

## **PHASE V: EVALUATION/MAINTENANCE**

### **INTRODUCTION**

Different models of curriculum development refer to this phase as control, maintenance, or evaluation. The intent of the phase is essentially the same, regardless of title: to ensure that an education and training program or course remains effective.

In the previous chapter on the implementation phase, we talked about completing a validation plan for the pilot implementation of a new program. The elements used to validate new training are applied to existing programs to monitor the on-going effectiveness of training. These validation procedures look at how well the training supports student achievement of the learning objectives. They do not look at the broader issue of how well the training supports entry-level performance after graduation.

We cover the requirements for on-going reviews in the first section of this chapter, "In-house Course Reviews." Much of this section repeats material covered under the chapter on implementation. We cover the procedures for looking at how well the training meets the needs of the Medical Department in the two following sections, "External Training Feedback" and "Mandatory Review Programs."

Maintenance of the curriculum is covered under sections on making curriculum changes and maintaining standardization at multiple sites.

### **IN-HOUSE COURSE REVIEWS**

In-house course reviews cover essentially the same elements as those in the validation plan developed for pilot implementation. However, after the pilot implementation, the focus is on maintaining the effectiveness and consistency of the training materials, testing instruments, and instruction.

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Results of on-going monitoring of instruction are summarized in short reports, as illustrated in Figure 6-1. Some schools refer to these as "after-action reports" or "after-instruction reports." We will use the term "after-instruction report" in this section, but the title isn't particularly important. As a minimum, after-instruction reports should include:

1. A summary of class achievement.
2. A summary of responses from student questionnaires.
3. Comments or suggestions from instructors (if the segment is taught by more than one instructor).
4. Disposition of any suspect test items or evaluation tools.

In addition, review lesson topic guides, instructional methods, and instructional materials for the course as a whole at least annually. The materials for one segment of the course may well be addressed in the after-instruction report for that segment. Nevertheless, the consistency of the course as a whole needs to be confirmed. Have changes in one area of the course created discrepancies with another area? Can technology (e.g., computer-based media or distance learning) be applied effectively in the course or part of the course? When will you need to request funds for new texts?

Each training program should have an established monitoring plan, detailing the data to be gathered for each after-instruction report and the frequency for reporting the data. Indicate in the plan whether a summary report will be generated and how long individual and summary reports will be retained on file. Finally, include provisions for insuring consistency, currency, and efficient use of technology across the course as a whole. Please note that neither plans nor reports need to be submitted to the training program manager, although they may be reviewed during site visits or comand inspections.

**AFTER INSTRUCTION REPORT**

Course/Unit: Surgical Technologist; Unit 6  
Class Size: 25  
Lead Instructor: HM1 Crockett

**Class Achievement:** There were three test failures on the unit final (all students passed retest); no failures on the other two written tests in the unit nor on the three performance checklists. Summary: Class average = 85.6%; lowest unit average = 75.4%; highest unit average = 96.8%; no disenrollments, no setbacks.

**Student Questionnaires:** The tally of responses at each level and the average response for each item on the student questionnaire is shown on attachment 1. The overall response average was 4.7, indicating a high level of satisfaction across the class as a whole with the unit materials and instruction. There were no marks less than 2 on any of the items. The average mark for all items was at least 3. Positive comments are summarized in attachment 1. No specific suggestions were received. The following negative comments were included by three or more students:

- a. The classroom designated for night study was cold. (15)  
We are working with building maintenance on this.
- b. Disliked pop quizzes. (12)  
Test failures have dropped significantly since we started using pop quizzes. Recommend we retain them.
- c. Not enough time to practice for second lab. (10)  
See comments under Instructor Input.

**Instructor Input:** Two instructors commented on lack of time for practice in the second lab. This has been a problem off and on since the last revision to the course. If we cannot get half an hour extra for the lesson, we could shorten the performance checklists for this lab. Suggested deletions are covered in attachment 2.

**Test Validity/Reliability:** Any item on a written test with more than eight incorrect responses was considered a high-miss question. A total of five high-miss items were found across the three written tests in the unit. Item #16 on the unit test involved a typographical error that made the "correct" response incorrect. A distracter for item #5 on Test 1 was partially correct. In each case, the item was dropped and students were given credit for the flawed item. Both were corrected on the master. On the three other items, students with high scores tended to get the correct answer and students with low scores did not. Recommend that these items be retained in current form.

No problems were encountered with the performance checklists.

**Other:** No problems were encountered with equipment, supplies, or materials.

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**Figure 6-1: Sample After-Instruction Report.**

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### **After-Instruction Reports**

#### **Class Achievement**

State the number of test and performance checklist failures within the segment (with results of retesting) and the number of academic/non-academic drops or setbacks that occurred during the segment. You may also want to include the class average and the lowest and highest averages for the segment.

#### **Student Feedback**

In each course, students provide anonymous feedback on the effectiveness of the instruction from their perspective, including problems they experience with the curriculum, the instructors, the training aids, the tests, and the equipment. A questionnaire such as the sample on page 5-8 should focus on information to improve instruction, and should be administered immediately following the class or unit being evaluated, when students' memory of the experience is fresh.

In the after-instruction report, summarize the feedback and report actions taken on adverse findings. In the sample report, the same negative comment from a relatively small number of students was sufficient to include the item in the report. Please note that not all things that students dislike need to be changed. Pop quizzes received negative comments from 12 students, but the instructors have not initiated any "corrective" action.

There are no specific requirements for summarizing student questionnaires. That process depends on the way you set up the student questionnaires and the resources available for analyzing the input. Some schools compute average responses on the student questionnaires; others use simple tallies to summarize responses. Some only count responses that indicate problems. Thus, on a 1 to 5 scale, with 5 being highly positive, a school could decide to count the responses at the 1 or 2 level only. This is certainly

faster than tallying each response, but you lose the chance to take a pat on the back if most of the responses are at the 4 or 5 level.

If you rely primarily on average responses, keep in mind the ambiguity of averages. Consider the following item: "The instructor explained the material clearly." Students are asked to indicate their level of agreement with the statement, ranging from 1 (disagree completely) to 5 (agree completely). Averaging the responses resulted in a rating of 3 (a neutral response), but tallying the responses showed that half the students marked this item "1" and half marked it "5." It's unlikely that you'll run into such an extreme case, but keep in mind that averages can mask significant differences within the class.

### **Instructor Input**

Instructor input may come from questionnaires, in which case you should tally the responses much the same way as you would from student questionnaires. Most schools use less formal mechanisms for instructor input. In the sample report, instructor input deals with timing. Other items that may surface from instructor input are the need to revise the content or structure of a lesson topic guide, to clarify some student materials, or recommendations to switch to a different student text. You need to report any problems instructors encountered with instructional materials, sequence of material, or student response to instruction.

### **Test Validity/Reliability**

This section usually focusses on high-miss items and their disposition. It may also be used to point out changes needed in the schedule for evaluating student performance.

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### **Review of Materials**

The after-instruction report focusses on the delivery of instruction, usually in a single segment of the course, and critiques of the delivery by students and instructors. The second part of in-house monitoring focusses specifically on materials used in the course as a whole. Are they current? Have changes in lesson topic guides (LTGs) created discrepancies in student handouts, test items, or practice materials? Are all materials consistent? Have changes in one part of the course created discrepancies with another part of the course? Can technology be used to provide more effective or efficient instruction?

### **Frequency and Documentation**

The key to in-house monitoring of training is that it is a continuous evolution. For long courses, complete an after-instruction report for each block of instruction (e.g., each unit or set of closely related units) within the course. For shorter courses presented several times a year, complete an after-instruction report for each iteration with an annual or semi-annual summary to detect trends across presentations. Keep the reports on file for at least two years. If filing space is a problem, consider keeping the files on computer disks.

As a rule of thumb, conduct a review of your course materials at least annually. For courses that run about a year, conduct the review at the end of each iteration. No reports are necessary unless significant problems are found.

Follow local policies for documenting completion of the reviews and tracking problem resolutions.

## **EXTERNAL TRAINING FEEDBACK**

The training command is responsible for obtaining feedback from recent graduates and/or their supervisors on a routine basis. In addition, BUMED may obtain feedback from sites where graduates are assigned. This feedback will be used to make ongoing adjustments to the program or course.

### **Surveys of Graduates and Their Supervisors**

Instructors should survey a sample of course graduates and/or their supervisors 3 to 6 months following graduation, to learn whether the training was adequate to the requirements of the job. The survey may be conducted by mail, electronic mail, telephone, or other interview.

Include questions such as the following:

1. What are the main duties of your job?
2. How well are you able to perform your job?
3. How well did the course prepare you for your job?
4. What portions of the instruction were relevant to your job?
5. What portions were irrelevant?
6. In your job, how often do you use the skills taught?
7. In your job, what tasks give you the most difficulty?
8. In your job, for which tasks do you feel least adequately prepared?
9. What parts of the instruction do you think could be changed to better prepare students for their job?

Similar questions about the graduate's performance can be asked of the supervisor. Use information from the survey to make adjustments to the instruction and to identify areas for curriculum revisions. Keep survey results on file for at least 2 years, as such documentation is often required in the accreditation process.

Although instructors may not be the most objective persons to conduct such follow-up surveys, they are the most knowledgeable. They know the details of the curriculum and the particulars of how it is presented in their program, and also know how individuals performed in training. Because they know the job and the job setting, they can relate to the job experiences of the graduates and supervisors. This background makes them uniquely qualified to interpret the feedback from graduates and apply it to course improvement.

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Telephone surveys have certain advantages over distributed surveys. Response time is shorter, frequency of response is greater, and the interviewer is able to ask follow-up questions and probe for greater detail in responses from graduates and supervisors. With increasing use of electronic transfer of information, surveys may be distributed and responses returned electronically.

### **Job Site Visits**

BUMED may sponsor visits by teams of headquarters and training site personnel to medical treatment facilities, marine and fleet installations, and other sites where graduates work, to interview graduates and their supervisors about the effectiveness of training. Information from these site visits is summarized and provided to the training program manager and the training sites as the basis of adjustments to curriculum and instruction.

### **Navy Training Feedback System**

The Navy Training Feedback System, governed by OPNAVINST 1500.71, provides a mechanism for reporting training deficiencies. Chief, Navy Education and Training (CNET) acts as the clearing house for reports, forwarding complaints to the appropriate command, tracking resolution, and forwarding a report on the final resolution to the originator.

## **MANDATORY PERIODIC REVIEWS**

Currently there are two programs that require comprehensive, periodic reviews of education and training programs in the Medical Department. The cyclical curriculum review process has been used in the Medical Department for approximately 10 years to evaluate and update enlisted "A" and "C" school training. The Navy Training Requirements Review (NTRR), mandated by the office of the Chief of Naval Operations, is required for all shore-based training. The NTRR process is a new requirement for the Medical Department. As of

May 1996, BUMED is still working on integrating the cyclical curriculum review and Navy Training Requirements Review processes.

### **Cyclical Curriculum Reviews**

The cyclical curriculum review process has been applied to all Medical Department enlisted education and training programs leading to the award of an NEC and to the Hospital Corps and Dental Technician basic (Class "A") education and training programs.

In each cycle of the cyclical curriculum review process, a complete review of each program is conducted. Training requirements, including accreditation or certification requirements, for the program as a whole are developed or reviewed and compared to the existing curriculum. A broad range of subject matter experts from outside the training community participate in the analysis phase and may be involved in part of the design phase. Cyclical curriculum reviews cover all aspects of the training program and include all phases of the curriculum development model.

### **CURRICULUM CHANGE PROCESS**

The curriculum change process is used to propose, review, and approve changes to an education and training program that do not change the resources required to conduct the training nor change the scope of the program as a whole. Such changes include:

1. Revisions to the objectives in one or two lesson topics.
2. Reallocation of contact hours.
3. Changes in student references.

The forms in this chapter should not be used if revisions will significantly change the scope of the course as a whole or significant segments of the course; or if additional resources will be required to implement the revisions without changing class loads. If changes will require additional resources or

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change the scope of the program as a whole, follow the procedures under “Planning” (starting on page 1-4) in the first chapter of this manual.

Please note that the formats shown in this section are not mandatory. Changes may be proposed in a letter, in point paper format, or using the formats shown in Figures 6-2 through 6-4.

### **Single-Site Programs**

For single-site programs, two forms are involved. The training site completes the Request for Curriculum Change, Single Site Program (Figure 6-2), and forwards it to the training program manager, with any supporting documents. No cover letter is required. The training program manager reviews the proposed change and returns it with the second form, Review/Approval of Proposed Change (Figure 6-5). Normally the training program manager completes the review within a week.

If a proposed change is submitted by letter or in point paper format, include the information listed below. The correspondence or the forms become part of the curriculum documentation and are kept with the curriculum outline.

The Request for Curriculum Change, Single-Site Program (Figure 6-2), is completed as follows:

1. From: The command requesting the change.
2. To: The training program manager for the course or program.
3. Course/Program: The title of the course or program to be changed.
4. Change #: A sequential identification of the proposed change, usually composed of a two digit year designator plus the number for the proposed change (e.g., 96-03 for the third change proposed in 1996).
5. Unit #(s): The unit(s) that will be affected by the change, referenced by number.
6. Lesson Topic #(s): The lesson topic(s) that will be affected by the change, referenced by number.

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7. Objective #(s): The objective(s) that will be affected by the change, referenced by number.

8. Proposed change: Statement of the proposed change written in from... to... format. The three areas shown (description, justification, and references supporting change) must be included.

9. Proposed by: The person on the training staff who will serve as the point of contact for any technical questions about the change.

10. DSN number and date: The DSN number where the point of contact can be reached and the date the proposal was submitted by the training site.

11. Reviewed by: The person responsible for educational review of the proposal; normally an instructional systems specialist. Leave this line blank if the training site does not have an instructional systems specialist available.

12. DSN number and date: The DSN number where the reviewer can be reached and the date that the proposal was signed (leave blank if "Reviewed by" is blank).

13. Endorsed by: The person responsible for command endorsement of the proposal; normally the academic director or department head. Please note that this block requires a "by direction" signature.

14. DSN number and date: The DSN number where the endorser can be reached and the date that the proposal was signed.

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**REQUEST FOR CURRICULUM CHANGE  
Single Site Program**

From: \_\_\_\_\_ (1) \_\_\_\_\_

To: \_\_\_\_\_ (2) \_\_\_\_\_

Course/Program: \_\_\_\_\_ (3) \_\_\_\_\_

Change # \_\_\_\_ (4) \_\_\_\_\_

Unit #(s)	Lesson Topic #(s)	Objective #(s)
____ (5) ____	_____ (6) _____	_____ (7) _____

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Proposed change (including description, justification and references supporting the change)

(8)

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Proposed by:	DSN: (10)
_____ (9) _____	Date:

Reviewed by:	DSN: (12)
_____ (11) _____	Date:

Endorsed by:	DSN: (14)
_____ (13) _____	Date:

By direction

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**Figure 6-2: Format for Requesting a Curriculum Change.  
Single Site Format.**

### Multiple-Site Programs

For multiple-site programs, three forms are involved. The training site that originates the proposal completes the Request for Curriculum Change, Multiple Site Program (Figure 6-3) and forwards it to the training program manager and all of the other training sites. The form may be addressed as if it were a multiple addressee letter, or separate originals may be generated for each associated training site.

The associated training sites review the proposal, complete the Review of Proposed Change (Figure 6-4), and forward both forms to the training program manager, with a copy to the originator. The review should be completed within a week of receiving the proposal; two weeks at the most.

The training program manager holds the Request for Curriculum Change from the command initiating the proposal until all of the associated sites have responded. He/she follows up on the proposal if responses are slow to arrive. The training program manager reviews the proposed change and the input from the associated training sites and issues the Review/Approval of Proposed Change (Figure 6-5). The original is sent to the command originating the proposal. A copy of the complete package is also sent to each associated training site. In most cases, the training program manager issues the Review/Approval within a week of receiving all of the reviews from the associated training sites. The proposal and review package becomes part of the curriculum documentation and is kept with the curriculum outline.

Questions about the proposed change should be discussed by telephone and resolved **before** submitting the package. If all of the associated training sites have agreed to the proposed change, document agreement on the request for Curriculum Change (e.g., by referencing telephone conversations) to facilitate rapid response by the training program manager, who issues the Review/ Approval document (see Figure 6-5).

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The Request for Curriculum Change, Multiple-Site Program (Figure 6-3), is completed as follows:

1. From: The command requesting the change.
2. To: The associated training site(s) and the training program manager.
3. Course/Program: The title of the course or program to be changed.
4. Change #: A sequential identification of the proposed change, usually composed of a two digit year designator plus the number for the proposed change (e.g., 96-03 for the third change proposed in 1996).
5. Unit #(s): The unit(s) that will be affected by the change, referenced by number.
6. Lesson Topic #(s): The lesson topic(s) that will be affected by the change, referenced by number.
7. Objective #(s): The objective(s) that will be affected by the change, referenced by number.
8. Proposed change: Statement of the proposed change written in from... to... format. The three areas shown (description, justification, and references supporting change) must be included.
9. Proposed by: The person on the training staff who will serve as the point of contact for any technical questions about the change.
10. DSN number and date: The DSN number where the point of contact can be reached and the date the proposal was submitted by the training site.
11. Reviewed by: The person responsible for educational review of the proposal; normally an instructional systems specialist. Leave blank if the training site does not have an instructional systems specialist available.
12. DSN number and date: The DSN number where the reviewer can be reached and the date that the proposal was signed (leave blank if "Reviewed by" is blank).
13. Endorsed by: The person responsible for command endorsement of the proposal; normally the academic director or department head. Please note that this block requires a "by direction" signature.

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14. DSN number and date: The DSN number where the endorser can be reached and the date that the proposal was signed.

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**REQUEST FOR CURRICULUM CHANGE  
Multiple Site Program**

From: \_\_\_\_\_ (1) \_\_\_\_\_

To: \_\_\_\_\_ (2) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Course/Program: \_\_\_\_\_ (3) \_\_\_\_\_

Change # \_\_\_\_ (4) \_\_\_\_\_

Unit #(s)	Lesson Topic #(s)	Objective #(s)
____ (5) ____	_____ (6) _____	_____ (7) _____

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Proposed change (including description, justification and references supporting the change)  
(8)

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Proposed by:	DSN: (10)
_____ (9) _____	Date:

Reviewed by:	DSN: (12)
_____ (11) _____	Date:

Endorsed by:	DSN: (14)
_____ (13) _____	Date:

By direction

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**Figure 6-3: Format for Requesting a Curriculum Change.  
Multiple Site Format.**

The Review of Proposed Change, Associated Training Site (Figure 6-4), is completed as follows:

1. From: Command completing form.
2. To: Training program manager.
3. Course/Program: The title of the course or program to be changed.
4. Change #: A sequential identification of the proposed change, usually composed of a two digit year designator plus the number for the proposed change (e.g., 96-03 for the third change proposed in 1996).
5. Unit #(s): The unit(s) that will be affected by the change, referenced by number.
6. Lesson Topic #(s): The lesson topic(s) that will be affected by the change, referenced by number.
7. Objective #(s): The objective(s) that will be affected by the change, referenced by number.
8. Concurrence: Reviewing training site marks the appropriate block. If the first square ("Concur") is marked, the remarks section may be left blank.
9. Remarks: Explanation of non-concurrence or description of modifications recommended by the reviewing training site.
10. Copy to: Training site originating the proposal and other associated training sites.
11. Technical review by: The person responsible for technical review of the proposal.
12. DSN number and date: The DSN number where the reviewer can be reached and the date that the proposal was signed.
13. Educational review by: The person responsible for educational review of the proposal; normally an instructional systems specialist. Leave blank if the training site does not have an instructional systems specialist available.

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14. DSN number and date: The DSN number where the reviewer can be reached and the date that the proposal was signed (leave blank if "Educational review by" is blank).

15. Endorsed by: The person responsible for command endorsement of the proposal; normally the academic director or department head. Please note that this block requires a "by direction" signature.

16. DSN number and date: The DSN number where the endorser can be reached and the date that the proposal was signed.

**REVIEW OF PROPOSED CHANGE  
Associated Training Sites**

From: \_\_\_\_\_ (1) \_\_\_\_\_

To: \_\_\_\_\_ (2) \_\_\_\_\_

Course/Program: \_\_\_\_\_ (3) \_\_\_\_\_

Change # \_\_\_\_ (4) \_\_\_\_\_

Unit #(s)	Lesson Topic #(s)	Objective #(s)
____ (5) ____	_____ (6) _____	_____ (7) _____

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(8)	Concur as	Do not concur
Concur: ____	modified below _____	(explain below) ____

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Remarks:

(9)

Copy to: (10)

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Technical review by:	DSN: (12)
_____ (11) _____	Date:

Educational Review by:	DSN: (14)
_____ (13) _____	Date:

Endorsed by:	DSN: (16)
_____ (15) _____	Date:

By direction

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**Figure 6-4: Format for Reviewing a Curriculum Change.  
Associated Training Sites.**



## MULTIPLE TRAINING SITE STANDARDIZATION

### Requirements for Standardization

The following elements of any program or course taught at two or more sites must be identical:

1. Unit and lesson topic titles.
2. Terminal and enabling objectives.
3. Didactic, laboratory/practical, and clinical contact hours assigned to each lesson topic.
4. Student references (i.e., training materials for which students are held directly responsible; the references cited in the learning objectives).
5. Student Evaluation Plan.

Minor variations are allowed in scheduling and in evaluation tools as noted below:

1. Scheduling. Lessons within one unit may not be shifted to another unit nor may material in one lesson be shifted to another. Within these limitations, schedules may be adjusted to allow the most efficient use of facilities, equipment, and instructors as long as dependent relationships within the curriculum are not compromised.
2. Performance checklists. Performance checklists will be identical at all sites, except where variation is required by equipment differences. Equipment used at different sites must be functionally identical with the same level of complexity, but does not have to be the same brand and model.
3. Written tests. Written tests must be equivalent but need not be identical. Written tests must cover the same span of material, include the same blend of types of test items, and be equal in terms of complexity and difficulty. Where feasible, a single test item bank will be used by all sites.
4. Lesson Topic Guides. Lesson topic guides must reflect the same essential information, but do not have to be identical. **Exception:** Lesson topic

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guides for Hospital Corps School are identical except for instructor personalization.

Provided that the above requirements are not compromised, differences may occur at the various sites in the following:

1. Instructor and student activities.
2. Guest lecturers.
3. Homework assignments.
4. Instructor reference materials.
5. Supplementary materials (e.g., audiovisuals or instructor-developed student handouts used for enhancement, Learning Resource Center acquisitions).
6. Materials used for remediation.

### **Multiple Training Site Conferences**

Multiple training site (MTS) conferences are scheduled for all enlisted formal school programs (Class "A" and "C" schools) conducted at more than one training command. For most such programs, conferences are held annually, rotating the meeting site among the commands conducting the program.

Each training command must budget for their representatives (normally one or two members of the training staff and the instructional systems specialist that works with the training program) to attend the meeting.

The training command hosting the MTS meeting is responsible for the following:

1. Establishing the dates of the conference.
2. Soliciting agenda items from all associated training sites and the training program manager.
3. Providing copies of the tentative agenda and any documents that will be reviewed during the conference.
4. Providing a meeting room.

5. Providing a recorder to take minutes of the proceedings (review draft minutes of the previous days' proceedings each morning).

6. Completing the conference report and submitting it to the training program manager and all associated training commands.

Please note that the conference report is not the same as a compilation of the minutes. Minutes convey the process of the conference and include the major points during discussions as well as the outcome of the discussions. These may be appended to the conference report, but should not be substituted for the report itself. Aim for a one- to two-page report that clearly states the outcome of the conference.

Establish completion dates for any taskings generated during the conference. After the conference, the training program manager monitors completion of the taskings.