures).

Glossary

Meaning of Job Aid Terms

The following terms are commonly used with the development of Job Aids.

Term	Meaning
Checklist	Standardized steps for analyzing, designing, developing, implementing, and evaluating an instructional product
Decision-Making	Choices displayed by a performer in reaching specific performance outcomes
Job Aid	Job Aids (JAs) are procedure guides with varying levels of procedure guidance used to shape behavior (when used for training purposes) or direct behavior (when used to elicit exact performance without prior intervention). A JA is a “storage place” for information other than human memory. Used on the job and accessed in real time, JAs are guides that support performance.
Memory	Relying on human recall of information for measurable behavior
Sequential	A predetermined order of measurable performance behaviors
Task	Specific performances that are observable and measurable
Try-out	BETA testing to validate the design of an instructional product

References

References Used for Job Aids

The following references are recommended for the development of Job Aids.

Topic	Reference
Preparation for Job Aids	Harless, J.M. "Preview and Preparation for JAWS." Harless Performance Guild, Inc., (1995), 1-26.
	Alison Rossett and Gautier-Downes, Jeannette. "A Handbook of Job Aids." Jossey-Bass/Pfeiffer. (1991), 39-58.
Information for Job Aids	Harless, J.M. "Need for Job Information." Harless Performance Guild, Inc., (1995), 1-25.
	Alison Rossett and Gautier-Downes, Jeannette. "A Handbook of Job Aids." Jossey-Bass/Pfeiffer. (1991), 107-120.
Deciding on Tasks For Job Aids	Harless, J.M. "Job Tasks to be Treated," Harless Performance Guild, Inc., (1995), 1-25.
	Mager, Robert F., "What Every Manager Should Know About Training." The Center for Effective Performance, Inc., (1992), 135-146.
Information About the Task	Harless, J.M. "Task Data." Harless Performance Guild, Inc., (1995), 1-25.
How to Use Job Aids	Harless, J.M. "Job Aid or Memory." Harless Performance Guild, Inc., (1995), 1-25.
	Alison Rossett and Gautier-Downes, Jeannette. "A Handbook of Job Aids." Jossey-Bass/Pfeiffer. (1991), 29-38.
Maintenance of Job aids	Harless, J.M. "Training Support." Harless Performance Guild, Inc., (1995), 1-25.
Wording the Job Aid	Harless, J.M. "Describe Detailed Behaviors." Harless Performance Guild, Inc., (1995), 1-29.
Formats for Job Aids	Harless, J.M. "Select Formats for Job Aids." Harless Performance Guild, Inc., (1995), 1-29.
	Alison Rossett and Gautier-Downes, Jeannette. "A Handbook of Job Aids." Jossey-Bass/Pfeiffer. (1991), 59-82.
Keeping Job Aids Relevant	Harless, J.M. "Construct Job Aids." Harless Performance Guild, Inc., (1995), 1-36.

References (Continued)

References Used for Job Aids

The following is a continuation of Job Aid references.

Topic	Reference
Design and Use of Job Aids	Harless, J.M. "Job Aid Analysis, Design, and Development." Harless Performance Guild, Inc., (1995), 1-70.
	Alison Rossett and Gautier-Downes, Jeannette. "A Handbook of Job Aids." Jossey-Bass/Pfeiffer. (1991), 39-58.
	Alison Rossett and Gautier-Downes, Jeannette. "A Handbook of Job Aids." Jossey-Bass/Pfeiffer. (1991), 83-106.