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F-16 IMPLEMENTATION AND MANAGEMENT. PLAN REPORT.(U)
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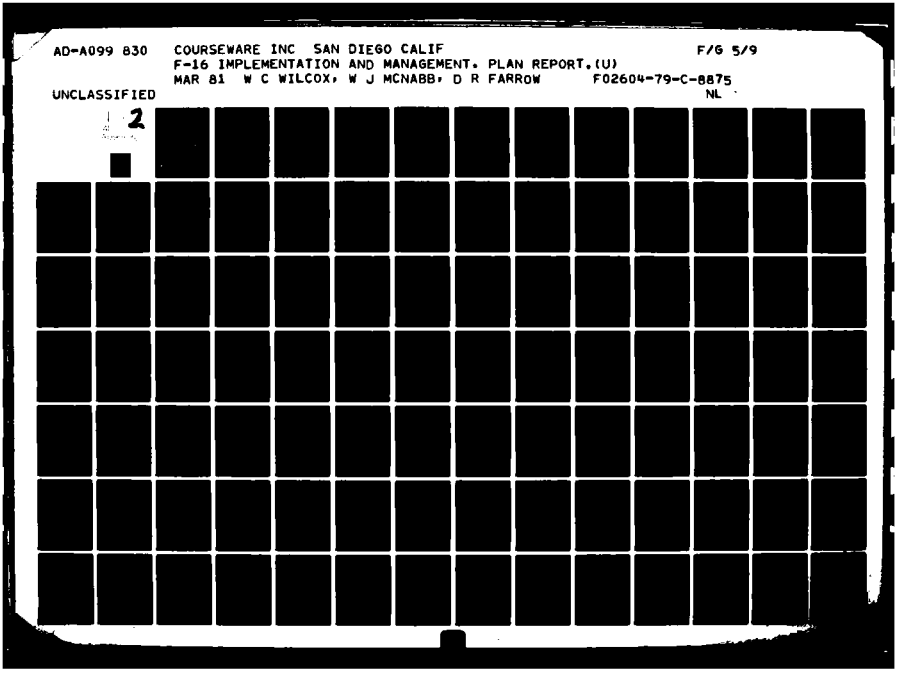

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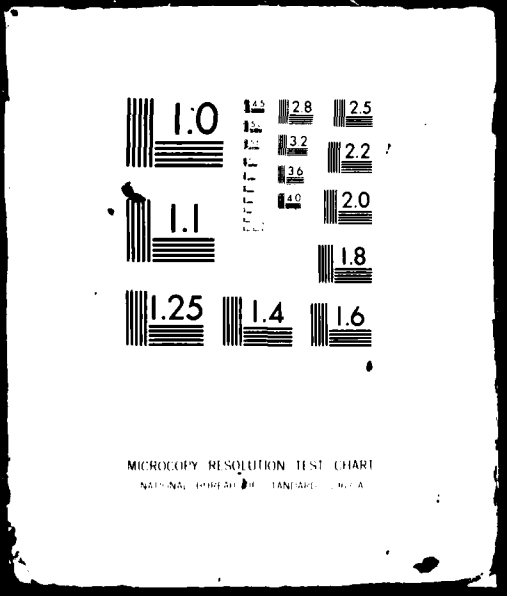

F-16 AIRCREW TRAINING DEVELOPMENT PROJECT

Contract No. F02604-79-C8875

F-16 IMPLEMENTATION AND MANAGEMENT PLAN REPORT

DEVELOPMENT REPORT No. 18

MARCH 1981

Prepared in fulfillment of CDRL nos. B028, B029, B030, B033, B050, B057, B059

by

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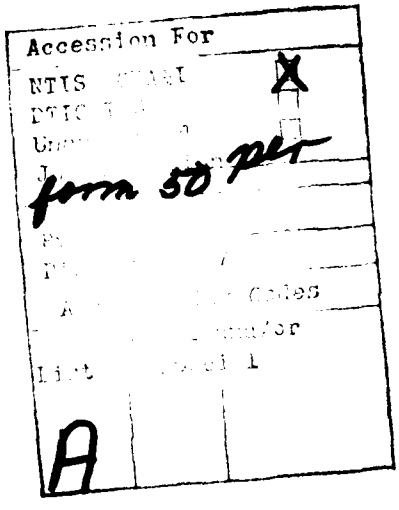
PREFACE

This report was created for the F-16 Aircrew Training Development Project contract no. F02604-79-C8875 for the Tactical Air Command to comply with the requirements of CDRL nos. B028, B029, B030, B033, B050, B057, and B059. The project entailed the design and development of an instructional system for the F-16 RTU and instructor pilots. During the course of the project, a series of development reports was issued describing processes and products. A list of those reports follows this page. The user is referred to Report No. 34, A Users Guide to the F-16 Training Development Reports, for an overview and explanation of the series, and Report No. 35, F-16 Final Report, for an overview of the Instructional System Development Project.



F-16 AIRCREW TRAINING DEVELOPMENT PROJECT REPORTS

Copies of these reports may be obtained by writing the Defense Technical Information Center, Cameron Station, Alexandria, Virginia 22314. All reports were reviewed and updated in March 81.

Gibbons, A.S., Rolnick, S.J., Mudrick, D. & Farrow, D.R. Program work plan (F-16 Development Report No. 1). San Diego, Calif.: Courseware, Inc., September 1977, March 1981.

Thompson, A., Bath, W., & Gibbons, A.S., Previous ISD program review (F-16 Development Report No. 2). San Diego, Calif.: Courseware, Inc., September 1977, March 1981.

Wild, M., & Farrow, D.R. Data collection and management forms report (F-16 Development Report No. 3). San Diego, Calif.: Courseware, Inc., September 1977, March 1981.

Gibbons, A.S. Review of existing F-16 task analysis (F-16 Development Report No. 4). San Diego, Calif.: Courseware, Inc., June 1977, March 1981.

Gibbons, A.S., & Rolnick, S.J. Derivation, formatting, and use of criterion-referenced objectives (CROs) and criterion-referenced tests (CRTs) (F-16 Development Report No. 5). San Diego, Calif.: Courseware, Inc., September 1977, March 1981.

Rolnick, S.J., Mudrick, D., Gibbons, A.S. & Clark, J. F-16 task analysis, criterion-referenced objective, and objectives hierarchy report (F-16 Development Report No. 6). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Gibbons, A.S. Task analysis methodology report (F-16 Development Report No. 7). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Gibbons, A.S. Objectives hierarchy analysis methodology report (F-16 Development Report No. 8). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Mudrick, D., Gibbons, A.S., & Schmidt, R.F. Goal analysis report (F-16 Development Report No. 9). San Diego, Calif.: Courseware, Inc., February 1978, March 1981.

Rolnick, S.J., Mudrick, D., & Thompson, E.A. Data base update procedures report (F-16 Development Report No. 10). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Mudrick, D., & Pyrz, K.E. Data automation of task and goal analysis: Existing system review and recommendation (F-16 Development Report No. 11). San Diego, Calif.: Courseware, Inc., September 1977, March 1981.

O'Neal, A.F., & Smith, L.H. Management System needs and design concept analysis (F-16 Development Report No. 12). San Diego, Calif.: Courseware, Inc., December 1977, March 1981.

Gibbons, A.S., Thompson, E.A., Schmidt, R.F., & Rolnick, S.J. F-16 pilot and instructor pilot target population study (F-16 Development Report No. 13). San Diego, Calif.: Courseware, Inc., September 1977, March 1981.

Schmidt, R.F., Gibbons, A.S., Jacobs, R. & Faust, G.W. Recommendations for the F-16 performance measurement system (F-16 Development Report No. 14). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Thompson, E.A., & Gibbons, A.S. Program/system constraints analysis report (F-16 Development Report No. 15). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Gibbons, A.S., & Rolnick, S.J. A study of media production and reproduction options for the F-16 project (F-16 Development Report No. 16). San Diego, Calif.: Courseware, Inc., February 1978, March 1981.

O'Neal, A.F., & Kearsley, G.P. Computer managed instruction for the F-16 training program (F-16 Development Report No. 17). San Diego, Calif.: Courseware, Inc., July 1978, March 1981.

Wilcox, W.C., McNabb, W.J., & Farrow, D.R. F-16 implementation and management plan report (F-16 Development Report No. 18). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Sudweeks, R.R., Rolnick, S.J., & Gibbons, A.S. Quality control plans, procedures, and rationale for the F-16 pilot training system (F-16 Development Report No. 19). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Gibbons, A.S., Axtell, R.H., & Hughes, J.A. F-16 media selection and utilization plan report (F-16 Development Report No. 20). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Thompson, E.A., Kearsley, G.P., Gibbons, A.S., & King, K. F-16 instructional system cost study report (F-16 Development Report No. 21). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Jacobs, R.S., & Gibbons, A.S. Recommendations for F-16 operational flight trainer (OFT) design improvements (F-16 Development Report No. 22). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Gibbons, A.S. F-16 instructional sequencing plan report (F-16 Development Report No. 23). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

Farrow, D.R., & King, K. F-16 coursewares and syllabi delivery schedule (F-16 Development Report No. 24). San Diego, Calif.: Courseware, Inc., September 1979, March 1981.

Rothstein, L.J., Hibian, J.E., & Mudrick, D. F-16 instructor/course manager training requirements report (F-16 Development Report No. 25). San Diego, Calif.: Courseware, Inc., October 1978, March 1981.

O'Neal, A.F., & O'Neal, H.L. F-16 pilot media selection (F-16 Development Report No. 26). San Diego, Calif.: Courseware, Inc., March 1979, March 1981.

Gibbons, A.S. F-16 instructional system design alternatives (F-16 Development Report No. 27). San Diego, Calif.: Courseware, Inc., September 1979, March 1981.

Gibbons, A.S. F-16 instructional system basing concept (F-16 Development Report No. 28). San Diego, Calif.: Courseware, Inc., September 1979, March 1981.

O'Neal, H.L., & Rothstein, L.J. Task listings and criterion-referenced objectives for the instructor pilot F-16 training program (F-16 Development Report No. 29). San Diego, Calif.: Courseware, Inc., September 1979, March 1981.

Bergman, D.W., & Farrow, D.R. F-16 training system media report (F-16 Development Report No. 30). San Diego, Calif.: Courseware, Inc., September 1979, March 1981.

Gibbons, A.S., O'Neal, A.F., Farrow, D.R., Axtell, R.H., & Hughes, J.A. F-16 training media mix (F-16 Development Report No. 31). San Diego, Calif.: Courseware, Inc. October, 1979, March 1981.

Farrow, D.R. F-16 training media support requirements (F-16 Development Report No. 32). San Diego, Calif.: Courseware, Inc., September 1979, March 1981.

Gibbons, A.S. F-16 training media constraints and limitations (F-16 Development Report No. 33). San Diego, Calif.: Courseware, Inc., September 1979, March 1981.

Farrow, D.R., & Kearsley, G.P. A user's guide to the F-16 training development reports (F-16 Development Report No. 34). San Diego, Calif.: Courseware, Inc., January 1981, March 1981.

Farrow, D.R., & Clark, J. F-16 Final Report (F-16 Development Report No. 35). San Diego, Calif.: Courseware, Inc., January 1981, March 1981.

CONTENTS

CONTENTS (Cont.)

F-16 IMPLEMENTATION AND MANAGEMENT PLAN REPORT

1.0 INTRODUCTION

A training system is an assemblage of instructional activities, materials, equipment, and training devices intended to produce specified learning outcomes in the target population of students. To be complete, such a system must include specific plans and procedures for using the various course components in a coordinated and integrated manner.

This report presents plans and procedures for implementing, using, and maintaining the F-16 pilot training system. It is written primarily for the use of Air Force personnel who have the responsibility of installing and administering the F-16 training system. The report is intended to accomplish a threefold purpose: (1) to describe the F-16 pilot training system and the administrative context in which it is designed to function, (2) to recommend specific policies and procedures for implementing and operating the F-16 training system, and (3) to coordinate and tie together all of the plans and documents produced during the development of the training into a single, orchestrated system. If the system is managed without this comprehensive plan it is not likely to be operated in the most effective and efficient manner.

1.1 Overview of Content

This document is a job aid for the F-16 training system's managers and operators. Section 1.0 provides an overview of the system. Section 2.0 describes the responsibilities of organizations involved in the system. Section 3.0 describes the functions necessary for implementing, using, and maintaining the system. Section 4.0 lists the major pieces of equipment required by the system other than simulators and aircraft. Section 5.0 presents the forms used in the system. Section 6.0 discusses the criteria of a good management subsystem for a training system.

1.2 Overview of System

This section describes the purpose and scope of the F-16 pilot training system and its various courses, the general plans for installing and maintaining the system, and the basic course's content.

1.2.1 Purpose of the system

The goal of the F-16 training system is to train mission-ready pilots and instructor pilots for the F-16 multirole combat fighter. To achieve this goal, several allied subgoals must be accomplished. Provisions for these subgoals are built into the system design. Accordingly, the system includes procedures for revising and maintaining the instructional materials, for training system personnel, for updating the system data base, and for administering and conducting instruction.

1.2.2 Description of courses

The F-16 pilot training system will include a replacement training unit (RTU) course in three different versions plus a continuation training course. The RTU course will be designed to train pilots to operate the F-16 aircraft and weapon system at a basic level of combat readiness. The continuation training course will provide the RTU graduates with additional training and experience as a means of improving their skills and judgment. The three versions of the RTU course are designed for three different categories of pilots. The course designations and target populations are described in Table 1.

Table 1--Course designations and target populations for the three different versions of the F-16 RTU course.

Course Name And Designation	Target Population
Basic (B)	Airmen assigned to become F-16 pilots who have just completed undergraduate pilot training (UPT) and fighter lead-in training (FLIT).
Transition (TXX)	Pilots transitioning to the F-16 after acquiring mission readiness skills in other fighters.
Instructor Pilot (IXO)	Experienced fighter pilots who are upgrading to become F-16 IPs.

The plans in this report refer to the RTU courses only. Details of syllabi and management plans for the continuation training course will be formulated during Project Phase VII (FY 81). During that year an implementation and management plan will be formalized either as an addition to this report or as a separate document. The first classes to use the F-16 pilot training system will arrive at Hill AFB, Utah, commencing in March 1980. Eventually, the training system will be utilized at various other sites under the administration of selected training wings and squadrons. Since the context in which the system will be implemented is likely to vary somewhat from site to site, the policies and procedures recommended here may need to be adapted in accordance with local conditions and constraints. Such modifications should be implemented after consultation with the F-16 Operations Training Development (OTD) team who have the responsibility of overseeing and coordinating the installation of the system at the various training sites. Additional plans and schedules for implementation at specific sites will be provided as the locations of these sites are announced.

1.2.3 System development, implementation, and maintenance

The training system is being developed for the Tactical Air Command (TAC) by the F-16 Aircrew Training Development Project, a cooperative venture involving (1) an Air Force OTD team, OLAG of the 4444th Operations Squadron (Ops Sq); (2) Courseware Inc., the training development prime contractor; and (3) Hughes Aircraft Company, the training development subcontractor. The OTD team is responsible for supplying expertise in the subject matter content and practical experience in Air Force training. The contractor and subcontractor are responsible for supplying the technical expertise in instructional systems development.

The training system is intended to be a dynamic system that can be periodically revised and updated. System operating procedures and instructional components should be regularly updated as changes in the procedures for operating the aircraft and weapons system are implemented by the Air Force. The instruction should be revised as instructional inadequacies and deficiencies are identified through use of the quality control subsystem. The F-16 OTD team will have the responsibility of maintaining the system by introducing updates and revisions as necessary.

After the courses are developed, the contractor will continue to work with the OTD team to assist in installing, operating, and evaluating the system. Eventually, however, all contractor duties will be assigned to the OTD team. Consequently, the procedures described in this report are worded so that they do not involve employees of the contractor.

The degree of implementation and the operational functioning of the RTU courses at Hill Air Force Base will be closely monitored by means of the operational monitoring procedures described in this report. The results of this evaluation should help to identify any problems in the way the courses are conducted and should yield insights about the operation of the program that will be helpful in installing the courses at other sites.

Proper scheduling and follow through are important functions which must be attended to by individuals responsible for installing the system at subsequent sites. The installation tasks include procuring sufficient materials and training devices, organizing and equipping a learning center, plus selecting, training, and relocating qualified instructors and support personnel. These tasks should be accomplished well in advance of the targeted startup date.

The complete Air Force schedule for installing the courses at other training sites is not presently known by the authors, but it is assumed that the number of sites will be increased gradually depending on the availability of aircraft. The number of students in the first few classes at each training site will be somewhat limited at first, but is also expected to increase gradually as more and more aircraft become available.

The quality control subsystem should be employed at each training site throughout the duration of the training system's life cycle. The purpose of the quality control procedures is to improve the functioning of the training system by systematically diagnosing and correcting flaws in the training system as it is implemented at each site.

Present Air Force procurement plans and policies may not allow for all of the recommended features of the training system to be implemented initially. Expansion of the training system to accommodate recommendations not feasible at the outset should be planned for in later versions of the system as resources and personnel become available.

1.2.4 Basic (B) course content

The F1600B Course is 109 training days in duration, including 18 ground training days and 91 flying training days. The ground training consists of 35 hours of workbook, 3 hours of workbook-slide, 8.2 hours of audio-slide, 37.5 hours of specialized training, 89.5 hours of seminars, and 32.5 hours of device session instruction. The flying training consists of 60 sorties lasting a total of 80.5 hours.

2.0 RESPONSIBILITIES

This section of the report describes the responsibilities of the Tactical Air Command (TAC), the Operations Training and Development (OTD) team, Stan/Eval, a wing, a tactical flight training squadron (TFTS), and a maintenance squadron with reference to the F-16 training system.

2.1 TAC

TAC has the overall responsibility for F-16 training and operation. Of course, much of that responsibility is delegated to lower levels in the organization although TAC still is involved in long-range planning and high-level decision making.

2.2 OTD Team

The OTD Team is responsible for installing and revising the F-16 training system at all training sites and for maintaining the training system data base (task listing, criterion-referenced objectives, objectives hierarchies, target population characteristics, media selection, course syllabus, and management report).

In order to accomplish these responsibilities, it is suggested that the team consist of at least eight men, and that each member of the team be assigned to one of the roles shown in Table 2. It also is recommended that the OTD team roles be sequenced in such a way that newly appointed members of the team receive assignments which require little technical and system procedural knowledge. As a new member gains experience in his assignment, he will become familiar with both systems and instructional development procedures. Subsequent team appointees can then assume his duties as he moves up to fill a more demanding responsibility created by another team member's leaving.

OTD team members should be familiar with instructional systems development. They also should not be overloaded with squadron or higher command duties. If OTD team members were unprepared or unavailable, the quality of the F-16 training system would suffer.

TABLE 2

PROPOSED ROLES AND DUTIES OF OTD TEAM MEMBERS

Role	Duties
I. OTD Team Chief	1. Trains the OTD team members in their respective duties. 2. Oversees the activities of all OTD team members. 3. Serves as a liaison between the OTD team and the commanders of the training wings and between the OTD team and the 4444th Ops Sq.
II. Reviewer	1. Reviews and, if necessary, modifies the rough draft revisions developed by other team members. 2. Substitutes for the team chief in his absence. 3. Maintains the OTD team's data base documents. 4. Coordinates the activation of the course at new training sites.
III. System Specialist (see paragraph 3.6.1.2)	1. Develops rough draft instructional and managerial revisions to course materials based on the course critique, suggestion, and interview data. 2. Develops rough draft changes to lesson materials based on lesson critique data (temporary).

Role	Duties
IV. Task Specialist (see paragraph 3.6.1.1.2)	1. Performs the task item analysis. 2. Summarizes the comments pertaining to "suspicious" task items. 3. Develops rough draft instructional and managerial revisions to course materials based on the comment summaries. 4. Notifies Chiefs of Academics and squadron operations officers of the "suspicious" task items.
V. Test Specialist (see paragraph 3.6.1.1.1)	1. Performs the test item analysis. 2. Performs the discrimination analysis. 3. Summarizes the responses made to "suspicious" test items. 4. Develops rough draft changes to "suspicious" test items based on the response summaries. 5. Develops rough draft instructional revisions to other course materials based on the response summaries.

Role		Duties	
VI.	External Factors Specialist (see paragraph 3.6.1.3)	1.	Monitors external factors that influence the training system such as Air Force directives, Air Force publications, training resources, and the number and characteristics of incoming students.
		2.	Develops rough draft instructions and managerial revisions to course materials based on changes to external factors.
VII.	Implementation Manager (see paragraph 3.6.2)	1.	Implements approved rough draft revisions.
VIII.	Generalist	1.	Assists other members of the OTD team as required to supplement manpower shortages caused by short-term work surges or TDY assignments, etc.
		2.	Assures that all printed training materials conform to accepted editorial standards.

2.3 Stan/Eval

Stan/Eval personnel will:

1. Administer an open-closed book examination (ST 110) to each student IAW TACR 60-2, Chapter 5.

2. Conduct an emergency procedures/systems operation evaluation (CFT 106) of each student IAW TACR 60-2, Chapter 4.

3. Conduct a combined instrument and initial qualification evaluation (TR 6) of each student IAW TACR 60-2, Chapter 4.

2.4 Wing

A wing that trains F-16 pilots supplies the resources necessary for that training. These include facilities, equipment, and personnel. Each wing commander should direct the:

1. Preparation of budgets, forecasts, and long-range schedules for F-16 training in his wing.

2. Acquisition of material and personnel resources for F-16 training in his wing.

3. Preparation of his wing's F-16 training course fitness reports.

4. Coordination of his wing's F-16 training resources.

Each wing with F-16 training should appoint an ISD monitor to serve as a liaison between the wing's training units and the OTD team IAW TACR 50-1, paragraph 8. This monitor is responsible for:

1. Monitoring the usage and status of the equipment, course materials, and supplies.

2. Completing and submitting evaluation reports at prescribed intervals.

3. Submitting recommendations for improving the training system to TAC HQ from where they will be forwarded to the OTD team.

4. Otherwise assisting the OTD team as necessary if tasked by the appropriate authority.

2.5 Tactical Flight Training Squadron (TFTS)

An F-16 TFTS is responsible for the academic and hands-on training of its students.

2.5.1 Academic training

A chief of academics is in charge of the academic training in an F-16 TFTS. The responsibilities of a chief of academics include:

1. Manage the setup and maintenance of his TFTS's learning center, classrooms, and training equipment other than aircraft and simulators.

2. Supervise, train, and evaluate his TFTS's academic instructor pilots and learning center operators.

3. Schedule his TFTS's academic events and device sessions without grade slips.

4. Counsel students in his TFTS.

The major duties of an academic instructor pilot (AIP) are:

1. Conduct seminars, make-up seminars, Mission Planning Exercises, make-up Mission Planning Exercises, device sessions, and make-up device sessions.

2. Administer exams.

3. Provide remedial help to students.

4. Fly training sorties.

5. Use the following forms:

FORM	ACTIVITIES	
Remediation Form	Prepare	Sign
Seminar Attendance Form	Prepare	Complete
Instructor Checkout Log	Update	
Charge Out Record	Update	

The major duties of a learning center operator (LCO) are:

1. Maintain a TFTS's learning center and classrooms.

2. Maintain a TFTS's training equipment other than aircraft and simulators.

3. Maintain the course syllabi, study materials, instructor and device session guides, tests, and forms kept in a TFTS's learning center.

4. Issue study materials.

5. Check study materials in and out.

6. Administer quizzes, alternate exams, and make-up exams.

7. Score tests.

8. Manage the following forms:

FORM	ACTIVITIES			
Class Ready List	Prepare	Update	Store	Dispose
Academic Record	Prepare	Update	Store	Dispose
Remediation Form	--	--	Store	Dispose
Seminar Attendance Roster	Overprint	--	Store	Dispose
Class Academic Record	Prepare	Update	--	Dispose
Student Checkout Log	Prepare	Update	Store	Dispose
Instructor Checkout Log	Supply	--	Store	Dispose
Charge Out Record	Supply	Update	Store	Dispose
Study Materials Issue Form	Prepare	Update	Store	Dispose
Exam Ready List	Post	Update	--	Dispose
Lesson Critique Form	Distribute	Collect	Store	Dispose
Course Critiques	Distribute	Collect	Store	Dispose
Suggestion Form	--	--	Store	Dispose

2.5.2 Hands-on training

A squadron commander directs the hands-on training in an F-16 TFTS. This responsibility entails supervising the training, activities, and evaluation of flightline instructor pilots and squadron schedulers. Flightline instructor pilots conduct device sessions and make-up device sessions, and fly training sorties. Squadron schedulers schedule these hands-on events.

2.6 Maintenance Squadron

A maintenance squadron is responsible for maintaining a TFTS's simulators and aircraft.

3.0 COURSE FUNCTIONS

There will be six major course functions: logistics, personnel administration, schedule of instruction, student training and measurement, system centered measurement, and revision.

3.1 Logistics

There will be two logistics functions, setup and maintenance.

3.1.1 Setup

Each F-16 training unit will set up facilities, training equipment, and course materials.

3.1.1.1 Facilities

In addition to the regular squadron facilities, each F-16 training unit will need a Learning Center (LC), classrooms, offices for the Chief of Academics and his academic instructor pilots (AIPs), and rooms to house simulators and their operators.

3.1.1.1.1 Learning Center

The suggested components of a LC are as follows:

1. Study carrels. There should be enough study carrels to accommodate half of the base's RTU students at one time. All the carrels should have electrical outlets and movable chairs.

2. Conference rooms. Two small rooms in which AIPs can meet with students should adjoin the LC study area. Each of these rooms should have a blackboard, a table, and at least four chairs.

3. Secure study area. A portion of the LC study area should be designed so that classified materials may be examined in it.

4. Storage area. Shelves, filing cabinets that lock, a classified materials safe, and two desks for learning center operators (LCOs) should be located in a room or isolated area adjoining the LC study area. The shelves should be able to hold all the spare audio-visual equipment and parts

(paragraph 3.1.1.2), the audio-visual materials and their masters (paragraph 3.1.1.3.2), the study materials that are issued to students (paragraph 3.1.1.3.2), instructor guides (paragraph 3.1.1.3.3), copies of the course syllabus (paragraph 3.1.1.3.1), and publications pertaining to the F-16 and flying (paragraph 3.1.1.3.2). There should be at least four five-drawer filing cabinets that can be locked. The suggested contents of each are as follows:

Cabinet	Contents
Unused Tests	Scoring Key File, masters and unused copies of quizzes and exams.
Scored Tests	Scored Quiz File and Scored Exam File.
Blank Forms	Masters and unused copies of student training and measurement forms that belong in the LC. Master of course syllabus.
Used Forms	Study Materials Issue File, Student Academic File, Seminar Attendance File, Class Ready List File, Lesson Critique File, Suggestion File.

One of the storage area desks will be the LC issue desk where transactions between LCOs and students or instructors will take place. The other desk will be used to repair equipment, score exams, write reports, etc.

5. Testing area. A quarter of the study carrels should be visible from the issue desk so that a LCO can monitor students taking tests in them.

3.1.1.1.2 Classrooms

There should be a classroom for every twelve students in the course. Each should have a blackboard, at least nine 72-inch long tables, at least eighteen seats, a powered projection stand bolted to the floor, and a projection screen.

3.1.1.1.3 Offices

The Chief of Academics should have his own desk and office. Each of the AIPs should at least have his own desk.

3.1.1.1.4 Simulator facilities

Each simulator should be in a separate room to reduce distractions. Rooms containing large simulators, such as the Advanced Simulator for Pilot Training, will need to be specially designed.

3.1.1.2 Training equipment

Besides the aircraft and simulators, there will be training equipment in the LC and in each classroom.

3.1.1.2.1 LC training equipment

At least half of the LC study carrels should have slide-tape projectors. At least an eighth of the carrels should have videotape players and monitors. A carrel that has a slide-tape projector usually should not have a videotape player and monitor. None of the carrels in the testing area should have training equipment. A spare slide-tape projector, videotape player and monitor, slide projector, overhead projector, and 16mm movie projector should be stored in the LC storage area along with a supply of replacement parts for them (e.g., bulbs). Also, one transportable opaque projector and its spare parts should be kept in the LC storage area.

3.1.1.2.2 Classroom training equipment

Each classroom should have a videotape player and monitor, slide projector, overhead projector, and 16mm movie projector.

3.1.1.3 Course materials

The course materials will consist of the TAC Syllabus-Course F1600B, study materials, instructor guides, tests, and forms.

3.1.1.3.1 TAC Syllabus-Course F1600B

A TAC Syllabus-Course F1600B will be issued to each student during his orientation briefing, ST 102. It contains a summary inventory of hours dedicated to each type and phase of training, a brief discussion of course management procedures, a course map and management flowchart laying out the structure and sequence of the course, and a brief description of each lesson, training device session, and training sortie. This provides the student and instructor with a clear perspective on the training program, at least at the general level.

3.1.1.3.2 Study materials

There will be two types of study materials, those issued to students and those available on a checkout basis from the LC. Those issued to students will include:

Phase manuals that contain procedures and techniques for flying the F-16.

Workbooks that contain objectives, core content, elaboration and, in most cases, practice items, and sometimes are accompanied by quizzes and/or slides that are checked in and out.

Student handouts for certain seminars and specialized training sessions that contain objectives, core content, and/or references.

Air Force publications: -1, -30, -34, Pilot's Aid, checklists, TACR 55-16, local chapter 8 to TACR 55-16.

The study materials that students can check in and out of the LC will include:

Color slides that accompany audiotapes and certain workbooks.

Audiotapes that accompany certain color slides and have inaudible signals that automatically advance them.

Videotapes

Classified materials

Publications: Books and periodical articles identified by instructor pilots, and Air Force publications such as the -1, checklists, and TACR 55-16.

3.1.1.3.3 Instructor guides

Instructor guides for seminars and device sessions will be issued to an instructor pilot during his orientation and extra copies of them will be available in the LC. An instructor guide for a seminar contains objectives, prior-to-class requirements, an instructor strategy, a content outline, any student handouts, review questions, and in some cases, an envelope with overhead transparencies. An instructor guide for a device session contains a mission description, a list of needed materials, and a mission brief.

3.1.1.3.4 Tests

There will be two kinds of academic tests, quizzes and examinations. A lesson typically will be followed by a quiz consisting of three to twelve items. There will be five two-hour examinations. They are ST 110 (Conversion), SM 204 (Intercept), SM 407 (Air-to-air), SM 510 (Radar/NAV/NUC), and SM 607 (BAM/SA/SAN). The course syllabus specifies the lessons that will be covered by each exam.

3.1.1.3.5 Forms

The course management forms are described in Section 5.0.

3.1.2 Maintenance

Once the course is up and running, care must be taken to maintain the facilities, equipment, and course materials in operating condition. Because facility maintenance procedures are standardized and because the LC and its contents are the only features unique to this training system, this discussion only focuses on the maintenance of LC equipment and course materials.

3.1.2.1 LC equipment

LCOs will be responsible for the maintenance of audio-visual equipment installed in the carrels (slide projectors and slide-tape players), stored in the classrooms (film projectors, overhead projectors, video-tape players), and stored as spares in the LC. This will include scheduled maintenance (cleaning, oiling, inspecting) and minor unscheduled maintenance (replacing bulbs, repairing wiring, replacing connectors). When a malfunctioning unit cannot be quickly diagnosed and repaired in place, it will be taken to the equipment storage and repair area and replaced with a functioning spare. The disabled unit then will be repaired by a LCO during his spare time or sent out to be repaired. The LCOs also will be responsible for maintaining records on the audio-visual equipment such as a check-out log and a record of maintenance and use for each unit. These documents will be reviewed periodically to produce equipment utilization reports.

3.1.2.2 Course materials

LCOs will be responsible for periodically inventorying, inspecting, and replacing LC course materials. LC course materials will be replaced if they are missing, damaged, or need revisions as specified by the OTD team via chiefs of academics.

3.2 Personnel Administration

Standard Air Force check-in procedures will be used. The students' orientation will occur in the course overview specialized training session (ST 102). Chiefs of academics or AIPs designated by them will tutor newly assigned AIPs in their academic duties and escort them on tours of training facilities. TFTS commanders or instructor pilots designated by them will tutor newly assigned instructor pilots, including AIPs, in their hands-on duties. Chiefs of academics or LCOs designated by them will tutor newly assigned LCOs in their duties. Sections 3.0 and 5.0 of this report may be helpful job aids for AIPs and LCOs.

The supervision and evaluation of instructor pilots and LCOs will be IAW Air Force regulations such as AFR 53-15, AFR 35-13, and TACR 60-2. The Seminar Observation Form (paragraph 5.1) may be used to evaluate the classroom performance of AIPs.

3.3 Schedule of Instruction

A chief of academics or someone appointed to represent him and one or more squadron schedulers will meet together once a week to coordinate their planning.

3.3.1 Chief of academics

A chief of academics will be responsible for 1) scheduling academic events (seminars, make-up seminars, Mission Planning Exercises, make-up Mission Planning Exercises, exams, and make-up exams), device sessions without grade slips, and make-up device sessions without grade slips and 2) establishing lesson deadline dates for his training unit. More specifically, he will:

1. Supervise the weekly preparation of an Academic Events Calendar. A copy of each week's Academic Events Calendar will be sent to the squadron schedulers and posted in the LC. An Academic Events Calendar 1) lists the identifier, location, instructor in charge, and time of each academic event, device session without a grade slip, and make-up device session without a grade slip scheduled to occur during the coming week and 2) identifies the lessons not requiring instructors that will be due during the coming week.

2. Annotate the posted Academic Events Calendar to reflect schedule alterations and notify the squadron schedulers of them.

3. Make sure that a LCO updates all the Class Ready Lists and sends copies of them to the squadron schedulers once each day. A Class Ready List indicates which students in a class have successfully completed all the academic events and device sessions without grade slips that are prerequisite to a device session with a grade slip or to a sortie.

3.3.2 Squadron schedulers

Squadron schedulers will be responsible for scheduling 1) device sessions with grade slips and 2) sorties. Most of this scheduling will be daily and will take into consideration such things as weather, equipment, fuel supply, the most recent copy of the weekly Academic Events Calendar, and the most recent copies of the daily Class Ready Lists.

3.4 Student Training and Measurement

Student training and measurement will have four components: academic events, hands-on events, Stan/Eval measures, and graduate evaluation.

3.4.1 Academic events

There will be six categories of academic events: study materials issue, lessons, examinations, make-up examinations, Mission Planning Exercise, and make-up Mission Planning Exercise.

3.4.1.1 Study materials issue

PERSON	ACTIVITY	NOTES
Student	Asks a LCO for the next collection of issued study materials.	Issued study materials include phase manuals, workbooks and student handouts.
LCO	Retrieves the next collection of issued study materials and the student's Study Materials Issue Form.	A Study Materials Issue Form is kept for each student.
Student	Examines the study materials and, if satisfied, signs the appropriate space on the form.	LCOs file the Study Materials Issue Forms in the Study Materials Issue File by class and by student last name.

3.4.1.2 Lessons

There will be two types of lessons, lessons that may require an instructor and lessons that always require an instructor.

3.4.1.2.1 Lessons that may require an instructor

Each lesson that may require an instructor always will have an initial presentation of information and usually will have a LC quiz.

3.4.1.2.1.1 Initial presentations

There will be three kinds of initial presentations of lessons that may require an instructor: workbook presentations, audio-visual presentations, and LC classified presentations.

3.4.1.2.1.1.1 Workbook presentation

PERSON	ACTIVITY	NOTES
Student	Studies a workbook.	
Student	If the workbook has a Lesson Critique Form attached to it, fills out the form based on his impression of the workbook.	During the first two classes at Hill AFB, a Lesson Critique Form is attached to the end of a workbook if it does not have a quiz. If a workbook has a quiz, a Lesson Critique Form is given to the student after he has taken the quiz.
Student	Reports that he has finished studying the workbook to a LCO.	
Student	If the workbook had a Lesson Critique Form attached to it, hands the filled out form to the LCO.	LCOs file the completed Lesson Critique Forms in the Lesson Critique File by class and by lesson.
LCO	If the workbook does not have a quiz, updates the Class Academic Record.	

* *

If the workbook does not have a quiz, STOP.

If the workbook has a quiz, go to paragraph 3.4.1.2.1.2.

* *

3.4.1.2.1.1.2 Audio-visual presentation

PERSON	ACTIVITY	NOTES
Student	Asks a LCO for a lesson's audio-visual materials.	

PERSON	ACTIVITY	NOTES
LCO	If the materials are unavailable, informs the student of an estimated time when they may be available.	
LCO	If the materials are available, takes them to the issue desk.	
Student	Makes an entry in the Student Checkout Log.	
LCO	Gives the materials to the student.	
Student	Takes the materials to an appropriate study carrel.	
Student	Studies the audio-visual presentation.	
Student	If the student handout has a Lesson Critique Form attached to it, fills out the form based on his impression of the audio-visual lesson.	During the first two classes at Hill AFB, a Lesson Critique Form is attached to the end of a student handout for an audio-visual lesson that does not have a quiz. If an audio-visual lesson has a quiz, a Lesson Critique Form is given to the student after he has taken the quiz.
Student	Gives the materials to a LCO.	
Student	If the student handout had a Lesson Critique Form attached to it, hands the filled out form to the LCO.	LCOs file the completed Lesson Critique Forms in the lesson Critique File by class and by lesson.
LCO	Initials the Student Checkout Log.	
LCO	If the audio-visual lesson does not have a quiz, updates the Class Academic Record.	

PERSON	ACTIVITY	NOTES
LCO	Briefly inspects the audio-visual materials and stores them.	

* *

If the audio-visual lesson does not have a quiz, STOP.

If the audio-visual lesson has a quiz,

go on to paragraph 3.4.1.2.1.2.

* *

3.4.1.2.1.1.3 LC classified presentation

PERSON	ACTIVITY	NOTES
Student	Asks a LCO for a LC classified lesson's materials.	
LCO	Attempts to retrieve the materials from the Classified Materials Safe.	The Classified Materials Safe is opened, closed, and maintained IAW standard AF security procedures.
LCO	If the materials are unavailable, informs the student of an estimated time when they may be available.	
LCO	If the materials are available, updates the AF Form 614, Charge Out Record, in the front of the safe and gives them to the student.	
LCO	If the lesson does not have a quiz, gives a Lesson Critique Form to the student.	This only is done during the first two classes at Hill AFB. If a LC classified lesson has a quiz, a Lesson Critique Form is given to the student after he has taken the quiz.

PERSON	ACTIVITY	NOTES
Student	Takes the materials and Lesson Critique Form to an appropriate study carrel in the secured area of the LC.	
Student	Studies the LC classified presentation.	
Student	If a Lesson Critique Form was provided, fills out the form based on his impression of the LC classified lesson.	
Student	Gives the materials to a LCO.	
Student	If a Lesson Critique Form was provided, hands the filled out form to the LCO.	LCOs file the completed Lesson Critique Forms in the Lesson Critique File by class and by lesson.
LCO	If the LC classified lesson does not have a quiz, updates the Class Academic Record.	
LCO	Briefly inspects the materials, stores them in the safe, and updates the AF Form 614.	

* *

If the LC classified lesson does not have a quiz, STOP.

If the LC classified lesson has a quiz,

go to paragraph 3.4.1.2.1.2.

* *

3.4.1.2.1.2 LC quiz

PERSON	ACTIVITY	NOTES
LCO	Retrieves a copy of the quiz.	
Student	Makes an entry in the Student Checkout Log.	

PERSON	ACTIVITY	NOTES
LCO	Gives the student the quiz.	
Student	Takes the quiz to the LC testing area.	The LC testing area is entirely visible from the LC issue desk so that LCOs can monitor students while they take quizzes and exams.
Student	Completes the quiz.	
Student	Gives the completed quiz to a LCO.	
LCO	Uses the quiz's scoring key to score the completed quiz.	Quiz scoring keys are stored in the quiz section of the Scoring Key File according to lesson identifier. The Scoring Key File is kept locked.
LCO	Allows the student to examine his scored quiz.	

* *

If the score is greater than 84%

* *

PERSON	ACTIVITY	NOTES
LCO	If the score is 85%-99%, tells the student the correct responses to the quiz items that he missed.	
LCO	Initials the Student Checkout Log.	
LCO	Gives the student a Lesson Critique Form.	This only is done during the first two classes at Hill AFB, and the first class at MacDill AFB.
Student	If a Lesson critique Form had been provided, fills it out based on his impression of the presentation and the quiz.	

PERSON	ACTIVITY	NOTES
Student	If a Lesson Critique Form was provided, gives it to the LCO.	LCOs file the completed Lesson Critique Forms in the Lesson Critique File by class and by lesson.
LCO	Updates the Class Academic Record.	
LCO	Updates the student's Academic Record.	A student's Academic Record is stored in his Academic Folder. LCOs file the Academic Folders in the Student Academic File by class and by student last name.
LCO	Files the scored quiz.	LCOs file the scored quizzes in the Scored Quiz File by class and by lesson.

* *

If the score is below 85%:

* *

PERSON	ACTIVITY	NOTES
LCO	Gives the scored quiz to an on duty LC AIP.	
AIP	Prepares a Remediation Form for the student and gives it to him.	
AIP	Gives the scored quiz to a LCO.	
LCO	Initials the Student Checkout Log.	
LCO	Updates the student's Academic Record.	
LCO	Files the scored quiz.	
Student	Accomplishes the tasks specified by the AIP on the Remediation Form.	

PERSON	ACTIVITY	NOTES
Student	Gives the Remediation Form to the AIP and reports on the accomplishment of the assigned tasks.	
AIP	If the student successfully accomplished all the tasks specified on the Remediation Form, signs it.	
Student	Signs the Remediation Form.	
Student	Gives the signed Remediation Form to a LCO.	
LCO	Gives the student a Lesson Critique Form.	This only is done during the first two classes at Hill AFB.
Student	If a Lesson Critique Form was provided, fills it out based on his impression of the presentation, and its quiz.	
Student	If a Lesson Critique Form was provided, gives it to the LCO.	LCOs file the completed Lesson Critique Forms in the Lesson Critique File by class and by lesson.
LCO	Updates the Class Academic Record.	
LCO	Files the signed Remediation Form.	A signed Remediation Form is stored in the student's Academic Folder. LCOs file the Academic Folders in the Student Academic File by class and by student last name.

3.4.1.2.2 Lessons that always require an instructor

There will be two types of lessons that always require an instructor, seminars and make-up seminars.

3.4.1.2.2.1 Seminar

PERSON	ACTIVITY	NOTES
AIP	Reviews the instructor guide for a seminar he is scheduled to teach.	

PERSON	ACTIVITY	NOTES
AIP	Gathers the seminar materials specified by the instructor guide.	AIPs use the Instructor Checkout Log instead of the Student Checkout Log to check out nonclassified LC lesson materials.
AIP	Obtains copies of the Lesson Critique Form to give the students in the seminar at its conclusion.	This only is done during the first two classes at Hill AFB.
AIP	If the seminar has a quiz, obtains copies of the quiz to give the students in the seminar and one copy of its scoring key.	Quiz scoring keys are stored in the quiz section of the Scoring Key File according to lesson identifier. The Scoring Key File is kept locked. AIPs use the Instructor Checkout Log instead of the Student Checkout Log to check out quizzes and scoring keys.
AIP	Prepares a Seminar Attendance Roster.	
AIP	Conducts the seminar.	
AIP	Completes the Seminar Attendance Roster.	
AIP	If the seminar has a quiz, administers it.	
AIP	If the seminar has a quiz, reads aloud the correct responses to the quiz items.	
Students	If the seminar has a quiz, score the completed quizzes.	
AIP	If the seminar has a quiz, answers student questions about it.	
AIP	If the seminar has a quiz, collects the scored quizzes.	

PERSON	ACTIVITY	NOTES
AIP	Distributes copies of the Lesson Critique Form to the students.	This only is done during the first two classes at Hill AFB.
Students	If copies of the Lesson Critique Form were distributed, fill them out based on their impressions of the seminar.	
AIP	Prepares a Remediation Form and places a mark in the "Remediation" column of the Seminar Attendance Roster for each student in the seminar who did not adequately master the seminar's objectives.	
AIP	If a Remediation Form was prepared for a student, gives it to him.	
AIP	Gives the completed Seminar Attendance Roster to a LCO.	
AIP	If copies of the Lesson Critique Form were filled out, gives them to a LCO.	LCOs file the completed Lesson Critique Forms in the Lesson Critique File by class and by lesson.
AIP	If the seminar has a quiz, gives the completed quizzes to a LCO.	
AIP	If the seminar has a quiz, checks in the completed and uncompleted quizzes and their scoring key.	AIPs use the Instructor Checkout Log instead of the Student Checkout Log to check in quizzes and scoring keys.
AIP	If any LC lesson materials were checked out, checks them in.	AIPs use the Instructor Checkout Log instead of the Student Checkout Log to check in nonclassified LC lesson materials.

PERSON	ACTIVITY	NOTES
LCO	Uses the completed Seminar Attendance Roster to update the Class Academic Record.	Students whose names on the Seminar Attendance Roster are accompanied by marks in the "Remediation" column are not credited with having passed the seminar.
LCO	Files the completed Seminar Attendance Roster.	Seminar Attendance Rosters are chronologically filed in the Seminar Attendance File.
LCO	If the seminar has a quiz, updates the Academic Records of the students who completed the quiz.	A student's Academic Record is stored in his Academic Folder. LCOs file the Academic Folders in the Student Academic File by class and by student last name.
LCO	If the seminar has a quiz, files the scored quizzes.	LCOs file the scored quizzes in the Scored Quiz File by class and by lesson.

* *

If a student received a Remediation Form:

* *

PERSON	ACTIVITY	NOTES
Student	Accomplishes the tasks specified by the AIP on the Remediation Form.	
Student	Gives the Remediation Form to the AIP and reports on the accomplishment of the assigned tasks.	
AIP	If the student successfully accomplished all the tasks specified on the Remediation Form, signs it.	

PERSON	ACTIVITY	NOTES
Student	Signs the Remediation Form.	
AIP	Gives the signed Remediation Form to a LCO.	
LCO	Updates the Class Academic Record.	
LCO	Files the signed Remediation Form.	A signed Remediation Form is stored in the student's Academic Folder. LCOs file the Academic Folders in the Student Academic File by class and by student last name.

3.4.1.2.2.2 Make-up seminar

A student who was absent from a regularly scheduled seminar or who received a Remediation Form with an assignment to attend a particular seminar will explain this to the Chief of Academics. The Chief of Academics then will coordinate with the squadron schedulers to schedule a make-up seminar. A make-up seminar may involve only one student. Otherwise, make-up seminars and seminars will be the same. Thus, paragraph 3.4.1.2.2.1 that describes the events in a seminar also describes the events in a make-up seminar.

3.4.1.3 Examinations

There will be five examinations. They are ST 110 (Conversion), SM 204 (Intercept), SM 407 (Air-to-air), SM 510 (Radar/NAV/NUC), and SM 607 (RAM/SA/SAN). TAC Syllabus, Course F1600B specifies the lessons that will be covered by each exam. The events in an examination will be as follows:

PERSON	ACTIVITY	NOTES
AIP	Obtains copies of the exam he is scheduled to administer.	Copies of the exam with "Even" printed at the bottom are used for even numbered classes. Copies of the exam with "Odd" printed at the bottom are used for odd numbered classes. The first letter after the hyphen of an odd numbered class's designator is A,C,E,G,I,K, M,O,Q,S,U,W, or Y. The first letter after the

PERSON	ACTIVITY	NOTES
		hyphen of an even numbered class's designator is B,D,F,H,J,L,N,P,R,T,V, X, or Z. AIPs use the IP Checkout Log instead of the Student Checkout Log to check out exams and scoring keys.
AIP	Administers the exam.	
AIP	Gives the completed copies of the exam to a LCO.	
AIP	Checks in the completed and uncompleted copies of the exam.	AIPs use the Instructor Checkout Log instead of the Student Checkout Log to check in exams.
LCO	Uses the exam's scoring key to score the completed copies of the exam.	Exam scoring keys are stored in the exam section of the Scoring Key File according to exam identifier. There is one scoring key for copies of the exam with "Even" printed at the bottom and another for copies of the exam with "Odd" printed at the bottom. The Scoring Key File is kept locked.
LCO	Updates the Academic Record of each student whose exam was scored.	A student's Academic Record is stored in his Academic Folder. LCOs file the Academic Folders by class and by student last name.
LCO	Updates the posted Exam Ready List.	
LCO	Uses the exams with 100% scores to update the Class Academic Record.	
LCO	Files the exams with 100% scores.	LCOs file the scored exams in the Scored Exam File by class and by exam identifier.

PERSON	ACTIVITY	NOTES
Student	Notices whether the exam identifier and his class designator appear on the Exam Ready List and then notices whether the exam has been marked off on the Class Academic Record.	
Student	If his exam is ready and he did not ace it, asks a LCO for it.	
LCO	Obtains the student's scored exam and notes its score.	

* *

If the score is 85% - 99%:

* *

LCO	Retrieves a copy of the exam's scoring key.	
LCO	Allows the student to examine his scored exam.	
LCO	Tells the student the correct responses to the exam items that he missed.	
LCO	Updates the Class Academic Record.	
LCO	Files the scored exam.	LCOs file the scored exams in the Scored Exam File by class and by exam identifier.

* *

If the score is below 85%:

* *

PERSON	ACTIVITY	NOTES
LCO	Notifies the Chief of Academics of the student's exam score.	
LCO	Gives the scored exam to an on duty LC AIP.	
AIP	Makes an entry in the Instructor Checkout Log.	
AIP	Prepares a Remediation Form for the student and gives it to him.	
AIP	Gives the scored exam to a LCO.	
AIP	Checks in the scored exam.	AIPs use the Instructor Checkout Log to check in exams.
LCO	Files the scored exam.	LCOs file the scored exams in the Scored Exam File by class and by exam identifier.
Student	Accomplishes the tasks specified by the AIP on the Remediation Form.	
Student	Gives the Remediation Form to the AIP and reports on the accomplishment of the assigned tasks.	
AIP	If the student successfully accomplished all the tasks specified on the Remediation Form, signs it.	
Student	Signs the Remediation Form.	
Student	Gives the signed Remediation Form to a LCO.	

PERSON	ACTIVITY	NOTES
LCO	Files the signed Remediation Form.	A signed Remediation Form is stored in the student's Academic Folder. LCOs file the Academic Folders in the Student Academic File by class and by student last name.
LCO	Retrieves a copy of the exam and writes "RETEST" at the top of its first page.	A copy of the exam with "Odd" printed at the bottom is selected if the student is in an even numbered class. A copy of the exam with "Even" printed at the bottom is selected if the student is in an odd numbered class. The first letter after the hyphen of an odd numbered class' designator is A,C, E,G,I,K,M,O,Q,S,U,W, or Y. The first letter after the hyphen of an even numbered class' designator is B,D,F,H,J,L,N,P,R,T,V,X, or Z.
Student	Makes an entry in the Student Checkout Log.	
LCO	Gives the student the alternate exam.	
Student	Takes the alternate exam to the LC testing area.	The LC testing area is entirely visible from the LC issue desk so that LCOs can monitor students while they take quizzes and exams.
Student	Completes the alternate exam.	If the student requests clarification that the LCO is unable to adequately provide, the LCO tells him to talk with the on duty LC AIP.
Student	Gives the completed alternate exam to a LCO.	
LCO	Initials the Student Checkout Log.	

PERSON	ACTIVITY	NOTES
LCO	Uses the alternate exam's scored key to score the completed alternate exam.	Exam scoring keys are stored in the exam section of the Scoring Key File according to exam identifier. The Scoring Key File is kept locked.
LCO	Updates the student's Academic Record.	A student's Academic Record is stored in his Academic Folder. LCOs file the Academic Folders in the Student Academic File by class and by student last name.
LCO	If the score is 100%, updates the Class Academic Record.	
LCO	If the score is 100%, files the scored alternate exam.	LCOs file scored alternate exams in the Scored Exam File by class and by exam identifier.
Student	Notices whether the exam has been marked off on the Class Academic Record.	
Student	If he did not ace the alternate exam, asks a LCO for it.	
LCO	Obtains the student's scored alternate exam and notes its score.	

* *

If the score is 85% - 99%:

* *

PERSON	ACTIVITY	NOTES
LCO	Retrieves a copy of the alternate exam's scoring key.	
LCO	Allows the student to examine his scored alternate exam.	

PERSON	ACTIVITY	NOTES
LCO	Tells the student the correct responses to the alternate exam items that he missed.	
LCO	Updates the Class Academic Record.	
LCO	Files the scored alternate exam.	LCOs file the scored alternate exams in the Scored Exam File by class and by exam identifier.

* *

If the score is below 85%:

* *

PERSON	ACTIVITY	NOTES
LCO	Notifies the Chief of Academics of the student's backup exam score and directs the student to meet with him.	
LCO	Files the scored alternate exam.	LCOs file the scored alternate exams in the Scored Exam File by class and by exam identifier.
Chief of Academics	Counsels the student, decides what further action is needed, and completes a TAC Form 27, Record of Individual Counseling.	AFR 53-15 and AFR 35-13 prescribes the procedures to be followed if a student fails to meet training standards.

3.4.1.4 Make-up examinations

A student who was absent from a regularly scheduled examination will explain this to the Chief of Academics. The Chief of Academics will prepare a memo that gives the student permission to take the missed examination in the LC. The student will present this memo to a LCO who will retrieve a copy of the missed exam. In the meantime, the student will make an entry in the Student Checkout Log. The LCO then will give the student the exam. The student will take it to the LC testing area, complete it, and return it to a LCO. The LCO will initial

the Student Checkout Log, score the exam, update the student's Academic Record, and, if the score is 100%, update the Class Academic Record and file the exam. The student will notice whether the exam is marked off on the Class Academic Record. if it is not, he will ask a LCO for it. The rest of the events in a make-up examination will parallel those in a regularly scheduled examination (paragraph 3.4.1.3).

3.4.1.5 Mission planning exercise

PERSON	ACTIVITY	NOTES
AIP	Reviews the Mission Planning Exercise (SM709) Instructor Guide.	
AIP	Prepares a Seminar Attendance Roster.	
AIP	Presents the ATO, weather, and intelligence information for an air-to-surface mission to the students.	
AIP	Divides the students into groups of no more than four members.	
Students in each group	Cooperate in planning an air-to-surface mission that is appropriate for the given ATO, weather, and intelligence information, and decide what part of the planned mission each group member will brief.	
Each Student	Briefs part of the mission that he helped plan to all the groups.	
AIP	Prepares a Remediation Form and places a mark in the "Remediation" column of the Seminar Attendance Roster for each student who did not adequately participate in the planning and briefing of the mission.	
AIP	Leads a discussion about the mission after all the students have delivered their briefings.	

PERSON	ACTIVITY	NOTES
AIP	If a Remediation Form was prepared for a student, gives it to him.	
AIP	Gives the completed Seminar Attendance Roster to a LCO.	
LCO	Uses the completed Seminar Attendance Roster to update the Class Academic Record.	Students whose names on the Seminar Attendance Roster are accompanied by marks in the "Remediation" column are not credited with having passed the Mission Planning Exercise.
LCO	Files the completed Seminar Attendance Roster.	Seminar Attendance Rosters are filed chronologically in the Seminar Attendance File.

* *

If a student received a Remediation Form:

* *

PERSON	ACTIVITY	NOTES
Student	Accomplishes the tasks specified by the AIP on the Remediation Form.	
Student	Gives the Remediation Form to the AIP, reports on the accomplishment of the assigned tasks, and briefs the entire mission that his group planned.	
AIP	If the student successfully accomplished the assigned tasks and delivered his briefing, signs the Remediation Form.	
Student	Signs the Remediation Form.	
AIP	Gives the signed Remediation Form to a LCO.	

PERSON	ACTIVITY	NOTES
LCO	Updates the Class Academic Record.	
LCO	Files the signed Remedation Form.	A signed Remediation Form is stored in the student's Academic Folder. LCOs file the Academic Folders in the Student Academic File by class and by student last name.

3.4.1.6 Make-up mission planning exercise

A student who was absent from a regularly scheduled Mission Planning Exercise will explain this to the Chief of Academics. The Chief of Academics then will coordinate with the squadron scheduler to schedule a make-up Mission Planning Exercise. A make-up Mission Planning Exercise may involve only one student, in which case that student would brief the entire mission instead of just a part of it. Otherwise, the events in a make-up Mission Planning Exercise will correspond with those in a regularly scheduled Mission Planning Exercise (paragraph 3.4.1.5).

3.4.2 Hands-on events

There will be two kinds of hands-on events, device sessions and sorties.

3.4.2.1 Device sessions

There will be two categories of device sessions, those without and with grade slips.

3.4.2.1.1 Device sessions without grade slips

A device session that uses an Egress Procedures Trainer (EPT), a static aircraft (AC), or pieces of actual equipment (AE) will be conducted like any regularly scheduled seminar (paragraph 3.4.1.2.2.1). Wing life support personnel will be in charge of EPT 101. AIPs will supervise AC 101, AC 501, and AE 701.

3.4.2.1.2 Device sessions with grade slips

There will be grade slips for device sessions that use a Cockpit Familiarization Trainer (CFT), a Dynamic Systems Simulator (DSS), or an Advanced Simulator for Pilot

Training (ASPT). The events in one of these device sessions will be as follows:

PERSON	ACTIVITY	NOTES
IP (academic or flight)	Reviews the instructor guide for a device session he is scheduled to lead.	
IP	Obtains the Student Grade Folder(s) of the student(s) who will participate in the device session.	
IP	Reviews the Grade Folder(s) IAW TACR 50-31, p. 2.	
IP	Conducts the device session.	
IP	Completes and signs the device session's grade slip in the (each) Grade Folder.	Attachment 2 of TACR 50-31 explains how to grade performance elements in device sessions.
Student(s)	Initial(s) the grade slip(s).	
IP	Notifies a squadron scheduler of any student(s) whose overall grade(s) for the device session was (were) dangerous, 0, or 1, or who was (were) absent from the device session.	If the overall grade were dangerous or 0, a squadron scheduler would reschedule the device session. A device session with an overall grade of 1 may be reaccomplished if recommended by the IP and approved by the OPs officer. This step does not apply to ASPT device sessions.
IP	Returns the grade folder(s) to its (their) place of storage.	

3.4.2.2 Sorties

PERSON	ACTIVITY	NOTES
IP (academic or flight)	Reviews the mission description in TAC Syllabus, Course F1600 B for the sortie he is scheduled to fly.	The IP also may wish to refer to the phase manual that further describes the sortie's mission elements.

PERSON	ACTIVITY	NOTES
IP	Obtains the Student Grade Folder of the student who will participate in the sortie.	
IP	Reviews the Grade Folder IAW TACR 50-31, p. 2.	
IP and Student	Attend a briefing for the scheduled sortie.	
IP and Student	Fly the sortie.	If the sortie were cancelled or non-effective, the IP would notify the squadron scheduler who then would reschedule the sortie. TACR 50-31, p. 4, defines a non-effective sortie.
IP and Student	Attend a debriefing.	
IP	Completes and signs the sortie's grade slip in the student's Grade Folder.	Attachment 2 of TACR 50-31 explains how to grade performance elements in sorties. Although an IP is encouraged to annotate each grade slip that he grades, he must annotate a grade slip if its sortie was non-effective or incomplete, or if the student's overall grade for the sortie was dangerous, 0, or 1. TACR 50-31, p. 4, defines a non-effective sortie and an incomplete sortie. If the student busted the sortie, the IP usually would recommend on the grade slip remedial tasks what the student should accomplish before he reflies the sortie.

PERSON	ACTIVITY	NOTES
Student	Initials the grade slip.	
IP	If the student's overall grade for the sortie was dangerous, 0, or 1, explains this to the squadron operations officer.	If this happened, the squadron operations officer would decide what action, if any, should be taken IAW TACR 50-31, pp. 3-4.
IP	Returns the Grade Folder to its place of storage.	

3.4.3 Stan/Eval measures

Stan/Eval personnel will:

1. Administer an open-closed book examination (ST 110) to each student IAW TACR 60-2, chapter 5.

2. Conduct an emergency procedures/systems operation evaluation (CFT 106) of each student IAW TACR 60-2, chapter 4.

3. Conduct a combined instrument and initial qualification evaluation (TR 6) of each student IAW TACR 60-2, chapter 4.

A member of the OTD team or a course manager (e.g., a chief of academics) should attend each quarterly F-16 training unit Stan/Eval board meeting. Also, the OTD team should receive the minutes of each quarterly F-16 unit (training and operational) Stan/Eval board meeting.

3.4.4 Graduate evaluation

The performance of course graduates in their gaining units will be evaluated IAW AFR 50-38. The general events in the collection of graduate evaluation data will be as follows:

1. The F-16 OTD team mails copies of the F-16 "B" Graduate Evaluation Questionnaire to field supervisors of recent course graduates.

2. These supervisors complete the questionnaires based on their impressions of the graduates' performance.

3. The supervisors return the completed questionnaires to the F-16 OTD team.

3.5 System Centered Measurement

There will be temporary and permanent system centered measures.

3.5.1 Temporary measures

Only for a short time will lessons critiques be solicited and interviews be conducted.

3.5.1.1 Lesson critiques

Each student in Hill Air Force Base classes 80-ABPI and 80-BBPI and in MacDill Air Force Base class 80-ABMI will use the Lesson Critique Form to critique each lesson (see paragraph 3.4.1.2).

3.5.1.1 Interviews

An OTD team member will use the Interview Guide to conduct structured interviews with students and instructors at MacDill Air Force Base about six months after the course begins there. The OTD team will request F-16 training personnel at MacDill Air Force Base to schedule five interviews with students and five interviews with instructors. These students and instructors should be randomly selected from the course's available students and instructors. Each interview will last about ten minutes.

3.5.2 Permanent measures

Students always will have opportunities to express their opinions about the course through course critiques and unsolicited suggestions.

3.5.2.1 Course critiques

There will be two almost identical course critiques, the Mid-Course Critique and the End-of-Course Critique. Both will contain the same Likert scales and spaces for comments. A LCO will distribute copies of the Mid-Course Critique to all the students in a class when it has progressed halfway through the course. The students will have a week to complete and return them. Near the end of the course, a LCO will distribute copies of the End-of-Course Critique to the class members. They again will be allowed a week to complete and return them.

3.5.2.1 Suggestions

Whenever a student notes a problem in the course, he can recommend a solution to it by obtaining a Suggestion Form from a LCO, describing the problem and its solution on the form, and returning it to the LCO.

3.6 Revision

The OTD team will be responsible for suggesting course revisions. Each course revision will occur in two phases, development and implementation.

3.6.1 Development

Data from student centered measures, system centered measures, and external factors will be analyzed. The analysis results then will be used to generate course revisions.

3.6.1.1 Student centered measures

Some course revisions will be based on data from three groups of student centered measures: the written tests (quizzes and examinations) not administered by Stan/Eval, the grade slips and the F-16 "B" Graduate Evaluation Questionnaire, and the Stan/Eval measures.

3.6.1.1.1 Written tests

The five steps in developing course revisions from written test data will be as follows:

1. Perform the test item analysis. The steps in performing this analysis will be as follows:

   a. Use the scored quizzes and exams to update the Item Table at least once a month.

   b. Use the Item Table to complete an Item Summary Table at least once every two months. The percentage of student respondents who correctly answered the most recent version of each item will be recorded in the "% Correct" column of the Item Summary Table. Each "% Correct" value that does not exceed 75% will be circled with a colored pen. The most recent version of any item with a circled "% Correct" value will be considered "suspicious."

2. Perform the discrimination analysis. (This analysis only will use the exam responses of the members of the first two classes at Hill Air Force Base. Quiz responses will not be included in this analysis.) The steps in performing this analysis will be as follows:

   a. Group the completed exams of the first two classes by class and by exam.

   b. Order the completed exams in each of these groups by score from high to low.

c. Count off a third of the "high" exams off the top of each group of ordered exams.

d. Count off a third of the "low" exams off the bottom of each group of ordered exams.

e. Divide the number of correct responses to each item in the "high" subgroup of each group of ordered exams by the number of exams in that subgroup. In other words, calculate the proportion of correct responses to each exam item for the high scorers (P_H).

f. Repeat the procedure in step "e" to determine the proportion of correct responses to each exam item for the low scorers (P_L).

g. Subtract the P_L of each exam item from its P_H to obtain the discrimination index (D) of that item.

If the D for any exam is negative, that item will be considered "suspicious."

3. Summarize the responses made to each "suspicious" test item.

4. With the aid of the response summaries, try to improve each "suspicious" test item.

5. With the help of the response summaries, try to improve the instruction associated with each "suspicious" test item.

3.6.1.1.2 Grade slips and graduate evaluation

The three steps in developing course revisions from grade slips and graduate evaluation data will be as follows:

1. Perform the task item analysis. The steps in performing this analysis will be as follows:

a. Use the completed grade slips and F-16 "B" Graduate Evaluation Questionnaire to update the Task Tables at least once a month.

b. Use the Task Tables to complete a set of Task Summary Tables at least once every two months. The percentage of students who received a grade of 2, 3, or 4 for each grade slip item or who attained standard for each questionnaire item will be recorded in the "% Passed" column of the Task Summary Tables. Each "% Passed" value that does not exceed 85% will be circled with a colored pen. A task item with a circled "% Passed" value will be considered "suspicious."

2. Summarize the comments pertaining to each "suspicious" task item.

3. With the aid of the comment summaries, try to improve the instruction associated with the "suspicious" task items.

4. Notify the Chief of Academics and the squadron operations officer of the "suspicious" task items.

3.6.1.1.3 Stan/Eval measures

The findings and recommendations of Stan/Eval trend analyses for F-16 training and operational units will be used to develop course revisions. Trend analysis findings and recommendations will be published in the minutes of quarterly F-16 unit Stan Eval board meetings.

3.6.1.2 System centered measures

Some course revisions will be based on data from the interim Lesson Critique Forms and from the Mid-Course Critiques, End-of-Course Critiques, Suggestion Forms, and interim Interview Guides.

3.6.1.2.1 Lesson critiques

The five steps in developing lesson revisions from interim lesson critique data are as follows:

1. Decide whether each student comment about a lesson warrants changing that lesson.

2. Use the comments that merit lesson changes to make those changes.

3. Whenever all the members of a class have finished a lesson, use their completed Lesson Critique Forms for that lesson to complete a Lesson Critique Tabulation Form. The mean and standard deviation of each critique item will be entered on the form. An one-tailed t-test will be performed on each item mean below the 4.0 (good) standard. Each item mean that is significantly ($p < .25$) below 4.0 will be circled with a colored pen. The part of the lesson associated with a circled item mean will be considered "suspicious."

4. Summarize a class' Lesson Critique comments about each "suspicious" part of a lesson.

5. With the help of the comment summaries, try to improve each "suspicious" part of a lesson.

3.6.1.2.2 Other system centered measures

The seven steps in developing course revisions from course critique, suggestion, and interview data will be as follows:

1. Decide whether each student comment warrants changing the course.

2. Use the comments that merit course changes to make those changes.

3. With a colored pen, write next to each of the remaining student comments a code number (1-6) that represents the course critique sub-scale appropriate for that comment. The six course critique sub-scales are: 1-instructor performance, 2-base support, 3-student measurement, 4-course design, 5-flight training, and 6-mediated training.

4. Use a class's completed Mid-Course Critiques to complete a Course Critique Tabulation Form. The mean and standard deviation of each critique item will be entered on the form. An one-tailed t-test will be performed on each item mean below the 4.0 (agree or usually) standard. Each item mean that is significantly ($p < .25$) below 4.0 will be circled with a colored pen. The part of the course associated with a circled item or sub-scale will be considered "suspicious."

5. Use a class's completed End-of-Course Critiques to complete a Course Critique Tablulation Form as in step 4.

6. Summarize the coded comments that pertain to each "suspicious" part of the course.

7. With the help of the comment summaries, try to improve each "suspicious" part of the course.

3.6.1.3 External factors

Some changes to things apart from the course will require changes to the course. Most external factors that may influence the course will belong to four major categories: Air Force directives (e.g., regulations, management decisions, local procedures), Air Force publications (e.g., -1, -34, Flightcrew Checklist), available training resources (e.g., LC operating budget, number and experience of IPs, number of aircraft), and number and characteristics of incoming students. Changes to such external factors will be monitored and, if necessary, will be used to develop course revisions.

3.6.2 Implementation

The steps for implementing a course revision will be as follows:

1. Decide whether the revision is instructional or managerial. Instructional revisions may affect the course's study materials, tests, instructor and device session guides, student measurement forms, and syllabus. Managerial revisions may affect the course's job aids, management report, records, forms, and syllabus.

2. If the course revision is managerial, go to step 5. Otherwise, decide whether the instructional revision needs immediate implementation. For example, an instructional revision resulting from a safety supplement probably should be implemented as soon as possible while an instructional revision resulting from lesson critique data probably could be safely postponed.

3. If the instructional revision needs immediate implementation, go to step 5. Otherwise, store the instructional revision.

4. Resume the process of implementing the stored revision within two months' time. In other words, do not wait longer than two months to go to step 5.

5. Decide whether the revision affects the course's syliabus.

6. If the revision does not affect the course's syllabus, go to step 7. Otherwise, modify the syllabus and submit it to TAC for approval. The revision should not continue through the implementation process unless TAC approves the modified syllabus.

7. Produce masters of pages, slides, and/or tapes that should be added to or substituted for existing pages, slides, and/or tapes.

8. Produce implementation directions that describe where new masters should be included and/or what portions of existing materials should be deleted.

9. Use the implementation directions to update the OTD team's master file of course materials.

10. Send copies of the implementation directions and/or new masters to the appropriate managers in each F-16 training unit.

11. Chronologically file the implementation directions in the OTD team's Implementation File.

4.0 MAJOR EQUIPMENT REQUIREMENTS

The equipment listed below includes the primary hardware used to support the F-16 B course at Hill AFB which is programmed for a learning center, two classrooms, eight AIPs and up to twenty students. The list does not include simulator-based equipment, videotape equipment, or computer support.

Item(s)	Federal Stock No.	Cost per Unit	No. of Units	Cost
Projector, Opaque	6730-00-018-0605	278.00	1	278.00
Projector, Overhead	6730-00-038-4792	146.38	3	439.14
Projector, Slide Sub 6730P796DQ	6730-01-005-0307	376.21	3	1128.63
Screen, Projector	6730-00-402-6437	59.92	2	119.84
Projector,16mm	6730-00-451-2036	670.25	3	2010.75
Projector, Sound Slide	6730-00-777-3374	374.50	12	4494.00
File Cabinet, 5 dr. KL	7110-00-286-3796	163.00	6	978.00
File Cabinet, 4 dr. Safe	7110-00-976-4852	1485.16	1	1485.16
Calculator Desk, Print Display	7420-01-065-6777	174.85	2	349.70
Typewriter, Selectric II	7430-00461-9594	924.48	3	2773.44
Blackboard. Portable 4'x 6'	7110-00-132-6650	58.00	4	238.00
Storage & Display shelving	7125-00-559-6378	74.00	8	592.00
Chair, Type II Style A (Arms), Blue	7110-00-602-0263	83.00	11	913.00

Chair, Type II Style B (No arms), Blue	7110-00-601-9037	74.00	60	4440.00
Desk, Type I, Single Pedestal "A" 60x30, Size 1	7110-01-015-1362	130.00	11	1430.00
Desk, Type I, Single Pedestal "A" 45x30, Size 2	7110-00-149-1624	122.00	16	1952.00
Carrel Section, Type I, Size 2 for desk Size 2 above	7110-00-113-2198	Price not available	16	
Table, Office 72x36, Size 1	7110-00-113-0448	82.00	20	1640.00

TABLE OF FORMS

SUGGESTED LEARNING CENTER FILING SYSTEM

Scored Tests

File	Contents	Order
Scored Quiz	Scored quizzes	By class and by lesson
Scored Exam	Scored exams	By class and by exam identifier

Used Forms

File	Contents	Order
Class Ready List	Class Ready Lists	By class
Student Academic	Student Academic Folders with Academic Records and Remediation Forms	By class and by student last name
Seminar Attendance	Seminar Attendance Rosters	Chronologically
Student Checkout Log	Pages from Student Checkout Log	Chronologically
Instructor Checkout Log	Pages from Instructor Checkout Log	Chronologically
Study Materials Issue	Study Materials Issue Forms	By class and by student last name
Lesson Critique	Lesson Critique Forms	By class and by lesson
Suggestion	Suggestion Forms	By class and by type of suggestion

5.0 FORMS

There will be a form for measuring AIPs and several forms for scheduling instruction, training and measuring students, measuring the instructional system, and revising the course.

5.1 Seminar Observation Form

(See paragraph 3.2).

FUNCTION	COMPLETION	STORAGE
Provide feedback to instructor about his seminar teaching effectiveness. Provide information to Chief of Academics that may help him to improve the quality of seminars.	Chief of Academics or someone designated by him.	Filed by instructor last name in Chief of Academic's Seminar Observation File.

It is suggested that the Chief of Academics use the Seminar Observation Form or one like it to monitor seminars. However, the OTD team does not plan to analyze data from this source.

5.2 Forms for Scheduling Instruction

The weekly Academic Calendar and daily Class Ready List will be used in scheduling instruction.

5.2.1 Academics Events Calendar

See paragraph 3.3.

FUNCTION	COMPLETION	STORAGE	DISPOSITION
Inform student's of next week's academic events, device sessions without grade slips, and lesson deadlines.	Chief of Academics or someone designated by him.	On LC wall where it is visible to all and in squadron scheduler's office.	Destroyed at end of week.

DIRECTIONS:

1. Chief of Academics meets with squadron schedulers to decide upon the content of the coming week's Academic Events Calendar.

SEMINAR OBSERVATION FORM

INSTRUCTOR_____ IDENTIFIER_____

OBSERVER_____ DATE_____

	EXCELS	GOOD	ADEQUATE	UNSAT
TEACHING STYLE				
Appearance				
Voice tone/clarity				
Message clarity				
Attitude				
Absence of nervous distractors				
Rapport with students				
Discusses topics economically				
Stays on topic				
Covers entire topic				
MATERIALS USAGE				
Has necessary materials				
Organization				
Follows instructor guide				
EQUIPMENT USAGE				
Prepared in advance				
Operates equipment smoothly				
Establishes sound classroom environment for learning (e.g., focus, lights, etc.)				

COMMENTS: _____

ACADEMIC EVENTS CALENDAR

MONTH	DATES						
July 80	21	22	23	24	25	26	27
EVENTS	MON	TUES	WED	THURS	FRI	SAT	SUN
Identifier	SM704	SM705	SM606	SM707	SM708		
Location	20	20	20	20	20		
Instructor	Jensen	Jensen	Jensen	Smith	Smith		
Time	9:30	9:30	9:30	8:00	9:00		
Identifier	SM704	SM705	SM706	SM707	SM708		
Location	20	20	20	20	20		
Instructor	Jensen	Jensen	Smith	Smith	Smith		
Time	2:00	2:00	12:00	1:00	2:00		
Identifier		ST601	SM606				
Location		14	20				
Instructor		Hansen	Jensen				
Time		8:00pm	3:00				
Identifier			SM706				
Location			20				
Instructor			Smith				
Time			5:30				
Identifier			ST101-103				
Location			14				
Instructor			Anderson				
Time			16:00				
LESSONS DUE							
Class 80-ABP	WB603						
Class 80-BBP			WB 101 102 103 104	WB 106 107 108 AS 101 113	WB 109 110 AS 102 116 117		
Class ____							

2. Chief of Academics completes an Academic Events Calendar for the next week by writing 1) the identifier, location, instructor, and time of each academic event or device session without a grade slip that will occur during the coming week and 2) the identifier of each lesson not requiring an instructor that must be completed during the coming week.

If there were not enough space to record all the next week's events on one copy of the Academic Events Calendar, another also would be used.

5.2.2 Class Ready List

See paragraph 3.3.

FUNCTION	PREPARATION	UPDATING	STORAGE	DISPOSITION
Inform squadron schedulers of students in a class who are ready for a device session slip or for a sortie.	LCO	LCO	Filed by class in LC Class Ready List File.	Copy sent to squadron schedulers once a day. Destroyed when class has graduated.

DIRECTIONS:

1. LCO prepares a Class Ready List for each class when it begins the course by 1) writing its class designator, 2) alphabetically listing the names of the class members down the left-hand column, and 3) listing the sorties and device sessions with grade slips in the order suggested by the course syllabus across the top row. Because there is not enough space on one copy of the Class Ready List to record all the sorties and device sessions with grade slips, several copies of the form will have to be used for one class.

2. LCO places an X in the appropriate box of a Class Ready List whenever a class member has successfully completed the academic events and device sessions without grade slips that are prerequisite to a device session with a grade slip or to a sortie. For example, if James Melville has WS101, WB114, AS105, and AS106 marked off on his class's Class Academic Record, a LCO would mark an X in the same row as James Melville and in the same column as DSS101 because WS101, WB114, AS105, and AS106 are the prerequisites to DSS101. Of course, a LCO will need to refer to the course syllabus to find out the prerequisite relationships among the course events.

CLASS 80-ABP

CLASS READY LIST

STUDENT	DEVICE SESSIONS AND TRAINING RIDES														
	DSS101	DSS102	CFT101	CFT102	CFT103	CFT104	CFT105	TR1	TR2	TR3	TR4	BAH1	BAH2	CFT106	FORM1
Cansler	X	X	X	X	X	X	X								
Corrigan	X	X	X	X	X										
Denny	X	X	X	X	X	X	X								
Gonzales	X	X	X	X	X										
Jones	X	X	X	X	X	X									
McDonald	X	X	X	X	X	X	X								
Morton	X	X	X	X	X	X	X								
Rosepink	X	X	X	X											
Undhjem	X	X	X	X	X	X	X								
Ward	X	X	X	X	X	X	X								
Weller	X	X	X	X	X	X									
Wells	X	X	X	X	X	X	X								

5.3 Forms for Training and Measuring Students

Student training and measurement forms will deal with student measurement or with course operation.

5.3.1 Forms for measuring students

Most student measurement forms will be kept in student folders. The remainder will be kept elsewhere.

5.3.1.1 Forms in student folders

There will be Student Academic Folders and Student Grade Folders.

5.3.1.1.1 Forms in Student Academic Folder

LCOs will establish and maintain a Student Academic Folder for each student. It will contain the student's Academic Record and his signed Remediation Forms filed chronologically. Student Academic Folders will be filed in the LC's Student Academic File by class and by student last name. Squadron administrative personnel will use them periodically to update other records and forms. A student's Student Academic Folder will be sent to the OTD team after he has graduated. The OTD team will destroy it after one year from the date that it was received.

5.3.1.1.1.1 Academic Record

See paragraph 3.4.1.

FUNCTION	PREPARATION	UPDATING	STORAGE
Record test scores and missed items. Used to update TAC Form 89.	LCO	LCO	Student Academic Folder.

DIRECTIONS:

1. LCO prepares an Academic Record for each student when he begins the course by writing his name, rank and class designator.

2. LCO makes an entry on a student's Academic Record whenever an exam, an alternate exam, or a quiz of that student has been scored.

ACADEMIC RECORD

George Walters (Name) | 2 lt. (Rank) | 80-ABP (Class)

EXAMS

Date	Odd/ Even	Ident	No. Poss.	No. Corr.	% Corr.

ALTERNATE EXAMS

Date	Odd/ Even	Ident	No. Poss.	No. Corr.	% Corr.

QUIZZES

Date	Lesson	No. Poss.	No. Corr.	% Corr.
25 Mar	NB101	10	9	90
25 Mar	NB102	8	8	100

Date	Lesson	No. Poss.	No. Corr.	% Corr.

QUIZZES (CONT'D)

Date	Lesson	No. Poss.	No. Corr.	% Corr.

Date	Lesson	No. Poss.	No. Corr.	% Corr.

COLUMN	EXPLANATION
Date	Date (e.g., 13 May 80) when entry is made.
Odd/Even	O if "Odd" is printed at the bottom of the exam or alternate exam. E if "Even" is printed at the bottom of the exam or alternate exam.
Ident	Identifier of the exam or alternate exam (e.g., SM204)
Lesson	Identifier of the quiz's lesson (e.g., WSJ03)
No. Poss	Number of items in the test.
No. Corr	Number of items correctly answered.
% Corr	Percent of items correctly answered.

5.3.1.1.1.2 Remediation Form

See paragraph 3.4.1.

FUNCTION	PREPARATION	SIGNATURES	STORAGE
Document remedial help supplied to student.	AIP	AIP and student	Chronologically filed in Academic Folder.

DIRECTIONS:

1. AIP prepares a Remediation Form for a student whenever his academic performance has been unsatisfactory. If the form is being prepared because the student scored below 85% on a quiz or an exam, the AIP should mention the quiz (lesson identifier) or the exam (exam identifier) under "REASON FOR REMEDIATION."

2. AIP who prepared a form and student for whom it was prepared sign it after the student has completed the assignments described on it.

5.3.1.1.2 Forms in Student Grade Folders

Squadron administrative personnel will establish and maintain a Student Grade Folder for each student. TACR 50-31 describes the forms that a Student Grade Folder will contain, their function, and the process of their completion and disposition.

REMEDIATION FORM

STUDENT

DATE 25 March 86

Name Sam Gardner Class 80-ABP

INSTRUCTOR

Name Hank Smith Office No. 35 Duty Phone: 7301

REASON FOR REMEDIATION Scored 68% on WB101 quiz.

ASSIGNMENT(S)

Confer with: Mark Shaw

Study: *(Specify Lessons & objectives, AF publications, etc., to be studied)*

WB101 - Objs. C and D

Other:

I have completed the assignments prescribed above.

Sam Gardner

(student signature)

The student has satisfactorily completed the assignment(s) prescribed above.

Hank Smith

(IP signature)

5.3.1.2 Forms not kept in student folders

Seminar Attendance Rosters, Class Academic Records, TAC Forms 27 (Record of Individual Counseling), and F-16 "B" Graduate Evaluation Questionnaires will not be kept in student folders.

5.3.1.2.1 Seminar Attendance Roster

See paragraphs 3.4.1.2.2 and 3.4.1.5.

FUNCTION	PREPARATION	COMPLETION	STORAGE	DISPOSITION
Document student's attendance at seminar, make-up seminar, device session without a gradeslip, or make-up device session without a gradeslip.	AIP	AIP	Chronologically filed in LC's Seminar Attendance File.	Destroyed after six months.

DIRECTIONS:

The designator of a class and an alphabetical listing of all its members' names will be printed on copies of the Seminar Attendance Roster when the class begins the course.

1. AIP assigned to teach a seminar, make-up seminar, device session without a gradeslip, or make-up device session without a gradeslip prepares an appropriate copy of the Seminar Attendance Roster. He does this by 1) writing the seminar/device session identifier, date, and his name and 2) indicating whether the session will be a seminar/device session or a make-up seminar/device session.

2. AIP places a check in the "Absent" column of the roster next to the name of each absent class member.

3. AIP writes the name and class designator of each student present who is not a member of the class.

4. AIP places a check in the "Remediate" column of the roster next to the name of each student who did not satisfactorily accomplish the objectives of a seminar/device session.

SEMINAR ATTENDANCE ROSTER

SEMINAR IDENTIFIER: SME 101 Make-up Seminar? (Circle one) (YES) NO

DATE: 31 March 80 INSTRUCTOR NAME Steven Henderson

CLASS

NAME	Absent (Marked by Instructor)	Remediate
Cansler	✓	
Corrigan	✓	
Denny	✓	
Gonzales	✓	
Jones		
McDonald	✓	
Morton	✓	
Rosepink	✓	
Undhjem		
Ward	✓	
Weller		
Wells	✓	

STUDENTS FROM OTHER CLASSES	CLASS	Remediate

5.3.1.2.2 Class Academic Record

See paragraph 3.4.1.

FUNCTION	PREPARATION	UPDATING	STORAGE	DISPOSITION
Track academic progress of each student in a class. Used to determine whether a student is ready for certain training events and to update Class Ready Lists.	LCO	LCO	On LC wall where it is visible to all.	Erased when all class members have graduated.

DIRECTIONS:

1. LCO prepares a Class Attendance Record for each class when it begins the course by 1) writing its class designator, 2) alphabetically listing the names of the class members down the left-hand column, and 3) listing the academic events and device sessions without gradeslips in the order suggested by the course syllabus along the top row.

2. LCO places an X in the appropriate box of a Class Academic Record whenever a class member completes an academic event. For example, if Don Rencher attended SM101 and did not need remediation, a LCO would mark an X in the same row as Don Rencher and in the same column as SM101.

5.3.1.2.3 Record of Individual Counseling

See paragraph 3.4.1.3.

FUNCTION	PREPARATION	SIGNATURES	STORAGE	DISPOSITION
Document a counseling session.	Supervisor (e.g., Chief of Academics)	Supervisor and Student	Filed by last name in Counseling File kept in squadron operations building.	Destroyed after one year.

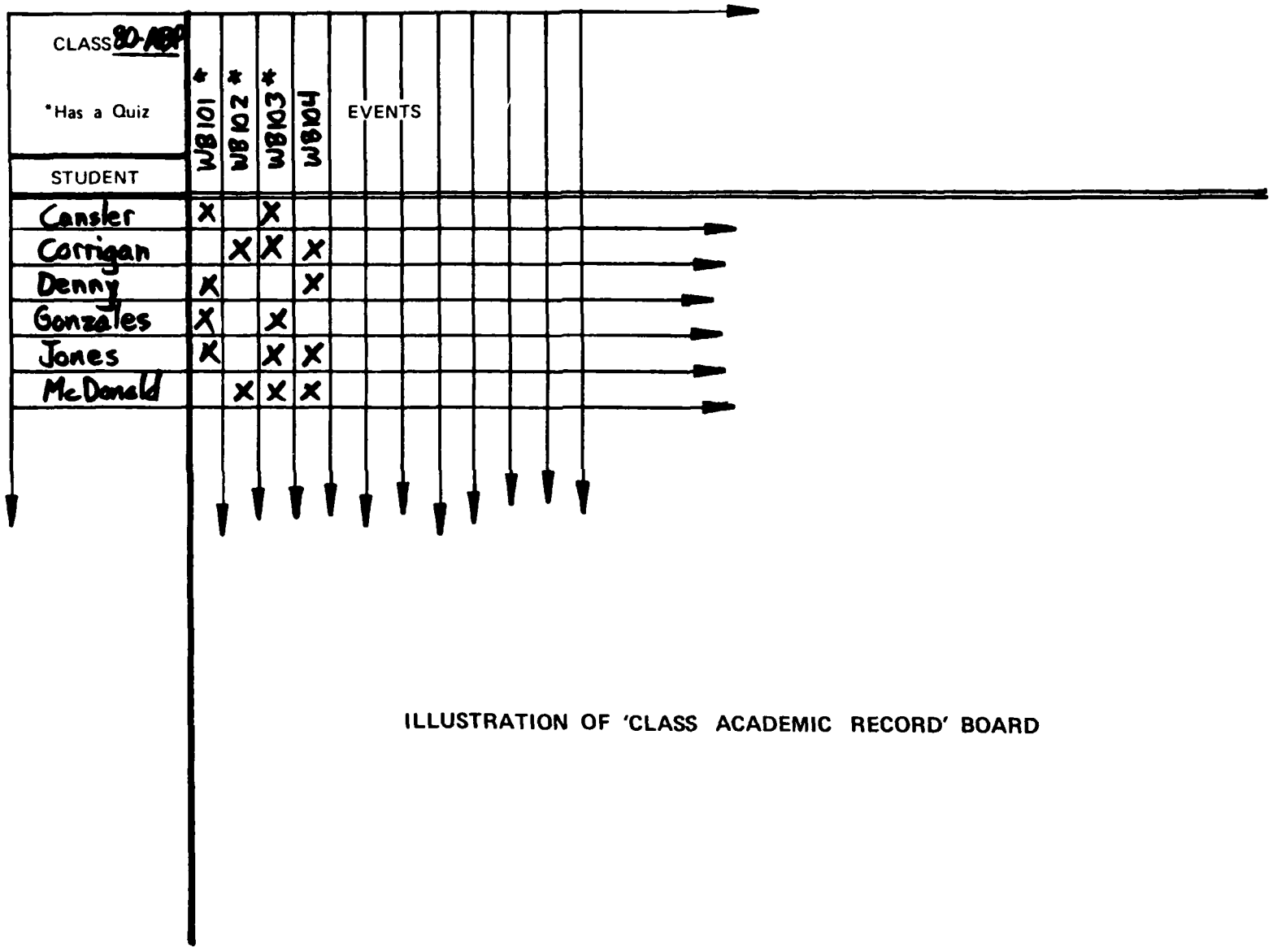


ILLUSTRATION OF 'CLASS ACADEMIC RECORD' BOARD

DIRECTIONS:

1. Supervisor prepares a TAC Form 27 (Record of Individual Counseling) for a student whenever he has failed an alternate examination or has demonstrated through other actions a need to be counseled.

2. Supervisor who prepared a form and student for whom it was prepared sign it at the conclusion of the counseling session.

5.3.1.2.4 F-16 "B" Graduate Evaluation Questionnaire

(See paragraphs 3.4.4 and 3.6.1.1.2).

FUNCTION	PREPARATION	COMPLETION	STORAGE	DISPOSITION
Gather graduate feedback data to validate training effectiveness. Used to update the Task Table.	OTD team	Field Supervisor	Filed by class and by student last name in Graduate Evaluation File kept by OTD team.	Destroyed after one year from return date.

The OTD team will develop the F-16 "B" Graduate Evaluation Questionnaire, have it approved, and mail copies of it to field supervisors of recent graduates IAW AFR 50-38.

5.3.2 Forms for operating course

Some course operation forms will be used for checking training materials in and out of LC storage. The remainder will be used for other purposes.

5.3.2.1 Forms used for checkout

The Student Checkout Log, Instructor Checkout Log, and AF Form 614 (Charge Out Record) will be used to check training and measurement materials in and out of LC storage.

5.3.2.1.1 Student Checkout Log

(See paragraphs 3.4.1.2 and 3.4.1.3).

FUNCTION	PREPARATION	UPDATING	STORAGE	DISPOSITION
Track student usage of non-classified LC training and measurement materials.	LCO	Student and LCO	LC issue desk.	Each page destroyed after three months.

STUDENT CHECKOUT LOG

DATE 7 May 80

NAME	IDENT	ITEM(S)	OUT	IN	LCO
Williams	ST 110		8:05		
Benson	WS 107	Slide tray	8:20	8:55	J B
Bowan	—	-1, -34	8:35		
Thomas	WS 107	Quiz	8:56		

DIRECTIONS:

1. LCO prepares a new page of the Student Checkout Log when the LC opens for another day by writing t date.

2. Student or LCO enters 1) the student's name, 2) the lesson or exam identifier, if applicable, and item(s) that are being checked out, and 3) the time whenever a student checks out nonclassified LC study materials or a test.

3. LCO writes the time and his initials whenever a s udent checks something back in.

5.3.2.1.2 Instructor Checkout Log

(See paragraphs 3.4.1.2.2 and 3.4.1.3).

FUNCTION	UPDATING	STORAGE	DISPOSITION
Track instructor usage of non-classified LC training and measurement materials.	AIP	LC issue desk.	Each page destroyed after three months.

DIRECTIONS:

1. LCO makes sure that a wholly or partially blank page of the Instructor Checkout Log is available when the LC opens for another day.

2. AIP enters 1) his name, 2) the lesson or exam identifier, if applicable, and item(s) that are being checked out, and 3) the date whenever he checks out nonclassified LC study materials, tests, and/or scoring keys.

3. AIP enters the date and his initials whenever he checks something back in.

5.3.2.1.3 Charge Out Record (AF Form 614)

(See paragraph 3.4.1.2.1.1.3).

FUNCTION	UPDATING	STORAGE	DISPOSITION
Track usage of LC classified materials.	LCO or AIP	LC Classified Materials Safe.	Destroyed three months after last entry.

INSTRUCTOR CHECKOUT LOG

NAME	IDENT	ITEM(S)	OUT	IN	INITIALS
Tippets	SMI 105	4 transparancies,	2 Apr		
		5 quizzes, scoring key	1980		
Tippets	SMI 106	slide tray, 5 quizzes	2 Apr		
		scoring key			
Rollins	–	-34	2 Apr	2 Apr	BR

DIRECTIONS:

1. LCO makes sure that a wholly or partially blank AF Form 614 (Charge Out Record) is in the front of the LC Classified Materials Safe.

2. LCO or AIP enters the date and identification of the classified item that is being checked out, the name of the person who will be responsible for it, and the date whenever a classified item is checked out of the safe.

3. LCO or AIP crosses out an entry whenever an item is returned to the safe.

5.3.2.2 Forms not used for checkout

The Study Materials Issue Form, Exam Ready List, and AF Form 1256 (Certificate of Training) will not be used to check materials in and out.

5.3.2.2.1 Study Materials Issue Form

See paragraph 3.4.1.1.

FUNCTION	PREPARATION	UPDATING	STORAGE	DISPOSITION
Document issue of study materials to a student.	LCO	LCO and student	Filed by class and student last name in LC Study Materials Issue File.	Destroyed after class has graduated.

DIRECTIONS:

1. LCO prepares a Study Materials Issue Form for each student when he begins the course by writing his name and class designator.

*2. LCO makes an entry on a student's Study Materials Issue Form whenever that student asks to receive the next collection of study materials. This is done by listing all the study materials in the requested collection.

3. Student signs and dates his Study Materials Issue Form whenever he receives a collection of Study Materials.

* This direction would not apply if the list of study materials in each collection were overprinted on the Study Materials Issue Forms.

STUDY MATERIALS ISSUE FORM

Student Gary Bloom Class 80-ABP

I HAVE RECEIVED THE MATERIALS LISTED TO THE RIGHT OF MY SIGNATURE.

25 March 80
Date

Gary Bloom
Signature

FOR TRAINING DAYS 1 — 7

WB 101, 102, 103, 104, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115
WS 101, 102, 103, 104, 105
AS 101, 102, 103, 104, 105, 106, 107, 108, 113, 116, 117
SM 101, 102, 103, 104, 105, 106
Conversion Phase Manual

Date

Signature

FOR TRAINING DAYS _____ — _____

Date

Signature

FOR TRAINING DAYS _____ — _____

5.3.2.2.2 Exam Ready List

(See paragraph 3.4.1.3).

FUNCTION	POSTING	UPDATING	STORAGE	DISPOSITION
Notify students that their exams have been scored.	LCO	LCO	On LC wall where it is visible to all.	Destroyed one week after last row is filled in.

DIRECTIONS:

1. LCO posts an unused Exam Ready List at the beginning of the course and whenever the posted Exam Ready List has been filled.

2. LCO updates the posted Exam Ready List whenever the copies of an exam taken by a class have been scored. This is done by writing the exam identifier, class designator, and date.

5.3.2.2.3 Certificate of Training (AF Form 1256)

FUNCTION	PREPARATION	SIGNATURE	DISPOSITION
Certify satisfactory completion of course.	Squadron secretary	Squadron Commander	One copy to student's CBPO. Original to student at end of course.

DIRECTIONS:

1. Squadron secretary prepares an AF Form 1256 (Certificate of Training) for each graduating student by typing his name, the course's title, the Squadron Commander's name and title, and the graduation date.

2. Squadron Commander signs each prepared AF Form 1256.

5.4 Forms for Measuring the Instructional System

Some of the system centered measurement forms will be discontinued. The others will not.

5.4.1 Temporary forms

The Lesson Critique Form and Interview Form only will be used during the course's infancy.

EXAM READY LIST

EXAM	CLASS	DATE
ST110	80-ABP	6 May 80

5.4.1.1 Lesson Critique Form

(See paragraphs 3.4.1.2, 3.5.1.1, and 3.6.1.2.1).

FUNCTION	COMPLETION	STORAGE	DISPOSITION
Gather student opinions about a lesson. Used to complete a Lesson Critique Tabulation Form.	Student	Filed by class and by lesson in LC Lesson Critique File.	Copy to OTD team. Original destroyed when Chief of Academics directs.

A student completes a Lesson Critique Form whenever he has completed a lesson. This is done by 1) writing the lesson identifier, date, his name and class designator, 2) marking each scale based on his impression of the lesson, 3) explaining the reasons for marking a scale or scales "weak" or "unsat," and, if desired, 4) making other comments about the lesson.

5.4.1.2 Interview Form

(See paragraphs 3.5.1.2 and 3.6.1.2.2).

FUNCTION	COMPLETION	STORAGE	DISPOSITION
Gather instructor and student opinions about the course.	OTD team member	Filed chronologically within two groups, instructor and student, in OTD team's Interview File.	Destroyed after one year.

DIRECTIONS:

1. F-16 training personnel at MacDill AFB schedule interviews with five instructors and five students six months after the course begins there.

2. OTD team member completes an Interview Form during each scheduled interview by 1) writing the date, his name, and the name of the person being interviewed, 2) indicating whether the person being interviewed is an instructor or student, and 3) summarizing the response made to each Interview Form question by the person being interviewed.

5.4.2 Permanent forms

The course critiques and the Suggestion Form will be permanent parts of the course.

LESSON CRITIQUE FORM

Lesson Identifier: WB119 Date: 2 May 80

Student Name: Rosepink Class: 80-ABP

	Excellent	Good	Adequate	Weak	Unsat	Not in lesson
1. Objectives		X				
2. Main Idea		X				
3. Graphics	X					
4. Discussion			X			
5. Practice			X			
6. Quiz				X		

If you checked "Weak" or "Unsat" for any item, explain by number.

6- Combine quiz items 2 and 3.

Other comments:

INTERVIEW FORM

Date _____

Interviewer _____

Interviewee (circle one) Instructor Student

1. CAN YOU TELL ME ANY AREA OF CONCERN THAT YOU HAVE ABOUT THE COURSE OR THE WAY IT IS RUN?

   (Interviewer note: Pay particular attention to those areas not covered in other evaluation forms. For example, system breakdowns, not technical errors in lessons.)

2. IF YOU COULD CHANGE ANY ONE THING ABOUT THIS TRAINING SYSTEM, WHAT WOULD IT BE?

   (Int: Make note of the "one" thing and encourage more if the respondent has others.)

3. IF EVERYTHING IN THE COURSE WERE TO BE ELIMINATED OR REPLACED, WHAT ONE THING WOULD YOU KEEP ABOVE ALL ELSE?

5.4.2.1 Course critiques

(See paragraphs 3.5.2.1 and 3.6.1.2.2).

FUNCTION	COMPLETION	STORAGE	DISPOSITION
Gather student opinions about the course. Used to complete a Course Critique Tabulation Form.	Student	Filed by class and by student last name in the OTD team's Course Critique File.	Copy to Chief of Academics. Copy to OTD team. Original to TAC. OTD team's copy destroyed after one year.

DIRECTIONS:

1. LCO distributes copies of the Mid-Course Critique to all the students in a class when it is about halfway through the course. LCO distributes copies of End-of-Course Critique near the course's conclusion.

2. Student completes the course critique within a week by 1) writing the date and his name, class, course, wing, base, and organization and 2) responding to each critique item.

3. Student gives the completed course critique to a LCO within a week from when he received it.

MID-COURSE CRITIQUE

Name _____ Class _____ Date _____
Last First MI

_____

Course _____ Wing _____ Base _____ Organization _____

The purpose of this critique is to identify areas of the F-16 training program that have notable strengths and/or weaknesses. Your evaluation of the training you received is solicited to assist training managers of this course and higher headquarters in making the training program more meaningful and responsive to student needs.

Your critique will be analyzed by local course managers and then forwarded to HQ TAC/DOOS. HQ TAC will analyze all the critiques sent to it from courses throughout the command. The resulting data will allow HQ TAC and subordinate agencies to assess the effectiveness of all TAC training.

PART I

INSTRUCTIONS:

In Part I you are asked to respond to a series of statements by indicating your degree of agreement with each statement or the frequency of occurrence of the event it describes. If the statement does not apply to your experience, mark "Not Applicable" (6). Record your answer on the answer sheet by blotting out one of the numbers. For any statement you mark 1, 2, or 3, please comment on specifics.

Frequency/Agreement Definitions

Frequency:	Never	Seldom	1/2 the time	Usually	Always	
	(1)	(2)	(3)	(4)	(5)	(6)
Agreement:	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Not Applicable

---

EXAMPLE

1. Your instructor was able to explain complex problems in terms you could understand.

(1) (2) (3) (4) (5) (6)

Comment: Instructor X has trouble communicating because he assumes the student knows more than he does.

Never (1) Strongly Disagree	Seldom (2) Disagree	1/2 the time (3) Undecided	Usually (4) Agree	Always (5) Strongly Agree	(6) Not Applicable

1. Instruction is standardized among instructors.

   (1) (2) (3) (4) (5) (6)

   Comment: _____

   _____

2. The Accounting and Finance Office at this base is providing services you require during training.

   (1) (2) (3) (4) (5) (6)

   Comment: _____

   _____

3. Academic and flying training are appropriately sequenced.

   (1) (2) (3) (4) (5) (6)

   Comment: _____

   _____

4. Your written examination scores are valid measures of your learning.

   (1) (2) (3) (4) (5) (6)

   Comment: _____

   _____

5. Your instructors are a positive influence on your attitudes toward this course.

   (1) (2) (3) (4) (5) (6)

   Comment: _____

   _____

Never (1) Strongly Disagree	Seldom (2) Disagree	1/2 the time (3) Undecided	Usually (4) Agree	Always (5) Strongly Agree	(6) Not Applicable

6. During in-processing you received adequate information about this base and its services.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

7. The instructional activities follow a logical sequence.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

8. Your Stan/Eval check ride evaluated only those tasks taught in your course.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

9. Your instructors are willing to provide additional help when you need it.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

10. The availability of base dining facilities is compatible with your training schedule.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

Never (1) Strongly Disagree	Seldom (2) Disagree	1/2 the time (3) Undecided	Usually (4) Agree	Always (5) Strongly Agree	(6) Not Applicable

16. You received adequate ground training for each flight.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

17. Performance evaluations are standardized among the instructors.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

18. Aircraft maintenance reliability is adequate for the success of each mission.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

19. For lessons using mediated instruction, each selected medium seems appropriate for the subject.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

20. Most written examinations actually measure your mastery of the learning objectives being tested.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

PART II

Answer the questions below as specifically as possible. Use the back if necessary to be as detailed as you wish.

1. What elements of this training program are most frustrating to you?

2. Other than flying, what elements of this program are most rewarding to you?

3. From what elements do you feel you are learning the most?

4. From what elements do you feel you are learning the least?

5. If your best friend were coming out of FLIT into this training program, what advice would you give him on coping with this training system?

END-OF-COURSE CRITIQUE

Name _____ Class _____ Date _____
Last First MI

_____

Course _____ Wing _____ Base _____ Organization _____

The purpose of this critique is to identify areas of the F-16 training program that have notable strengths and/or weaknesses. Your evaluation of the training you received is solicited to assist training managers of this course and higher headquarters in making the training program more meaningful and responsive to student needs.

Your critique will be analyzed by local course managers and then forwarded to HQ TAC/DOOS. HQ TAC will analyze all the critiques sent to it from courses throughout the command. The resulting data will allow HQ TAC and subordinate agencies to assess the effectiveness of all TAC training.

PART I

INSTRUCTIONS:

As with the previous critique, in Part I you are asked to respond to a series of statements by indicating your degree of agreement with each statement or the frequency of occurence of the event it describes. If the statement does not apply to your experience, mark "Not Applicable" (6). Record your answer on the answer sheet by blotting out one of the numbers. For any statement you mark 1, 2, or 3, please comment on specifics.

Frequency/Agreement Definitions

Frequency:	Never	Seldom	1/2 the time	Usually	Always	
	(1)	(2)	(3)	(4)	(5)	(6)
Agreement:	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Not Applicable

---

EXAMPLE

1. Your instructor was able to explain complex problems in terms you could understand.

   (1) (2) (3) (4) (5) (6)

   Comment: Instructor X has trouble communicating because he assumes the student knows more than he does.

Never (1) Strongly Disagree	Seldom (2) Disagree	1/2 the time (3) Undecided	Usually (4) Agree	Always (5) Strongly Agree	(6) Not Applicable

1. Instruction was standardized among instructors.

   (1) (2) (3) (4) (5) (6)

   Comment: _____

   _____

2. The Accounting and Finance Office at this base provided services you require during training.

   (1) (2) (3) (4) (5) (6)

   Comment: _____

   _____

3. Academic and flying training were appropriately sequenced.

   (1) (2) (3) (4) (5) (6)

   Comment: _____

   _____

4. Your written examination scores were valid measures of your learning.

   (1) (2) (3) (4) (5) (6)

   Comment: _____

   _____

5. Your instructors were a positive influence on your attitudes toward this course.

   (1) (2) (3) (4) (5) (6)

   Comment: _____

   _____

Never (1) Strongly Disagree	Seldom (2) Disagree	1/2 the time (3) Undecided	Usually (4) Agree	Always (5) Strongly Agree	(6) Not Applicable

6. During in-processing you received adequate information about this base and its services.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

7. The instructional activities followed a logical sequence.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

8. Your Stan/Eval check ride evaluated only those tasks taught in your course.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

9. Your instructors were willing to provide additional help when you needed it.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

10. The availability of base dining facilities was compatible with your training schedule.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

Never (1) Strongly Disagree	Seldom (2) Disagree	1/2 the time (3) Undecided	Usually (4) Agree	Always (5) Strongly Agree	(6) Not Applicable

11. The pace of instruction seemed about right.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

12. Instructors kept you informed of your progress.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

13. Your personal medical needs were met by the USAF Hospital at your training base.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

14. Instructional materials (e.g., slide-tape programs) were available from the learning center when you needed them.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

15. The overall length of your course seemed about right.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

AD-A099 830 COURSEWARE INC SAN DIEGO CALIF F/G 5/9
F-16 IMPLEMENTATION AND MANAGEMENT. PLAN REPORT.(U)
MAR 81 W C WILCOX, W J MCNABB, D R FARROW F02604-79-C-8875
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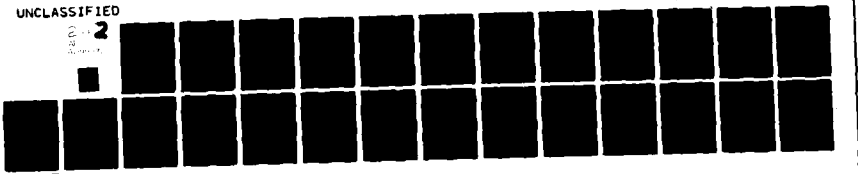

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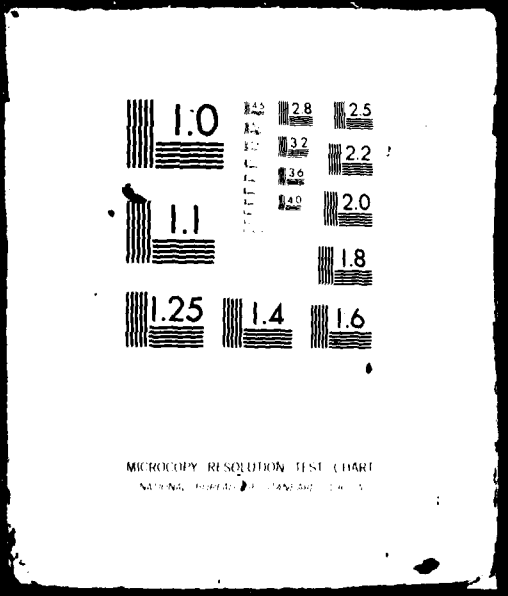

Never (1) Strongly Disagree	Seldom (2) Disagree	1/2 the time (3) Undecided	Usually (4) Agree	Always (5) Strongly Agree	(6) Not Applicable

16. You received adequate ground training for each flight.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

17. Performance evaluations were standardized among the instructors.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

18. Aircraft maintenance reliability was adequate for the success of each mission.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

19. For lessons using mediated instruction, each selected medium seemed appropriate for the subject.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

20. Most written examinations actually measured your mastery of the learning objectives being tested.

(1) (2) (3) (4) (5) (6)

Comment: _____

_____

PART II

Answer the questions below as specifically as possible. Use the back if necessary to be as detailed as you wish.

1. What elements of this training program were most frustrating to you?

2. Other than flying, what elements of this program were most rewarding to you?

3. From what elements do you feel you learned the <u>most</u>?

4. From what elements do you feel you learned the <u>least</u>?

5. If your best friend were coming out of FLIT into this training program, what advice would you give him on coping with this training system?

5.4.2.2 Suggestion Form

See paragraphs 3.5.2.2 and 3.6.1.2.2.

FUNCTION	COMPLETION	STORAGE	DISPOSITION
Gather student suggestions for improving the course.	Student	Filed by class in LC Suggestion File.	Copy to OTD team. Destroyed after one year.

DIRECTIONS:

1. Student obtains a Suggestion Form from a LCO.

2. Student completes the form by 1) writing the date and his name and class designator, 2) indicating whether the suggestion pertains to academics, flying, or administration/support, and 3) describing the problem and its solution.

3. Student gives the completed Suggestion Form to a LCO.

5.5 Forms for Revising the Course

Revision forms will be used to analyze data from student measures or system centered measures.

5.5.1 Forms for analyzing student data

Students will be measured with written tests, grade slips, and the P-16 "R" Graduate Evaluation Questionnaire.

5.5.1.1 Forms for analyzing test data

OTD Team personnel will use the Item Table and the Item Summary Table to perform the test item analysis (paragraph 3.6.1.1.1).

5.5.1.1.1 Item Table

See paragraph 3.6.1.1.1.

FUNCTION	PREPARATION	UPDATING	STORAGE	DISPOSITION
Tabulate number of students who correctly and incorrectly responded to each test item. Used to complete Item Summary Table.	OTD team	OTD team	Front of OTD team's Test File.	Destroyed if test item analysis is discontinued.

SUGGESTION FORM

NAME: _____ CLASS: _____ DATE: _____

This suggestion applies to (check one) Academics ___; Flying ___; Admin/Support ___.

PROBLEM: (State the problem as clearly as possible including most serious negative consequences.)

SOLUTION: (State how the problem can be overcome or improved. Be specific.)

DIRECTIONS:

1. OTD team prepares the Item Table by writing each test item's lesson identifier (e.g., WB101) and item designator (e.g., B5). An item designator consists of a letter and number. The letter indicates the objective associated with that item.

2. OTD team uses the scored tests to update the Item Table once a month. For each student's scored quiz, exam, or alternate exam, the process of updating the Item Table is as follows:

   a. Make sure that there is no check mark in the bottom right-hand corner of the test's first page. If there is a mark, that test is skipped.

   b. Place a tally mark for each test item in the appropriate area of the Item Table.

      Each test item that has been revised will be accompanied by a revision number after its item designator. For instance, a test item with "(C4:3)" printed beside it is the third version of item C4. In other words, item C4 has been revised twice.

      Examples:

      (1) If a quiz item with "(A9)" next to it were missed, a tally mark would be placed opposite the item designator 'A9' in the "Version 1," "Incorrect" column as shown below.

ITEM DESIG'TR	Version 1 Incorrect	Version 1 Correct
A9	I	

      (2) If an exam item with "(WB101, D2:2)" next to it were not missed, a tally mark would be placed opposite the lesson identifier "WB101" and the item designator 'D2' in the "Version 2" "Correct" column as shown below.

LESSON	ITEM DESIG'TR	Version 1 Incorrect	Version 1 Correct	Version 2 Incorrect	Version 2 Correct
WB101	D2	IIII III	IIII		I

   c. Place a check mark in the bottom right-hand corner of the test's first page.

5.5.1.1.2 Item Summary Table

(See paragraph 5.6.1.1.11.

FUNCTION	PREPARATION	COMPLETION	STORAGE
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

1. [illegible]

2. [illegible]

5.5.1.1.3 [illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ITEM SUMMARY TABLE

DATE

[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]					

DIRECTIONS:

1. OTS team prepares a Task Table for each type of grade slip and for the F-16 'B' Graduate Evaluation Questionnaire. This is done by entering 1) the title of a grade slip (grade slip type) or the questionnaire and 2) all of the mission elements or tasks.

2. OTS team uses the completed grade slips and graduate evaluation questionnaires to update all the Task Tables at least once a month. For each student's graded slip or completed F-16 'B' Graduate Evaluation Questionnaire, the process of updating the corresponding Task Table is as follows.

   a. [illegible]

   b. [illegible]

   c. [illegible]

      For a grade slip:

      [illegible]

      [illegible]

      For F-16 'B' Graduate Evaluation Questionnaire:

      [illegible]

      [illegible]

      Example:

      [illegible]

   d. [illegible]

TASK TABLE

Title: _____

[illegible]	[illegible]	[illegible]

5.5.1.2.2 Task Summary Table

(See paragraph 3.6.1.1.2).

FUNCTION	PREPARATION	COMPLETION	STORAGE
Identify "sus-picious" task items.	OTD team	OTD team	Chronologically filed in Task Summary Table Folder in OTD team's Task File.

DIRECTIONS:

1. OTD team prepares a Task Summary Table for each type of grade slip and for the F-[illegible] '[illegible]' Graduate Evaluation Questionnaire at least once every two months. This is done by entering 1) the date, 2) the title of the grade slip or the questionnaire, and 3) all of its mission elements or tasks.

2. OTD team uses the Task Tables to complete a set of prepared Task Summary Tables at least once every two months 1) by entering the number of students who were graded on each mission element or task and the number of students who received passing grades for each mission element or task, 2) by calculating and entering the percentage of students who received passing grades for each mission element or task, and 3) by [illegible] each value of the "% Passed" column that does [illegible].

5.5.2 Forms for Analyzing System Data

The System Changes Evaluation Form and the Course [illegible] Changes Evaluation Form will be used to analyze [illegible] changes [illegible].

5.5.2.1 System Changes Evaluation Form

(See paragraph 3.6.[illegible])

FUNCTION	COMPLETION	STORAGE
Determine "effectiveness" of system changes	OTD team	Filed by [illegible] in OTD team's System Changes file.

[illegible]

TASK SUMMARY TABLE

Date: ____________ **Title:** ______________________

MISSION ELEMENT (TASK)	Number of Tasks Graded	Number of Tasks Passed	% Passed

DIRECTIONS:

For each of the first two classes at Hill AFB, OTD team uses the completed Lesson Critique Forms to complete a Lesson Critique Tabulation Form for each lesson. The process of completing a Lesson Critique Tabulation Form is as follows:

1. Write the lesson identifier, class designator, and date.

2. Alphabetically list all the students in the class down the left-hand column.

3. Enter each student's response to each critique item.

   Excellent - Enter 5
   Good - Enter 4
   Adequate - Enter 3
   Weak - Enter 2
   Unsat - Enter 1
   Not applicable (NA) - Enter X

* *

Explanation of symbols:

n = number of responses to a critique item

Σx = sum of responses to a critique item

Σx^2 = sum of squared responses to a critique item (e.g., if the responses were 3, 2, 5, and 2, the squared responses would be 9, 4, 25, and 4 and the Σx^2 would be 42).

* *

4. Enter the n value of each critique item.

5. Enter the Σx value of each critique item.

6. Enter the Σx^2 value of each critique item.

7. Enter the mean ($\bar{x}$) of each critique item.

$$\bar{x} = \frac{\Sigma x}{n}$$

LESSON CRITIQUE TABULATION FORM

STUDENTS	RESPONSE ITEM					
	1	2	3	4	5	6
n						
$\sum X$						
$\sum X^2$						
$\bar{X}$						
S.D.						
T.S.						
df						

LESSON IDENTIFIER_____CLASS_____DATE _____

8. Enter the standard deviation (S.D.) of each critique item less than 4.0.

$$S.D. = \sqrt{\frac{n\Sigma x^2-(\Sigma x)^2}{n(n-1)}}$$

9. Enter the test statistics (T.S.) of each critique item less than 4.0.

$$T.S. = \frac{\bar{x} - 4.0}{S.D./\sqrt{n}}$$

10. Enter the degrees of freedom (df) of each critique item less than 4.0.

$$df = n - 1$$

11. Circle with a colored pen each critique item T.S. whose absolute value is greater than the t-distribution value (p=.75) for its df. The t-Distribution Table (p=.75) is on p.107.

5.5.2.2 Course Critique Tabulation Form

See paragraph 3.6.1.2.2.

FUNCTION	COMPLETION	STORAGE
Identify "suspicious" parts of the course.	OTD team	Filed chronologically in Mid-Course or End-of-Course section of OTD team's Course Critique File.

DIRECTIONS:

For each class, OTD team uses the completed Mid-Course Critiques to complete a Course Tabulation Form and the completed End-of-Course Critiques to complete another Course Tabulation Form. The process of completing a Course Critique Tabulation Form is as follows:

1. Write the class designator.

2. Indicate whether Mid-Course or End-of-Course Critiques are being analyzed.

3. Alphabetically list all the students in the class down the left-hand column.

4. Enter each student's response to each critique item.

* *

Explanation of symbols:

n = number of responses to an item

Σx = sum of responses to an item

Σx^2 = sum of squared responses to an item (e.g., if the responses were 3, 2, 5, and 2, the squared responses would be 9, 4, 25, and 4 and the Σx^2 would be 42).

* *

5. Enter the n value of each critique item.

6. Enter the Σx value of each critique item.

7. Enter the Σx^2 value of each critique item.

8. Enter the mean ($\bar{x}$) of each critique item.

$$\bar{x} = \frac{\Sigma x}{n}$$

9. Enter the standard deviation (S.D.) of each critique item less than 4.0.

$$\text{S.D.} = \sqrt{\frac{n\Sigma x^2 - (\Sigma x)^2}{n(n-1)}}$$

10. Enter the test statistic (T.S.) of each critique item less than 4.0.

$$\text{T.S.} = \frac{\bar{x} - 4.0}{\text{S.D.}/\sqrt{n}}$$

COURSE CRITIQUE TABULATION FORM

STUDENTS	RESPONSE ITEM																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
n																				
$\sum X$																				
$\sum X^2$																				
$\bar{X}$																				
S.D.																				
T.S.																				
df																				

MID–COURSE CRITIQUE END–OF–COURSE CRITIQUE CLASS_____DATE_____

(Circle One)

11. Enter the degree of freedom (df) of each critique item less than 4.0.

$$df = n - 1$$

12. Circle with a colored pen each critique item T.S. whose absolute value is greater than the t-distribution value ($p = .75$) for its df. The t-Distribution Table when $p = .25$ is as follows:

df		df		df	
1	1.000	11	.697	21	.686
2	.816	12	.695	22	.686
3	.765	13	.694	23	.685
4	.741	14	.692	24	.685
5	.727	15	.691	25	.684
6	.718	16	.690	26	.684
7	.711	17	.689	27	.684
8	.706	18	.688	28	.683
9	.703	19	.688	29	.683
10	.700	20	.687	30	.683

6.0 MANAGEMENT SYSTEM CRITERIA

The purpose of this section is to list and describe the major criteria used to evaluate the adequacy of any instructional management system, and to specify how the system described in this document measures up to each criterion. The focus of discussion is upon those elements of the system which will be most drastically altered by the implementation of the proposed system. In many cases it was not considered practical to modify existing procedures.

When evaluating the proposed management system utilizing the criteria described, it becomes apparent that the system suffers numerous limitations. This reflects not so much the deficiencies of this particular form-driven system relative to others, as it does the deficiencies of any form-driven system relative to a computer-driven system. The contractor and the operational training development team both argued strongly for a computer managed system (Development Report No. [illegible], "Management System Needs and Design Concept Analysis," Development Report No. [illegible], "Recommendations for the F-16 Performance Measurement System," Development Report No. [illegible], "Computer Managed Instruction of the F-16 Training Program"), but were directed by TAC headquarters to develop a form-driven rather than a computer-managed system. This constraint precluded the development of a sophisticated system that would rate impressively against many of the criteria. Instead, it argued for maintaining current management procedures in a wide area of related functions. This section is designed to supplement, but not to duplicate, information reported in Development Report No. [illegible], "F-16 Training Management System Needs and Design Concept Analysis."

6.1 Summary of Criteria

The primary criteria for the evaluation of a management plan are as follows:

1. Cost effectiveness
2. Accessibility of information
3. Flexibility
4. Simplicity
5. Responsiveness
6. Relevance to constraints
7. Personnel tracking capability
8. Standardization
9. Resource utilization optimization
10. Self-monitoring capability

6.2 Management System Criteria

The five criteria are defined below in addition to the specific needs of an instructional management system. Section 6.3 will evaluate each of these five aspects of the proposed management program.

1. Cost effectiveness refers to the amount of benefit derived from the utilization of a particular management system relative to the cost of such utilization. It is usually expressed in terms of a ratio (a benefit/cost ratio), and should be used to compare the relative worth of alternative systems. In the case of the [illegible] program, this involves the costs of development, implementation, and maintenance of a management system relative to the benefits accruing to all of the organizations listed in Section 2.0 of this report.

2. Information accessibility refers to the ease with which any user of the system may obtain any information that is resident within the system. This also suggests the importance of comprehensiveness and redundancy. The system must allow for the storage of an extremely large amount of information. That information should be stored in more than one place or format to [illegible] as well as to make the same data available to different individuals for different purposes. A [illegible] should not be required, for example, to wade through the amount of detail required by the [illegible] in performing their functions when the function requires only summary data.

3. Flexibility refers to the system's ability to store, process, and retrieve a broad range of information from different sources, and to apply it to a broad range of different decision-making contexts. This also suggests the importance of adaptability, which refers to the ease with which the system may be modified to accept new types of information or information formats.

4. Simplicity refers to the ease with which users may retrieve useful information from the management system. Managers should not have to receive elaborate training, follow complex procedures, or engage in time-consuming activities simply to derive management information from the system. The system should be designed with the needs and capabilities of the users in mind.

5. Responsiveness refers to the ability of the system to accommodate changing input parameters that may be generated internally (e.g., by validation results of student critiques) or externally (e.g., by changing hardware configurations or tactics). A change in an input parameter should result rather directly in a

[illegible]

- [illegible]

- [illegible]

- [illegible]

[illegible]

[illegible]

[illegible]

6.3 Evaluation of Proposed Management System Relative to Identified Performance Criteria

[illegible]

1. Cost Effectiveness

Cost effectiveness is a measure of relative value which means that the most benefit ratio of the proposed system can be judged good or bad only in comparison to the cost benefit ratio of a competing or alternative system. Under the constraints of this contract, the only alternate instructional management system available for comparison is the standard Air Force system now in effect. The proposed system does not deviate from the standard system sufficiently to suggest a significant difference in cost benefit ratios. The proposed system offers a slight improvement to existing procedures, nothing more.

The proposed management system has its greatest impact on academic training which represents the least expensive aspect of the training syllabus. The scheduling and utilization of aircraft and trainers, areas in which significant cost savings may be realized, have been essentially left unchanged. The contractor's

proposed computerized management system would have eliminated the scheduling and evaluation of training with additional [illegible] the overall implementation of the [illegible] system, and would have resulted in an improved cost effectiveness. It is [illegible], however, to expect a significant increase in cost effectiveness by the mere automation of the [illegible] management system for [illegible].

2. Accessibility of Information

The proposed system offers a far more extensive array of useful information than the existing system in terms of comprehensiveness, timeliness and accessibility. First, the proposed system collects, stores, and displays more student and system performance data. Consequently, it provides the user with more information for decision making. Second, data is available from more than one source. The duplication of information within the [illegible] system, [illegible], and [illegible] not only [illegible] information is [illegible] for [illegible], but that users at different levels have access to different levels of information. [illegible] information is [illegible] different [illegible], users have [illegible] access to the particular level of information they are most likely to require.

3. Flexibility

The proposed management system represents an increased degree of flexibility over the old system by increasing not only the types and amounts of information collected, analyzed, and processed, but also the type and number of functions that can be improved by utilizing that information. Under the old system, for example, information could be collected on the effectiveness of a single lesson or course. Under the proposed system, information can be collected on the effectiveness of each individual objective within a course or lesson. Consequently, modification can now be aimed at specific areas of weakness within a presentation, rather than at the entire lesson. In terms of adaptability, the proposed system is on a par with the old system.

4. Simplicity

The proposed system rates as well as the old system on the simplicity criterion. Simplicity refers to ease of access by the user, not necessarily by the clerk who must search the files. The clerk who enters and retrieves system information will require training and experience while the user group of instructor pilots and managers should not. This is characteristic of most form-driven management systems and is not viewed as a liability.

5. [illegible]

[illegible]

6. [illegible]

[illegible]

7. [illegible]

[illegible]

8. Standardization

Standardization is one of the strongest benefits recommending the use of the proposed system. The old system provides few controls over the content provided to the

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

6.4 Summary

In summary, the proposed instructional management system represents a reliable improvement over the old system it is intended to replace, but does not begin to significantly impact tasks in what is a computer managed system. The new system represents an extension or modification of the old approach rather than something entirely new. Its effects are, for the most part, limited to F-16 avionics, and hardly begin to impact F-16 flight training. It represents a small step in the right direction, but only an automated computer based system could do the job right.


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