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Task/Competency Based
Training Needs Assessment¹
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The defined purpose or goal of a successful training effort is not oriented at producing a "well-educated" work force. Rather, the proper role of training is to assist in providing a competent work force by satisfying job-specific needs. There is no justification for expenditures on training programs that do not increase the efficiency and/or effectiveness of the workforce. In other words, training should not be an end in itself, but a service that enables individual employees to make greater contributions in their various missions. Training must be directed at specific individual and organizational needs. Such training needs analysis is a function recognized as an integral part of any well-designed training program by training theorists and academicians (Moore, 1978). Its logic is simple. To utilize training dollars and resources most effectively, one must first determine the location, scope, and magnitude of the training need. This is the basic purpose of training needs assessment (TNA). In spite of this, training needs analysis is seldom the carefully developed and systematic investigation that the professionals in the employee development field propose.

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There are many ways for a manager to become convinced that an adequate training needs assessment is routinely being conducted in his organization when, in fact, it is not. First, the existence of some training needs is obvious and can be accepted on the basis of common sense and reason. Secondly, it is not at all difficult for someone to get opinions about needed training. Everyone contacted in an organization will give some kind of response to inquiries about training and development. Expressions of "needs" by managers, supervisors, and employees, gathered in this way tend to reflect the broad attitude that "training is good," with little regard for its relationship to definitive needs of the organization (DUEL, 1970). You may get, for example, "I had lunch yesterday with John Spike. He tells me his unit is giving all supervisors a course in public speaking. I think all of our supervisors could use that too." It could just as well be sensitivity training, creativity training, speed-reading or any other fads which seem to continuously sweep across the training scene. What must be recognized is the difference between training needs and training wants. It is the wants, not needs which are generally first expressed by supervisors and employees. Finally, the basic process for identifying training needs appears quite simple: Determine what is required or expected in the job. Determine the degree to which this requirement or expectation is being met. If it is not being met, find the reasons. Then, to the extent that these reasons involve deficiencies in knowledges, skills or abilities in the workforce, a need has been identified which training can probably help meet (USCSC, 1961). The simplicity of this process is exceedingly deceptive because so many complex determinations, many of which are necessarily subjective, must be made. Adequate training needs assessment must reduce this subjectivity to the extent possible by taking a formal approach.

¹Presented at the annual conference of the IPMA Assessment Council; San Diego, California, June, 1979.

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That which follows is based on the efforts of a task force to conduct the type to training needs assessments suggested as necessary by the preceding comments for the program audit function of the U.S. General Accounting Office.

Model And Methods

The overall model adopted to guide the work of the task force is shown in Figure 1. While the scope of their assignment is encompassed, for the most part, in Phase I of this model (determining training needs), the Task Force felt it important to operate within the more complete framework of a training design system. This, it was felt, would encourage the development of data having maximum utility for effective training design in the future.

The model provides for a dual-path approach to training needs assessment. One prong of this parallel analysis focuses on the job (task analysis) and addresses the nature of the task being performed and the knowledge, skill and ability requirements for performance of that function. The second thrust of the model is aimed at the workforce (population analysis) and addresses the current state of capabilities and competencies possessed therein. It is the discrepancy between these two analyses which identifies training needs. That is, the "gap" between the knowledge, skills and abilities required to perform a job/task and the knowledges, skills and abilities existing in the available workforce is what defines a training need.

This all important step of anchoring needs assessment to the discrepancy between competencies required for successful performance of assigned tasks and competencies possessed by the workforce relative to the tasks to be performed is all too often neglected in the typical training needs analysis. When this is the case, time and money may be expended on training programs that deliver or improve competencies not required by the job, or on training individuals in skills already possessed.

To summarize, then, defining training needs is appropriately approached from a task/competency analysis perspective. That is, there are two important pieces of information which must be gathered: the required level of competency for successful task performance and the actual level of competency in the workforce. By obtaining these two pieces of data, a discrepancy is set up which defines the problem. Determining training needs, therefore, begins with an assessment of what tasks must be performed to complete the job. Second, it requires a specification of the knowledges, skills and/or abilities (competencies) required if the job is to be effectively performed. Third, it involves determining the degree to which employees actually possess these competencies. Fourth, it requires a determination of the discrepancy between expectations and actual performance. Fifth, it requires decisions concerning which competencies associated with below-standard performance can be improved by training. Sixth, it requires establishing data for setting priorities and targets. Seven, it requires displaying this data in a useable format.

A Model for Analysis and Design of Effective Instruction

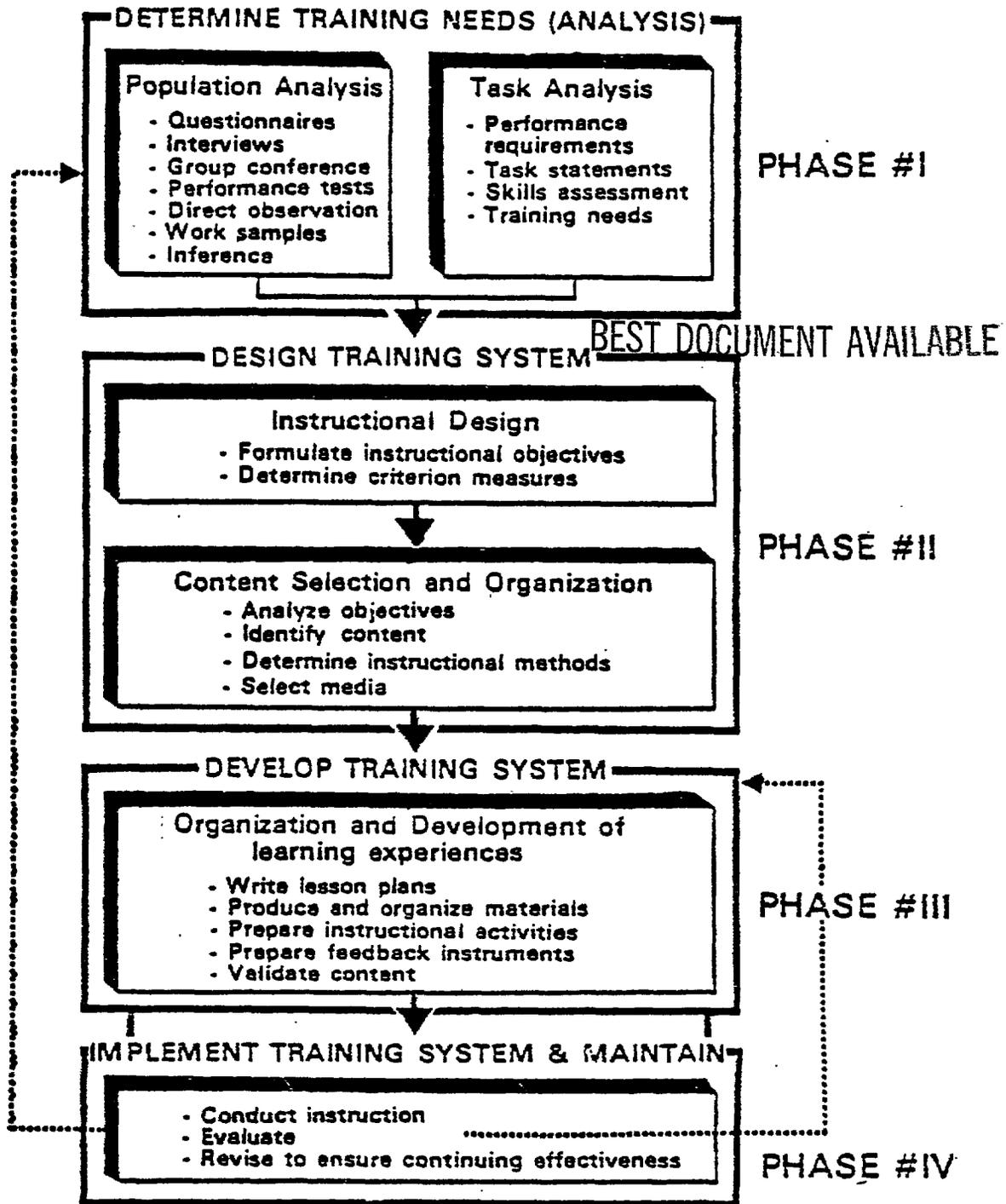


Figure 1

Figure 2, diagrams this basic approach to TNA. The above TNA rationale and model were represented in the present assessment of training needs for the GAO audit function by:

- A. steps 1 and 2 - Task/Competency Analysis
- B. step 3 - Training Needs Survey
- C. step 4 - Developmental Computation of the Need Index
- D. step 5 - Establishment of a Training Value
- E. step 6 - Assessment of Ongoing Training
- F. step 7 - Development of a Decision Grid

Procedure

Task/Competency Analysis. The first type of data required for a needs assessment is a specification of what actually must be done on the job if the job is to be effectively performed. If one is to determine the requisite knowledges, skills and abilities for any job, one must first know, in fairly specific terms, what the job is.

The job analysis procedures employed by the GAO task force were a form of operations analysis referred to as task/competency analysis. Operations analysis is distinguished from other forms of job analysis by its purpose of determining what an employee needs to be taught in order to perform the job at the desired level (McGehee and Thayer, 1961). Task/Competency analysis is the process of breaking a job down into its component tasks for the purpose of describing the knowledge, skill and/or ability component of competency. Job Tasks can be identified in terms of:

What is done - (The specific action which takes place)

EX: Observes and maintains

To whom or what is it done -

EX: functioning of card punching machine

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For what purpose -

EX: to detect misfeeds, jamming and off punches and take corrective steps to restore machine to proper function

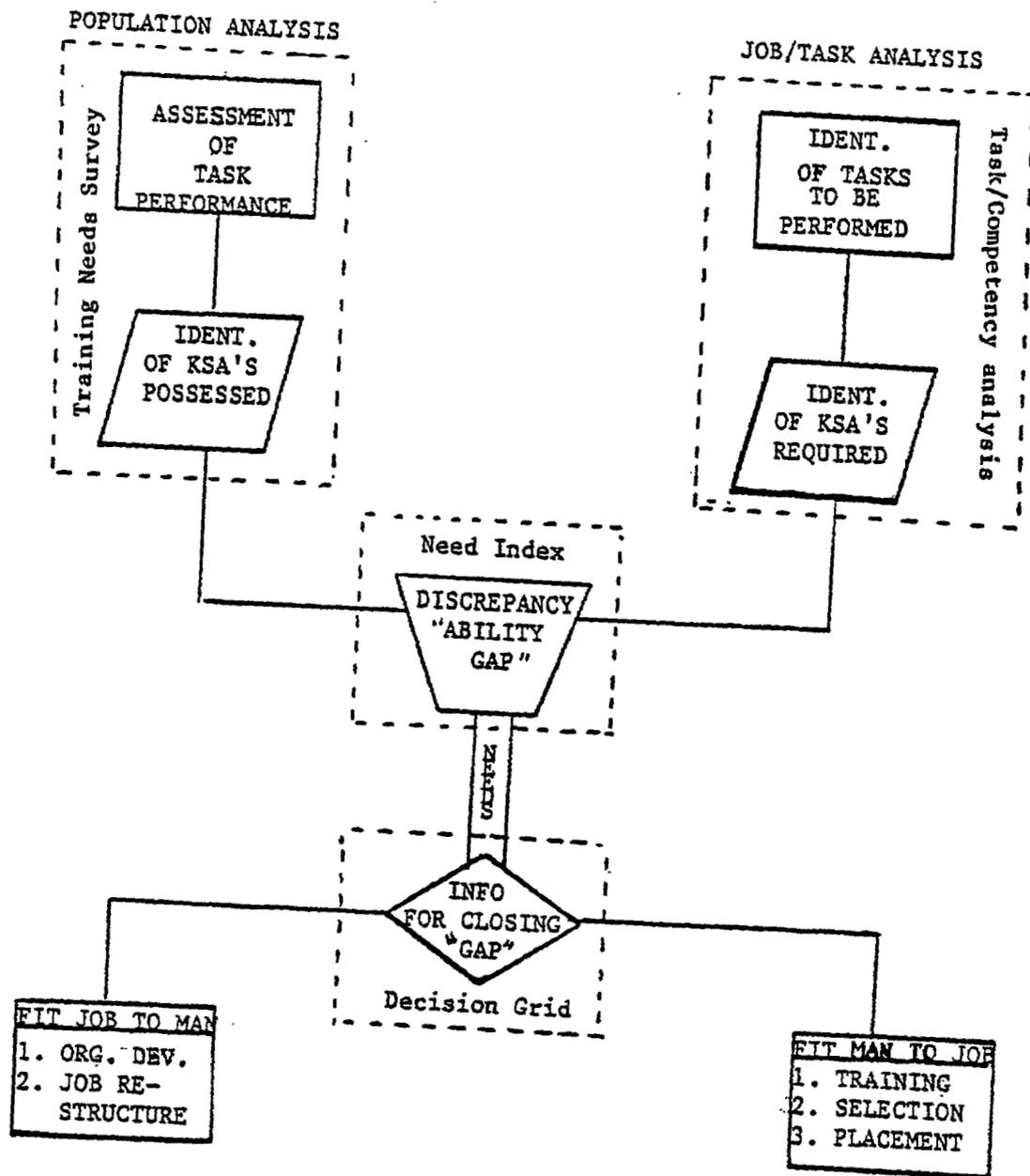
Using what tools and/or resources -

EX: wrench, screwdriver, special alignment tool, form 729 (for reporting action taken) and operator's manual.

Taken together, the above comprise one task statement for the job of "keypunch machine mechanic".

In order to identify and validate the basic tasks performed in the GAO audit function, several exercises were conducted. First, the task force met with several active audit teams. The audit team was briefed as to the purpose of the project and the goals of the session. After a general briefing and a question and answer period, each audit team was asked to indicate within the framework of a given job dimension what they did; what actions they performed; what steps they took to accomplish that job function. Each team was given 20 to 30 minutes to "brainstorm" this question. After the "brainstorming session" the team was instructed on the procedures and content requirements for writing task

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Figure 2

statements. Then, each item produced during brainstorming was taken in turn by the group and converted to a complete task statement.

Seven full sessions of approximately 6 hours each were required to complete the task analysis. In all, 99 audit function tasks were identified in the following job dimensions:

1. Job Planning
2. Data Gathering and Documentation
3. Data Assembly and Organization
4. Data Analysis
5. Written Communication
6. Oral Communication
7. Administrative Duties
8. Establishing & Maintaining Effective Working Relationships
9. Equal Employment Opportunities
10. Supervision

In order to verify the accuracy and completeness of the task statements the above procedure was independently duplicated in another GAO Regional Office where 71 tasks were identified. A cross-matching of these two sets of audit tasks determined that, while wording and structure did vary, few unique tasks appeared on either list. Consequently, the task force consolidated the two lists. The result was a list of 105 task statements. (See Exhibit A for example).

Validation of the consolidated list of audit tasks was accomplished using an abbreviated version of the original task identification procedures. Audit teams from 5 headquarters divisions were asked to "brainstorm" the audit function as before. In this instance, however, after the brainstorming session, the task statements already identified were fed back to the group. It was then determined whether each "brainstormed" item was included in or otherwise covered by the existing task list. This exercise was followed by a general discussion of the adequacy and accuracy of the task list. This procedure, while leading to revisions of the wording and refinement of several task statements, contributed just 4 new tasks.

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The next step in the Task/Competency Analysis was to determine the knowleges, skills and abilities (KSA's) required to perform each of the audit function tasks identified. To do this, the Task Force assembled a group of subject matter experts (SME) in the areas of program and evaluation audit, and employee training and development. The SME's reviewed the task statements and determined the competencies required to perform each in KSA terms. This process identified 227 different competency requirements for the audit function.

Training Needs Survey. The next phase of the TNA was to determine the extent to which performance problems related to these tasks existed in our current workforce. To systematically obtain data identifying task-related performance problems, the Task Force developed and administered the "Training Needs Survey" (TNS). The TNS was a questionnaire administered to a stratified sample of GAO auditors, team leaders, and assistant regional managers and division directors. (See Exhibit B for sample).

The TNS simply presented the 109 audit tasks and, for each, asked the degree to which the respondent was "involved" in that task. The scale of involvement used was as follows:

- Level A - no involvement in the task
- Level B - must be aware of or understand the task
not directly involved
- Level C - perform task with close or direct supervision
- Level D - perform task with general or minimal supervision
- Level E - teach or supervise others in the task

Each respondent was then asked to go back through the list of tasks and select the 20 to 25 tasks they felt they (or those they supervised) were performing the "best" and the additionally the 20 to 25 tasks they saw themselves (or their subordinates) as doing "least well".

Grade 7-14 auditors were instructed to complete the form on themselves. The supervisors were asked to select "well" and "poorly performed" tasks based on the general performance of employees they supervised. ARM/AD's were to indicate their perceptions of task performance levels for their region/office in general. In all, 270 questionnaires were distributed and 247 responses were returned (91% response rate).

The frequency with which auditors and supervisors selected each task as being performed "well" and being performed "poorly" was compiled, as well as, the frequency distribution of task involvement levels. Discussion of this data will be deferred until later in this report as the Training Needs Survey was an interim step to compilation of more meaningful data detailed below.

Development and Computation of the Need Index. The fourth major step of the training needs assessment was primarily one of developing a procedure for integrating the data already collected. At this point, the Task Force had identified the basic tasks to be performed to complete a successful audit, the knowledges, skills and abilities necessary to perform those tasks, and the reported performance level of our current workforce on each task.

The goal of the Task Force was to compile data in such a way that it would be understandable and useful to all involved in making decisions about the agency's training programs. To do that, the task force began exploring techniques for summarizing all needs assessment data into a single, quantified, easily interpreted measure of need for training (or other attention) on specific audit tasks resulting from a performance discrepancy. Quantification was felt important so that needs could be prioritized or ranked according to their severity. This turned out to be no small order.

First, it was obvious that a complete picture of the gap between task performance and task standards could not be given without information regarding the impact of performance conditions associated with a particular task on the successful completion of an audit. What was missing was some measure of the

relative "criticality" of the different audit tasks. Obviously, some tasks are more important, or have a higher impact on the quality of an audit than others.

A group of 21 subject matter experts were asked to independently review the list of 109 audit tasks and select (not rank) the 20 to 25 most critical. "Most critical" was defined as those tasks which, when done well, contribute most to the success of an audit, or conversely, if not done well could mean the failure of the audit. The frequency with which a task was selected by the SME group was tabulated and taken as the "critical value (CV)" of that task.

Now, the task force was ready for the formulation of a "Need Index".¹ The logic used in that process is described below.

First, assuming that the task/competency analysis approach, the "ability-gap" theorem, and our data were sound, training (and other performance improvement) needs can be defined by the degree to which performance of a particular task is critical to overall success of the job in some combination with the level of proficiency with which the task is currently being performed. Looking at the TNA raw data the important parameters were thus:

- A. The critical value of the task (CV)
- B. The proportion of the workforce performing the task at a sub-standard level
- C. The number of employees with performance problems

The more critical the task (A) and/or, the higher proportion of employees reporting "least-well" task performance (B), and/or the greater the number of employees requiring help (C); the higher the training need. The computational formula for the Need Index was designed to reflect those general conditions.

After numerous iterations, the following formula for computation of a Need Index was derived:

$$\text{Need Index} = 1 + \text{CV} \left(\frac{.5L_e + L_s}{.5N_e + N_s} \right) \frac{N_L}{10}$$

Where: CV = critical value of the task

L = number of respondents placing that task in the "least-well" performance category

N = total number of respondents reacting to that task

The subscripts to L distinguish the response of supervisor(s) from their employees(e). These two response groups were given equal weight by multiplying the latter by .5 to adjust for the larger employee sample vis-a-vis supervisors.

¹The term "Need Index" was used rather than "Training Need Index" recognizing many performance improvement needs are best handled by techniques other than training.

To test this Need Index formula, all permutations of the high vs. low condition of the three need index parameters were logically ranked by the task force members. Then, a need index representing each condition was constructed using dummy data. A comparison of the logical and computed ranks validated the formula. As can be seen below agreement was 100%.

RANK	Logical			Computational				RANK
	CV	L/N	L	CV	L/N	L	N.I.	
1. Greastest Training Need	H	H	H	15	.84	40	50.4	1
2.	H	L	H	15	.27	40	16.2	2
3.	L	H	H	4	.84	40	13.4	3
4.	H	H	L	15	.84	10	12.6	4
5.	L	L	H	4	.27	40	4.3	5
6.	H	L	L	15	.27	10	4.1	6
7.	L	H	L	4	.84	10	3.4	7
8. Least Training Need	L	L	L	4	.27	10	1.1	8

The formula was then applied to the actual data and a Need Index was computed for each task (See Exhibit C). The average Need Index for the 109 tasks was 11.84 with a range of 90.04 - 0.04 and a standard deviation of 14.95. It must be noted that the Need Index, while a fairly reliable indication of training (or other) need, is strictly an ordinal measure.

Establishing KSA Training Value. When addressing the issue of KSA delivery, proficiency in some competencies has a greater potential impact on task performance than others. Futhermore, some KSA's less readily amenable to training are better addressed through the selection process. One technique which provides information helpful for resolving both these issues was developed by Ernest S. Primoff of the U.S. Civil Service Commission's Personnel Research and Development Center.² Primoff's "job element rating procedures" provide information in easily communicated, numeric form relevant to the ability of a wide variety of individual competencies to contribute to superior performance in a task or job.

The TNA Task Force subjected the 227 KSA's identified in its task/competency analysis to job element analysis procedures. Twenty-one SME's completed the Job Element Blank for the 227 KSA's producing the following data for each:

Total Value (TV) - The purpose of this calculation is to identify KSA's which distinguish superior workers. Items with a high TV are considered major task/job elements constituting a broad range of competencies.

¹Ordinal data is defined by an operation which permits the rank ordering of the units of a group; that is, not only are conclusions of equality or difference possible, but also, statements of the kind "greater than" or "less than". However, statements about the equality of difference between members or the number of times one member is greater or less than another are not possible.

²A complete description of the "Job Element Approach" can be found in Technical Study 75-1 published by the U.S. Civil Service Commission Bureau of Policy and Standards, 1975.

Item Index (IT) - The item index, like the total value identifies competencies which distinguish superior workers. The competencies identified by a high IT are not as broad. Thus, they are easier to describe with precision.

Training Value (TR) - The training value of an element indicates the extent to which it relates to superior work but is not practical to expect to find that KSA among those being employed.

The value and relationship among the TV, IT and TR are useful for determining those competencies which contribute greatest to job/task success, and, among them, which are best addressed by selection and which by training.

Assessment of Ongoing Training. Of interest to the process of assessing organizational training needs is the extent to which existing training programs are satisfying identified needs. An assessment of ongoing or existing training programs is necessary and useful for at least three reasons. The first, and most obvious, is to identify areas of need which current training programs do not address. Where these areas reflect a high Need Index, the development of new training coverage must be seriously considered. Secondly, when redesigning or adjusting training programs to respond to a training need assessment, there is a constant danger of removing or in some way tampering with existing training efforts which are highly effective. Some areas will not emerge as training needs in an assessment simply because current training is doing an adequate job of satisfying those needs. It, therefore, cannot be assumed that if a specific task or competency is not associated with a high need indicator that current training in that area can be reduced or eliminated. It is important to determine just what effect current training is having. A third reason to gather information about existing training program is to identify KSA-specific sources of training when attempting to satisfy individual training needs.

Each member of the employee development staff responsible for or most knowledgeable about an auditing related training course was given the complete list of tasks and their associated competencies. They were asked to review the list and note when a particular task or competency was addressed in one of their courses. This process was followed by a one-on-one session with a member of the Task Force. During this session each entry made was discussed and, to the extent possible, several points were established. They were:

1. if, in fact, the particular task or competency was being addressed in that course.
2. as specific as possible, where in the course it was being addressed; that is, the day, the module, or the segment of the course designed to deliver related KSA's.
3. the target group for that instruction.
4. the level of learning which the instruction was designed to deliver.

With regard to the last of these, three levels of learning and instruction were defined. Course content could have been designated for delivering:

- a. Familiarity - Participants at this level are made aware of the existence of information and/or procedures, and are able to recall portions of this information or where to find resources for its use when needed.
- b. Understanding - Participants at this level obtain a thorough knowledge of the subject matter and are able to explain and integrate the information with other concepts.
- c. Application - Participants have mastered concepts and skills at this level and are able to apply or perform them in everyday work.

The resulting matrix of course content, level of instruction, target group and task/competency data was fed into the Decision Grid as described immediately below.

Development of the Decision Grid. Typically, the nature and design of the format used for presenting training need assessment data has a strong influence over how the data is used. The final step in the needs assessment model used for this project was the process of organizing needs assessment data into a manageable format for decision-making. The Task Force chose a graphic format for constructing a comprehensive picture of the agency's needs. This format based needs solidly in the data collected, and allows for the minimization of subjectivity, ease of interpretation, and maximum data flexibility and usefulness.

The general approach guiding the format of the "Decision-Grid" is a grid match between the competencies which are needed and those which are being provided prioritized by the severity of the need. The Decision-Grid presents the following data for each task.

- The Need Index score which represents the level of training need for the task.
- The KSA's associated with performance of that task.
- The training value of each KSA which indicates that degree to which a particular competency will enhance task performance.
- Training courses (modules) currently being offered which contain content directed at delivery of each KSA and/or task.
- The level of instruction at which the task/competency training is currently being delivered.
- The grade-levels at which KSA specific training is being directed.
- The grade-level at which full-performance of a particular task is generally expected.

--The level of instruction determined as most appropriate for effective KSA delivery; i.e., is a familiarity, understanding, or application level of KSA acquisition necessary for effective performance of a particular task.

--Viable options for effective delivery systems.

The grid-match approach to decision-making use of the TNA data is basically a system of comparing what is currently being offered with what is required to deliver the competencies necessary to perform basic audit function tasks. The objective of this comparison is to determine the degree to which what exists with regard to training, matches what is required or recommended with regard to performance; the ultimate purpose of which is to bring the two in line.

It has been suggested that the TNA Decision Grid can be used to guide future decisions concerning the design and direction of GAO training programs. It is important, then, that the usefulness of this instrument be fully explored and understood. Figure 3 presents a sample page of the Decision Grid. The data displayed has been fabricated for illustrative purposes.

Col. # PG. No.									JOB DIMENSION: Any								
									9-11		12-15						
	NEED INDEX	TASK NO.	KSA NO.	TRAINING VALUE	CURRENT COURSES	CURRENT TARGET GROUP	CURRENT TRAINING LEVEL	FULL PERFORMANCE LEVEL	RECOMMENDED KSA TRAINING LVL.			DELIVERY OPTIONS					
									F	U	A	SELECTION	OJT	CLASS ROOM	CORRESPONDENCE		
47.2	#4																
		27	87	SUP-8	11-13	F	12				X					X	
		84	106	--	--	--	13	X				X	X				
		17	93	OA - 2	11-13	A	9				X		X	X			
8.6	#5																
		126	17	0 - 1		F		X					X				X
		35	73	OA - 3 OA - 7 SUPV-2	F A U	A	13		X				X	X			
		42	23	OA - 5 O - 3	11-13 7-11	U U	13		X			X					X

Figure 3

When using the Decision Grid the first consideration should be the Need Index found in column 1. As reported, the Need Index reflects the relative severity of needs among the various tasks. Initially, the tasks showing the highest Need Indexes should be attended to first.

There are several reasons why a task may be associated with a high Need Index (Col. 1, Figure 4). First, the current employee selection process and/or training program may fail, or only partially succeed, in delivering a complete set of the knowledges, skills, and/or abilities required to perform the task (identified in column 2) effectively. Second, if the training is properly designed to deliver the required KSA's, it may not have been targeted to the appropriate employee group at the proper point in their career, or the training may not have been designed at the needed level of instruction. Third, if the KSA training is available and its content and targets appropriate, it may be that the training is not being delivered effectively or simply has not received sufficient staff coverage.

Once it has been determined which task or tasks are to be addressed, the remainder of the Decision Grid is designed to assist in narrowing the above possibilities and providing data helpful for directing need reduction efforts. In this way, the Grid helps to find the gaps where training is needed and not available so it can be made so; to pinpoint current offerings which are misdirected so they may be adjusted; and to bring into focus areas where coverage seems sufficient and appropriate so that closer analysis can be conducted if necessary.

Column 5 through 7, of the Decision grid describe current training course conditions for each KSA associated with a particular task. Column 5 shows the course or courses designed to address a specific task-related KSA (identified in column 3); attempts were made to narrow course content to the module, day, or other portion of the course where that KSA is specifically addressed. Column 6 defines the target group to whom that training is directed by grade level. Column 7 indicates the training level of the course content (i.e., Familiarity, Understanding or Application).

Column 4 shows the training value attached to each KSA. In general, any task-related training effort should emphasize KSA's with higher training values, as they hold the greatest potential for improving task performance and are the least likely to be delivered through an alternate source, i.e. selection or placement.

Use of the Decision Grid in this process should proceed as follows:

1. Determine the tasks to be addressed based on the Need Index and resources available. In figure 4, for example, task 4 should receive a higher priority than task 5.
2. Determine the most effective methodology for satisfying a KSA requirement not currently being addressed such as KSA 84 under task 4. The "Delivery Options" columns 12 through 15 are designed to help this decision.

3. Design, deliver, or otherwise locate and make available training to satisfy KSA's not currently covered. Where selection rather than training is deemed the most effective delivery option, efforts should be directed to ensure the selection process incorporates coverage. (NOTE - Where KSA's have a low training value, high training coverage, and high selectability; such as KSA 42 in task 5 which also has a low NI, it may be advisable to reduce the training effort and rely more heavily on selection. This will free up those training resources for more critical needs.)
4. Determine whether current training efforts addressing particular KSA's are being delivered at the appropriate level of instruction and make adjustments where necessary and appropriate. Column 9 through 11 indicate the recommended level of training for each KSA based on the judgement of SME's. By comparing the recommended level of training with that actually reflected in the course content (column 7), adjustments are frequently indicated; such as in Figure 4, task 4, KSA 27 where familiarity training is being delivered and an application level of instruction would appear to be required.
5. Determine if current training courses are being properly targeted and make adjustments where necessary. To be most effective, training must be targeted so that it is delivered prior to the point in an employees' career when he or she is expected to fully utilize the addressed KSA's for successful completion of task assignments. If training is too early, knowledges and skills attained decay from disuse. If training is too late, damage in the form of lost production is likely to have already occurred. Column 8 indicates the modal grade for full performance of each task based on the task involvement data from the Training Needs Survey. Ideally, an employee should possess all critical KSA's associated with that task by the time full performance is expected. If current training is not targeted to accomplish this (column 6) adjustments should be made. This set of circumstances is illustrated in Figure 4, Task 4, KSA 17.
6. Conduct a closer examination of training programs where KSA training coverage appears adequate in terms of content, training level and targeted group but the Need Index is inexplicably high.

An Additional Comment

Training and the work of the Task Force for Training Needs Assessment should not be viewed in isolation. It is a part of the much larger effort to develop an effective Human Resource Management System for GAO. Components of this model are in various stages of development and design at GAO. Until recently these components have been relatively disjointed with no vehicle to tie things together. By identifying the tasks and competencies required to perform the audit function in more specific terms than ever before, TNA has provided that common link. TNA data ties training and development directly into the performance appraisal, selection, counseling, and assignment components of the Human Resources Management System. Figure 4 illustrates how these links are established.

Performance appraisal establishes performance standards based on tasks to be performed. These tasks are identified through TNA. Performance appraisal leads to an identification of individual employee performance problems based on the knowledge, skills and abilities required for task performance. The outcomes of the parallel PA and TNA processes are to identify, on the one hand, the training needs of the individual and, on the other, the sources which deliver the needed training. These two processes culminate in an Individual Career Plan (ICP) outlining the specific training courses and developmental assignments recommended to close the "ability gap" for that individual. The summation of all ICP's redefines organizational training needs and establishes a feedback loop to the selection and employee development subsystems for human resources management.

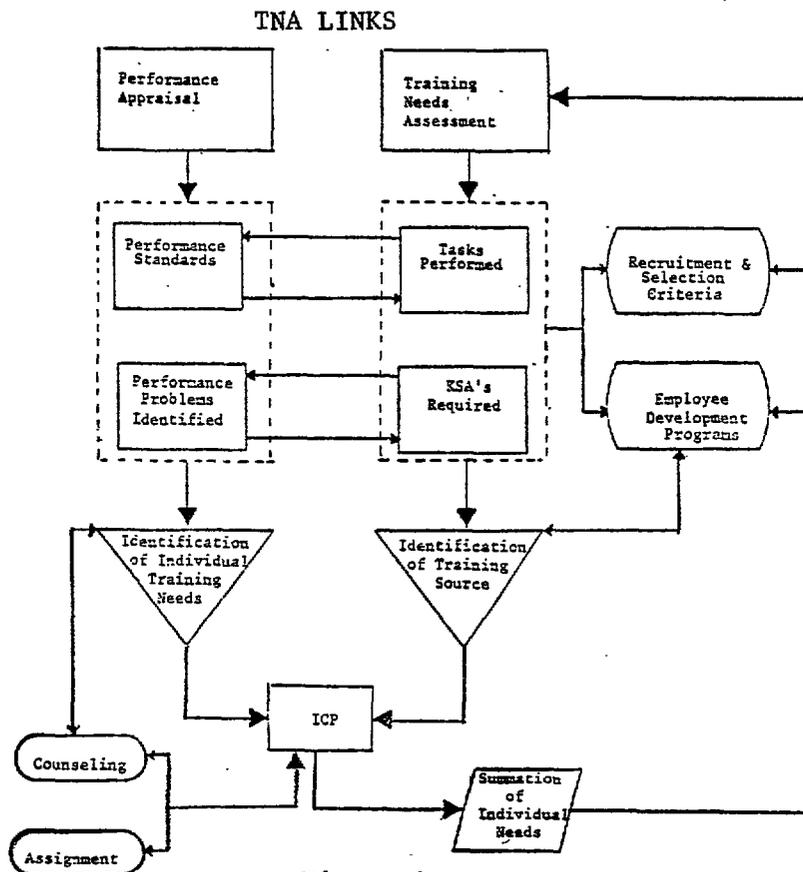


Figure 4

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1. JOB PLANNING

NEED INDEX

- 39.2 - 1. Identify potential areas of review to assure coverage in major issue areas using available GAO information and agency records.
- 1 - Knowledge of major issue areas
 - 4 - Knowledge of GAO constraints
 - 5 - Ability to project or extrapolate potential outcome or impact based on limited knowledge or information
 - 6 - Knowledge of what's going on in the rest of GAO
 - 8 - Knowledge of GAO priorities, both formal and informal
- 39.1 - 2. Project potential impact and findings of the audit to assess viability and its likelihood of potential acceptance using discussion from GAO management, legislative hearings and correspondence, and pending bills, brainstorming, and previously collected information.
- 5 - Ability to project or extrapolate potential outcome or impact based on limited knowledge or information
 - 7 - Knowledge of how change takes place
 - 9 - Ability to identify the "generalizability" of the problem area (geographic coverage, cross-agency, etc.)
 - 63 - Ability to read and interpret legislative material
 - 64 - Knowledge of basic techniques of brainstorming
- 15.1 - 3. Identify audit scope and objective in order to specify particular areas of inquiry and provide direction to accomplish the audit objective using initial request (letter, Congressional requests, Form 100) and information from requesting personnel (Congressional staff, audit program AD, etc.)
- 5 - Ability to project or extrapolate potential outcome or impact based on limited knowledge or information
 - 9 - Ability to identify the "generalizability" of the problem area (geographic coverage, cross-agency, etc.)
 - 25 - Ability to apply CAM to specific job situation
 - 28 - Ability to formulate clear objectives

5. WRITTEN COMMUNICATION

- 42.5 - 1. Identify the audience, purpose, and use of written material in order to select the proper format, appropriate style and tone for presenting written material.
- 89 - Knowledge of GAO procedures and standards for written formats (Report Manual)
 - 90 - Knowledge of different writing formats
 - 137 - Ability to assess audience needs and level
- 2.0 - 2. Take notes accurately from interviews and written material in order to summarize, outline, or highlight pertinent information.
- 66 - Ability to apply standard techniques for observing and recording human behavior
 - 71 - Ability to summarize data
 - 100 - Ability to abstract the essence of an interview
- 14.9 - 3. Assemble and outline the information in order to provide a logical structure for presentation of the material.
- 80 - Ability to organize data in logical format or sequence
 - 88 - Ability to construct a logical outline
 - 96 - Ability to accurately estimate amount of time needed to produce written material
 - 98 - Knowledge of flow charting
- 16.5 - 4. Consolidate and integrate written work of others in order to produce cohesive, well written reports, summaries, or digests.
- 74 - Ability to summarize data
 - 78 - Ability to find relationships among data sets and recognize inconsistencies
 - 80 - Ability to organize data in logical format or sequence
 - 95 - Ability to produce written material in a timely manner
 - 97 - Ability to integrate and condense data from several written sources

EXHIBIT B

TRAINING NEEDS ASSESSMENT SURVEY

GRADE: ()

Directions:

1. Place grade level at top of page.
2. Read task statement.
3. Check one column under extent of your responsibility for each task.
4. Go back through task list and complete columns two and three, according to general instruction in cover sheet (item 13).
5. Return survey to PDC/TC.

TASK:	EXTENT OF YOUR RESPONSIBILITY (Check only one per task)						Check the 20-25 tasks best performed	Check the 20-25 tasks performed least well
	no involvement in this task	Must be aware of or understand task but am not directly involved	Perform task with direct or close supervision	Perform task with general or minimal supervision	Teach or supervise others in task			
1. <u>JOB PLANNING</u>								
1. Identify potential areas of review to assure coverage in major issue areas using available GAO information and agency records.								
2. Project potential impact and findings of the audit to assess viability and probability of affecting a change and its likelihood of potential acceptance using discussion from GAO management, legislative hearings and correspondence, and pending bills, brainstorming, and previously collected information.								
3. Identify audit scope and objective in order to specify particular areas of inquiry and provide direction to accomplish the audit, objective using initial request (letter, Congressional requests, Form 100) and information from requesting personnel (Congressional staff, audit program AD, etc.).								
4. Coordinate work efforts, both external (OTA, CRS, CBO, etc.) and internal, to identify prior positions and issues to avoid conflicts and duplication.								
5. Identify, evaluate, and select alternative audit approaches in order to devise a plan which will meet the audit objectives.								
6. Determine amount, extent, and location of work to be performed in order to define resources needed to accomplish the audit objective.								

NOTE: THESE ARE A FEW PAGES FROM THE TRAINING NEEDS SURVEY. THE TOTAL PACKAGE CONTAINED 18 PAGES PRESENTING ALL 109 TASKS IN THE SAME FORMAT.

EXHIBIT C

LEGEND

CV=CRITICAL VALUE
 LE=NO. EMP. SAYING PERF. POOR
 LS=NO. SUPV SAYING PERF. POOR
 NE=NO. EMP. RESPONDING TO ITEM
 NS=NO. SUPV RESPONDING TO ITEM
 NL=TOTAL N SAYING PERF. POOR (LE-LS)

NEED INDEX COMPUTION *

Job Planning

<u>TASK</u>	<u>CV</u>	<u>LE</u>	<u>LS</u>	<u>NE</u>	<u>NS</u>	<u>NL</u>	<u>NEED INDEX</u>
1	9	38	25	69	40	63	37.208
2	10	41	20	69	35	61	39.101
3	12	24	12	71	39	36	15.077
4	3	34	15	56	28	49	11.200
5	7	32	13	78	42	45	12.889
6	3	34	12	58	29	46	9.200
7	19	73	33	88	46	106	90.041
8	3	31	17	39	30	48	12.606
9	3	36	12	43	22	48	13.241
10	0	25	14	31	34	39	2.046
11	15	36	14	73	44	50	31.801
12	7	47	21	69	35	68	34.832
13	2	9	12	53	36	21	2.117
14	3	22	10	47	31	32	4.932
15	2	16	8	65	40	24	1.589
16	3	20	11	52	32	31	4.490
17	0	40	20	57	32	60	3.967
18	3	9	3	59	37	12	.541
19	10	24	25	69	44	49	25.405
20	0	49	17	60	29	66	4.643

$\bar{X}=17.846$

S.D.=21.216

*NEED INDEX=1+CV $\frac{(.5LE+LS)}{(.5NE+NS)} \frac{NL}{10}$

HUMAN RESOURCES MANAGEMENT SYSTEMS

