ESL
A Subsidiary of TRW

TRW

FBIS

TRAINING PLAN
(PRELIMINARY)

In Response to
Contract No.
84X-927700-000
(R.O.M)

1 October 1984

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FBIS

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1.0 INTRODUCTION

This document is intended to define a proposed training strategy for the FBIS program. The strategy is based on the best available information and therefore offers a preliminary training concept. In addition, schedules, training conditions, special requirements and the like are all based on the data as presented in this document. As with all proposals at this level, further definition and data will reshape and refine the proposed methodologies and presentations.

Because the nature of the training to be provided is highly technical and people learn differently, a mixture of training media is proposed. Cognitive information can be provided through video tapes, lectures, and demonstrations. Performance oriented information can be provided through self-paced workbooks, "hands-on" classroom activities, and other job aids. The more types of learning opportunities a trainer can provide, the more effective a training program will be.

Many methodologies could be applied to the training problem. Some of these training methodologies may be more applicable and, in time, more practical. As more information becomes available, these methodologies may prove to be better than those selected and proposed here. The logistics group is open to change, especially when that change provides desirable, effective, and cost efficient alternatives to traditional training and training materials.

2.0 OVERVIEW

2.1 SPECIAL CONSIDERATIONS

The following special considerations will be taken into account during the development of the training plan and program as well as while conducting training:

Technical Expertise/Experience of the User
English Language Competency
Effects of Culture upon New Technology Acquisition
Introduction of New Technology and Management of Change
Operational Limitations
Travel to Training Sites

2.1.1 TECHNICAL EXPERTISE/EXPERIENCE OF THE USER

Since the student groups will come from a wide variety of cultures and backgrounds and may have limited experience with computer assisted processing systems, training materials will be written at a level that will enable the first-time user to easily get on the system and operate it. The Training Needs Analysis (TNA) will be one of the tools used to identify student level and spectrum of student learning styles. The resultant training materials will be designed to accommodate the spectrum of learning styles and learning backgrounds. They will be self-paced and self-contained so students with greater experience can quickly cover the material, and those students with limited experience can cover the material at a slower pace. The instructor/facilitator will be available to assist those students who are experiencing difficulties so they can complete the course in the allotted time.

2.1.2 ENGLISH LANGUAGE COMPETENCY

Although all training materials will be written in English, it is recognized that English is a second language for much of the student group. This is especially true at the bureau sites. There may be a wide disparity in the ability to comprehend technical materials. Whenever possible, training materials will be written to avoid use of low-frequency English idioms and highly technical jargon. Use of jargon will be kept at a minimum and training materials will include appropriate glossaries that will define important terminology.

To further minimize the effects of wide disparity of English language competency, training materials will concentrate on performace oriented activities. Theoretical information, especially in operations courses will be kept at a minimum. This will focus the student's attention on doing as opposed to talking about the system.

Emphasis will be placed on visual imagery to reduce the effects of language on the learning process. Since a picture is worth a thousand words, whenever possible, visuals will replace text. There will be maximum use of video tapes, view graphs, slides, drawing, and other visuals.

2.1.3 EFFECTS OF CULTURE UPON NEW TECHNOLOGY ACQUISITION

It is recognized that there may be cultural factors that can contribute to a resistance to change. Training materials will be designed to be "user friendly." Additionally, training materials will be designed to provide as much student interaction as possible. Training materials will be designed for ease of use, thereby minimizing one reason for resistance to change.

Training materials will also emphasize how the user fits into the FBIS network. They will show the user how this system modernizes the capabilities of the FBIS network, improves the quality of the product, yet makes work easier.

2.1.4 INTRODUCTION OF NEW TECHNOLOGY

Introduction of new technology into the work-place is a change that requires close management. Supervisory and management personnel need to be made aware of how these acquisitions will often change not only how things are done, but also what is done. New procedures are introduced, new relationships are formed, new policies are written. Often, the composition of the workforce will also change; new people may come into the organization to fill the new jobs created by the new system. Old people may leave the organization because the technology replaces them.

Introducing new technology raises the level of anxiety among its users. Many fears and doubts begin to spring up in the minds of those who are affected by its acquisition. Among them are:

Fear of being replaced
Fear of losing subject expertise
Fear of failure
Fear of looking incapable of learning the new system
Fear of loss of power

For management and supervisory personnel, these fears are compounded due to the visiblity of their position. When new technolgy is introduced in organizations, it is imperative that all personnel feel like they are part of the change. Effective training programs can enhance this feeling by:

Requiring high degree of student involvement
Focusing on the positive aspects of the change
Being sensitive to the learning styles of the user
Being sensitive to the anxieties and concerns of the user
Being written so as to be easy-to-use, thereby making the new technology easy-to-use
Being written to allow the user to digest the training material at their own pace

One of the basic training concepts for the FBIS system modernization will be to minimize the level of apprehension of all potential users of the system. Special emphasis will be given to those management and supervisory personnel who may not have previous experience with computer systems. In most cases, the anxiety and apprehension which surrounds a new technology is far greater than actually sitting down and using it. Training for all users will be designed in such a way as to allow for individual learning styles. The goal is to ensure that each individual's training needs are met. This will aid in making each organizational member part of the change that is going on around them.

Training for management and supervisory personnel will center around being able to get on the new system and use it in a minimum amount of time. Training will include a system overview, performing supervisor specific tasks, how the system improves product quality, and how the system expands and improves operational capabilities.

It is also proposed that training course for supervisory and management personnel include not only the aforementioned system information, but information that will assist them in facilitating the change process. The integration of the new system into the organization, along with complete exploitation of system capabilities will be hastened by including organization development information into the training course curriculum. It is vital that key supervisory and management personnel be trained in these techniques so that they can facilitate the process of change from a manual operation to a computer assisted operation.

2.1.5 OPERATIONAL LIMITATIONS

It is assumed each site will have on-going operations during system installation. Operator training will consist of four hours training per day with the instructor/facilitator to allow for these operational requirements. The remainder of the work-day can be spent on either self-study tasks from the student Practical Exercise (PE) Workbook, or at normal tasks if mission requirements so dictate.

Conducting training four hours per day will also permit the instructional team to train two groups of students during a normal 8 hour work day.

For the larger operational sites, as many as four Operator Training Courses may be required. Depending upon site-specific operational requirements (i.e., 24 hour-a-day operations, mission requirements that are unknown at the present time, etc.) the instructional team may be required to spend more than the scheduled time in order to train all personnel.

2.1.6 TRAVEL TO TRAINING SITES

Since the bureau sites are spread over a wide geographical area, ESL proposes to use two multi-member instructional teams. An instructor may be required to leave one operations site early in order to begin training at a different site. This instructor would conduct introductory portions of the operations courses. The other instructor(s) would conclude training at the previous site and then travel on to meet the initial instructor.

ESL proposes that the instructional team arrive at each site at least two working days prior to the start of each course to allow for course set-up as well as to minimize the effects of air travel over great distances.

2.2 TRAINING NEEDS ANALYSIS

ESL proposes to conduct a Training Needs Analysis (TNA) upon which all training development, materials, and courses will be based. The purpose of the TNA is twofold. First, the TNA will identify the universe of tasks required by each job including any prerequisite skills. Second, the TNA will identify those tasks which are essential to each job. From this set, the TNA will assist the training developers in eliminating all non-essential tasks as well as determining the amount of emphasis the critical tasks will receive in training.

The training schedules and course outlines contained herein are only approximations. Curriculum and schedule information such as course length may change based upon data gathered in the TNA that is unknown at this time.

ESL proposes that the TNA be conducted in three steps.

Documentation Review
Interview of Subject Matter Experts (SMEs)
Observation of Tasks

2.2.1 DOCUMENTATION REVIEW.

A review of any existing vendor documentation (i.e. system manuals, operations and maintenance manuals, schematics, training, training materials, etc) will be conducted to assist in determining the probable focus of the training courses. This review will also be used to determine the applicability and suitablity of these materials for use in the training program.

The documentation review will assist in isolating the essential tasks that will be trained and the probable focus of the each training course. This step also assists the training developers in formulating questions for the interviews with the appropriate subject matter experts.

2.2.2 INTERVIEW OF SUBJECT MATTER EXPERTS

Upon completion of documentation review, appropriate Subject Matter Experts (SMEs) will be interviewed. SMEs are those individuals intimately acquainted with the operation or maintenance of a specific end-item or those operations site personnel who are thoroughly experienced in those jobs performed

at the operations sites. Interviews of operations site personnel will take place during a representative site survey.

The interviews will assist in determining the balance between the amount of cognitive versus performance oriented training that will be conducted. Additionally, the interviews will focus on the step-by-step procedures required to operate and maintain the system.

2.2.3 OBSERVATION OF TASKS

As part of the TNA, ESL proposes to directly observe the tasks required to perform a particular job whenever possible. Observation of routine operator/maintainer tasks will take place during a representative site survey. An assessment of student level will also be made during at that time. Operations and maintenance tasks can be preliminarily validated for accuracy during the development of training materials.

2.2.4 ANALYSIS OF TARGET POPULATION

A specific goal of the subject matter expert interviews and the observation of tasks will be to analyze the student population in the following areas:

English language competency
Technological experience
Adaptability to change

2.2.5 TNA REVIEW AND VERIFICATION

Copies of the TNA will be submitted to the customer for comments and review prior to developing training materials and conducting training.

ESL will verify the TNA and validate course materials for the maintenance course during the training to be conducted at the test-bed site. Maintenance training will be further reviewed through observations of alpha site maintenance staff. Course materials and the TNA for the operator course will be validated during training at the alpha site. Revision of training materials and course curriculum will be based upon data gathered during course validation.

2.3 INSTRUCTIONAL MATERIALS GENERATION

The Training Needs Analysis (TNA) will determine the extent to which vendor supplied training materials will be adapted to meet the training requirements. All training and course materials will be based upon the results of the Training Needs Analysis (TNA). Manuals and training materials will be prepared in accordance with best commercial practice. Data gathered during the TNA will be catagorized in the following manner:

Critical Tasks
Frequent Tasks
Noncritical/Infrequent tasks

The kinds of training and course materials developed to support a given job task will depend upon its catagory.

2.3.1 CRITICAL TASKS

Critical tasks are those tasks which a failure to perform might lead to loss of life, personal injury, severe damage to equipment, or serious reduction in product quality/output or mission capability. Training and course materials that support critical tasks will be approximately 85 percent performance oriented to 15 percent cognitive. They will focus on the steps and procedures necessary to perform each task.

2.3.2 FREQUENT TASKS

Frequent tasks are those tasks which a failure to perform might lead to reduced product quality/output, reduced mission capability, or increase in the mean-time-to-repair. Training and course materials to support frequent task will be approximately 60 percent performance oriented to 40 percent cognitive.

2.3.3 NON-CRITICAL/INFREQUENT TASKS

Non-critical/Infrequent tasks are those tasks that are performed only rarely. A failure to perform these tasks would have little effect upon mission capability. Training and course materials to support non-critical/infrequent tasks will be approximately 25 percent performance oriented to 75 percent cognitive.

2.3.4 MATERIAL DEVELOPMENT

The following training materials will be developed based upon data gathered during the TNA:

- Instructor guides
- Student guides
- Job aids
- Course outlines
- Practical exercise (PE) workbooks

Vendor materials will be reviewed during the TNA for suitability and applicability to the training program. During the material development stage, materials that are found suitable will be modified to fit the specific needs of the user.

2.3.5 DEVELOPMENT CYCLE

Training and course materials will be subject to the following review cycle:

- Draft/Outline
- Preliminary
- Final

A draft/outline version of training and course materials will be submitted for customer review/comments. A preliminary version of training and course materials will then be used for validation purposes. Revisions will be madeas required and a final version of training and course materials will be delivered to the customer.

2.4 TRAINING TASKS

The ESL supplied FBIS training effort will design, develop, document, implement and present the following training and materials[1]:

Bureau Training:

16 sites including:
- 1 Alpha site
- 3 Beta(1) sites
- 2 Beta(2) sites (Flag ship Bureaus)
- 10 field sites

Operator training for each site including:
- Terminal usage
- Computer overview
- System Basics
- FBIS upgrade overview
- Practical application/ Using the system

Editor training for each site

Supervisor training for each site

System manager training for each site

Manager/administrative overview

Maintenance training to include:
- Terminal maintenance
- Disk/tape drive maintenance
- Processor/computer maintenance
- Peripheral maintenance

Headquarters Training:

System operation overview for the user/analyst

Operation and use of the Data Base for the user/analyst

Data Base maintenance for System Manager

System overview for the manager/administrator

[1] The training as proposed is an approximation developed based on the current training concept, and as such is subject to redefinition by the TNA for content and length.

3.0 BUREAU TRAINING

3.1 TARGET POPULATION

The training will be developed for the following student groups/background levels[2]:

- Operators:
  - Foreign nationals
    - Technology sensitive
    - Technologically average
  - U.S. nationals
    - Technologically average
- Editors:
  - U.S. nationals
    - Technologically average
- System managers:
  - U.S. nationals
    - Technologically average
- Maintainers:
  - Foreign nationals
    - Technologically advanced[3]

3.2 TRAINING

All training will be designed to exploit the sequential nature of system implementation and system commonality. The schedule and number of presentations are given in Section 8 of this document. The courses detailed on the following pages will be implemented for each site's operation staff.

[2] For the purposes of this proposal, all students are assumed to be job skilled; they will already possess the required skills to perform their job and will therefore only require the skills to perform that job on the new system.

[3] The technological background of the maintainers must be fairly advanced for this training. Prerequisite skills/training will be identified as part of the Training Needs Analysis.

3.2.1 OPERATION TRAINING

Operation training will take up the majority of the training task. It will be designed for the above student groups based on the results of the TNA. Operations training includes the bureau courses required to train the:

Operators
Editors
Supervisors
System managers

In addition, it will include an system overview for the administrator/manager. Training will be designed and developed to be largely self-paced to support the wide divergence of student backgrounds and cultures. Self-paced training will also better fit the expected operational requirements at the site allowing the students to learn the new system rapidly while still performing their operational mission. Further, self-paced training will provide the best system for supporting follow-on training for future users.

ESL also proposes to use a series of video tape modules for the major introductory information to be covered for the operator training. All training and training materials will be designed to support follow-on training over the life of the system.

ESL will supply two facilitators per site to implement the training and serve as subject matter experts for the initial training cycle. As shown in Section 8 of this document, the operator, editor, supervisor, and administrator courses will be presented at each site. Where required by staff size or operational necessity, the number of classes taught at each site may be required to change.

3.2.1.1 Operator training outline

The goals of the operator training are:

To give the student an understanding of the new system locally and as a function of the whole.

To give the student an understanding of the purpose and function of the system at the overview level.

To give the student who is a first time user of an automated system an understanding of how the system operates.

To give the student the skills required to operate the system to perform their tasks.

To rapidly get the student on the system and using it.

Class size:	Maximum 10 students per class Maximum 2 classes/day
Instructors:	2 instructor/facilitators
Course Format:	Lecture/demo/self-paced PE 80% supervised/directed self-paced hands on 18% lecture/demo 2% video tape modules
Course length:	2 weeks per class 4 hours/day/class minimum with facilitator 4 hours/day/class self directed or at normal tasks
Course outline:	Introduction/outline Overview Computer basics System basics FBIS system overview Using the terminal Using the system Demo sessions Practical exercises

3.2.1.2 Editor course outline

The goals of the Editor course are:

To provide the editor an overview of the capabilities of the system.

To provide the necessary skills for the editor to use the system to accomplish their job.

Prerequisite:	Successful completion of the operator course
Class size:	Maximum 10 students per class Maximum 1 class/day
Instructors:	2 instructor/facilitators
Course Format:	Lecture/demo/self-paced PE 40% supervised/directed self-paced hands on 60% lecture/demo
Course length:	1 day per class 8 hours/day/class minimum with instructor
Course outline:	Introduction/outline Overview Using the system Lecture/demo sessions Practical exercises

3.2.1.3 Supervisor course outline

The goals of the supervisor course are:

To provide the supervisor an overview of the capabilities of the system.

To provide the supervisor an understanding of the management of change.

To provide the necessary skills for the supervisor to use the system to accomplish their job.

Prerequisite:	Successful completion of the operator course
Class size:	Maximum 5 students per class Maximum 1 class/day
Instructors:	2 instructor/facilitators
Course Format:	Lecture/demo/practical exercise 40% supervised/directed self-paced hands on 60% lecture/demo
Course length:	1 day per class 8 hours/day/class minimum with instructor
Course outline:	Introduction/outline Overview Supervising change Using the system Lecture/demo sessions Practical exercises

3.2.1.4 System manager course outline

The goals of the system manager course are:

To provide the system manager an overview of the capabilities of the system.

To provide the system manager with an understanding of the tasks required to perform the job.

To provide the necessary skills for the system manager to use the system to accomplish their job.

Class size:	Maximum 5 students per class Maximum 1 class/day
Instructors:	2 instructor/facilitators
Course Format:	Lecture/demo
Course length:	1 day per class 8 hours/day/class minimum with instructor
Course outline:	Introduction/outline Overview Using the system Lecture/demo sessions

3.2.1.5 Manager/administrator overview outline

The goals of the manager/administrator overview are:

To provide the manager/administrator with an overview of the capabilities of the system.

To give the manager/administrator an understanding of the new system locally and as a function of the whole.

To give the manager/administrator an understanding of the purpose and function of the system at the overview level.

To give the manager/administrator an understanding of the management of change.

Class size:	Maximum 5 students per class Maximum 2 classes/day
Instructors:	2 instructors
Course Format:	Lecture/demo
Course length:	1 day per class 4 hours/day/class minimum with instructor
Course outline:	Introduction/outline Overview Computer basics System overview FBIS upgrade overview Managing change Demo sessions

3.2.2 MAINTENANCE TRAINING

As shown in Section 8 of this document, the maintenance training will be presented at three sites, with the maintenance staff from the other bureau sites attending. Based on the proposed installation schedule, the alpha, beta(1) and beta(2) site staff would attent the first course. All other maintenance staff would attend one of the courses at the beta(2) sites. In addition to the formal training, the facilitator/instructors will also provide OJT at each of the sites during the operator courses. This OJT will be given simultaneously to the operator training. The maintenance staff would assist in the site installation, receiving additional OJT in the process.

3.2.2.1 Maintenance training outline

The goals of the Maintenance training are:

To give the student an understanding of the new system locally and as a function of the whole.

To give the student an understanding of the purpose and function of the system at the overview level.

To give the student, in accordance with the logistics maintenance concept, the skills required to:

- Operate the system test equipment.
- Test the system.
- Trouble shoot the system to the Line Replaceable Unit (LRU).
- Perform corrective maintenance on the system.
- Restore the system to proper operation.
- Perform preventive maintenance on the system.

Class size:	Maximum 10 students per class Maximum 1 class/day
Instructors:	2 instructors
Course Format:	Lecture/demo/practical exercise 40% self-paced hands on practical exercises 59% lecture/demo 1% video tape modules

PRELIMINARY

Course length: 3 weeks per class
8 hours/day/class minimum
with facilitator

Course outline:

- Introduction/outline
- Overview
- Computer basics
- System basics
- FBIS system overview
- Using the terminal

Lecture/Demo/Practical exercises

- System
- Processor
  - Overview
  - Architecture/Bus structure
  - CPU
  - Memory
  - I/O
  - Power supply
- Terminals
  - Overview
  - Controller
  - Keyboard
  - Power supply
  - Video display
- Peripherals
  - Tape drive/controller
  - Disk drive/controller
- Preventive maintenance
- Testing
  - Use of test equipment
  - Diagnostics
  - System
  - Processor
  - Terminals
  - Peripherals

4.0 HEADQUARTERS TRAINING

The ESL provided training for the headquarters staff will provide the skills necessary for the data base user and system manager to perform their tasks on the system. In addition overviews for users and administrators will be presented. These overviews are intended to provide high level information about the system and its capabilities. The schedule as presented is a train-the-trainer approach to keep the amount of on site time to a minimum. If the entire staff is to be trained, additional sections of the training courses will be required. The overview courses will use the system and FBIS modernization video tapes.

4.1 TARGET POPULATION

ESL will supply training to support the following student groups[4]:

Operators:
U.S. nationals
Technologically average

System managers:
U.S. nationals
Technologically average

Managers:
U.S. nationals
Technologically mixed

4.2 TRAINING

All training will be designed and developed to work with any vendor provided courses for the headquarter's computer system. The schedule and number of presentations are given in Section 8 of this document.

[4] For the purposes of this proposal, all students are assumed to be job skilled; they will already possess the required skills to perform their job and will therefore only require the skills to perform that job on the new system.

4.2.1 SYSTEM OPERATION OVERVIEW FOR THE USER/ANALYST

The goals of the user/analyst system overview are:

To provide the user/analyst with an overview of the capabilities of the system.

To give the user/analyst an understanding of the new system locally and as a function of the whole.

To give the user/analyst an understanding of the purpose and function of the system at the overview level.

Class size:	Maximum 15 students per class Maximum 2 classes/day
Instructors:	2 instructors
Course Format:	Lecture/demo
Course length:	1 day per class 4 hours/day/class minimum with instructor
Course outline:	Introduction/outline Overview System overview FBIS modernization overview Demo sessions

4.2.2 DATA BASE USER TRAINING OUTLINE

The goals of the data base user training are:

To give the student an understanding of the data base in the system.

To give the student an understanding of the purpose and function of the data base at the overview level.

To give the student who is a first time user of an automated system data base an understanding of how it operates.

To give the student the skills required to use the data base to perform their assigned tasks.

To rapidly allow the student to use the data base.

To provide the student the information to train others. example approach to training.

To provide the student an example approach to training others.

Class size:	10 students per class max 2 classes/day max.
Instructors:	2 instructor/facilitators
Course Format:	Lecture/demo/self-paced 70% self-paced hands on supervised/directed 30% lecture/demo
Course length:	1 week per class 4 hours/day/class minimum with facilitator 4 hours/day/class self directed or at normal tasks
Course outline:	Introduction/outline Overview Data base theory Using the data base Demo sessions Practical exercises Training others

4.2.3 DATA BASE MAINTENANCE FOR THE SYSTEM MANAGER COURSE OUTLINE

The goals of the data base maintenance course are:

To provide the system manager an overview of the capabilities of the system.

To provide the student with an understanding of the tasks required to perform the system manager job.

To provide the necessary skills for the system manager to use the system to maintain the data base.

Class size:	Maximum 5 students per class Maximum 1 class/day
Instructors:	2 instructor/facilitators
Course Format:	Lecture/demo
Course length:	3 days per class 8 hours/day/class minimum with instructor
Course outline:	Introduction/outline Overview Maintaining the data base Lecture/demo sessions

4.2.4 MANAGER/ADMINISTRATOR OVERVIEW OUTLINE

The goals of the manager/administrator overview are:

To provide the manager/administrator with an overview of the capabilities of the system.

To give the manager/administrator an understanding of the new system locally and as a function of the whole.

To give the manager/administrator an understanding of the purpose and function of the system at the overview level.

To give the manager/administrator an understanding of managing change.

Class size:	Maximum 5 students per class Maximum 2 classes/day
Instructors:	2 instructors
Course Format:	Lecture/demo
Course length:	1 day per class 4 hours/day/class minimum with instructor
Course outline:	Introduction/outline Overview Computer basics Using the system FBIS modernization overview Managing change Demo sessions

5.0 VIDEO TAPE MODULES

ESL proposes to produce five video tapes to provide information that is expected to be the same at each of the operational sites. The video tapes will be produced in modular form and will be used for basic operator training as well as follow-on training. The modular nature of the tapes gives the user the capability to select any of the video tapes for follow-on or refresher training based upon a need for training within a given subject area. The tapes may be viewed independently to correct a training deficiency, or as a complete series that will provide a general system overview.

All five tapes will be used in the bureau operation and maintenance courses. In addition, the two system video tape modules will be used for the headquarter's overview courses.

The subject of each of the video modules will be stable enough to allow for a long content life cycle. The proposed video tape modules will not exceed approximately 20 minutes in length. The subject matter of the video tape modules will be determined during the TNA, but for the purposes of this proposal the following video modules are proposed.

The proposal is based on using National Television Standards Code (NTSC) standard video, and all of the modules being unclassified.

5.1 USING THE TERMINAL

This module will cover the physical operation of the selected site terminal. Features such as power on/off, brightness, contrast, operator controls and functions, keyboard layout and terminology will be covered. The module will provide the first time user with an easy to follow guide to terminal operation. As follow-on training it can be used as the introduction to the operations course.

5.2 INTRODUCTION TO COMPUTER BASICS

This topic will be covered by two modules. One serves as an introduction and overview of what a computer is and does. The second provides more specific information on terminology, hardware and software basics. The modules are designed to provide the first time computer user with an overview of the computer from a

user's perspective. Included will be the basic terminology as well as descriptions of the function of the various parts of a computer. A discussion of the need for providing accurate and exact commands will also be covered. The modules will provide required introductory material to the operator course.

5.3 INTRODUCTION TO THE PROCESSING SYSTEM

This module will cover the site systems at an overview level. It will include operator interfaces, data flow, storage and functional capabilities. It will show the first time user what is happening to the data they will be entering and using. It will provide the system introductory information for the operator course. This module will also serve as an overview for managers and visitors.

5.4 INTRODUCTION TO THE MODERNIZED FBIS SYSTEM

This module will provide an overview to the modernized FBIS system. It will show the overall system operation and function. It will be used in each of the courses to give the student an understanding of: their part/function in the system; the data flow for the system; the capabilities of the system. It will also serve as a visitor overview of the new system.

6.0 INSTRUCTIONAL MATERIAL OUTLINES

In addition to the video tapes proposed, ESL will also supply training materials for course use. These materials will be designed for initial training and follow-on training over the life of the system based on the outcome of the TNA.

6.1 INSTRUCTOR GUIDES

An instructor guide in outline form will be provided for each course presented. This guide will include:

- A topic outline of the course.
- An outline of the major points to be covered in each topic.
- A course schedule including projected time allocation.
- An overview/outline of each video tape.
- A copy of each view-graph or figure.
- A copy of the material in each student guide.
- A copy of the material in the practical exercise workbook.
- Lesson objectives
- Practical Exercise objectives

6.2 STUDENT GUIDES

Each course will have a student guide prepared. The student guide will include the following:

- Course outline.
- Course goals.
- Topic outline.
- Topic goals.
- Required tasks with:
  - Performance objectives.
  - Procedures.
- Copies of all view-graphs or figures.
- Job aids
- Course evaluations

6.3 PRACTICAL EXERCISE WORKBOOK

Each course which has a hands-on portion will have a Practical Exercise (PE) workbook. This guide will be designed to allow the student to perform the required tasks at their own pace. The tasks in the PE workbook are arrange hierarchically; from the simple to the complex. The student starts with tasks at the lowest level and progress through the levels of complexity until the student has mastered all of the skills required to perform his or her job.

The workbooks are designed to allow their use for follow-on training after the initial training cycle. Each PE workbook includes a series of self examinations which can be used to monitor the students progress. These self tests cover each of the critical tasks required to perform the student's job.

6.4 CERTIFICATES OF COMPLETION

ESL will provide a certificate of completion for each student completing the training courses.

6.5 COURSE EVALUATIONS

Each student will complete a course evaluation. The course evaluations will be included with each student guide. Since the courses will be sequential, the results of these evaluations will be used to monitor training presentation and style.

7.0 MAINTENANCE VIDEO TAPES

During each of the maintenance courses[5] (once for each presentation), ESL will video tape selected lecture/demonstrations. The video tapes will be made of the theory portions covering block diagram analysis, and special interest areas. In addition, those demonstrations which cover special or unique features of the system will be taped. The three sets of tapes will be reviewed and a set of masters selected. These masters will be editied for minor content changes, convenience, practicality and format. Copies of the master tapes will be made and distributed to the sites for refresher and follow-on training. These tapes will be produced using a transfer-of-infromation (TOI) approach. The TOI approach uses a single camera source onto 3/4" video tape. Selected presentations are documented verbatim on a one to one presentation to recorded hour basis. This method documents the theory and unique sections of the course and provides future maintainers a valuable resource.

The proposal is based on using National Television Standards Code (NTSC) standard video, and the modules all being unclassified.

[5] ESL proposes to use three centralized courses to train the site maintenance personnel. The courses will be provided at the test-bed site (one), and the two beta(2) sites (one each).

8.0 SCHEDULE

The following plan is provided as the proposed training implementation schedule. ESL proposes to teach all courses on day watch (8:00 am to 6:00 pm local time) as the standard. Sites requiring other schedules will require special arrangements. Presenting the training during the day has proven better for the student's attention and retention capabilities. ESL proposes to exploit the serial nature of the training to validate the TNA, training and training materials. The maintenance training and training materials will be verified and validated after the first maintenance course at the test-bed site. Further verification will be made by observing the alpha maintenance staff on site. The maintainers will also be evaluated after the beta(1) training. The primary operator course training validation will be after alpha site presentation, with reviews of any changes as well as an overall course review after the beta(1) and beta(2) training. Formal internal reviews will be made including instructor/facilitator evaluations, student evaluations, and customer evaluations and comments.

8.1 PILOT MAINTENANCE TRAINING COURSE

ESL proposes to present the first maintenance course at the test-bed staging site. Since the alpha site, and the three beta(1) sites will all be installed and operating before the beta(2) site maintenance training, ESL proposes to present the pilot maintenance course at this time. This will allow the site maintainers to be pretrained on the system. When the system is installed they will be able to observe and participate in the process. Maintainers from the beta(1) and beta(2) sites[6] sites would attend the training sessions here. In addition to the formal training, the maintainers would receive OJT during the operator courses at each site. They will be able to observe and participate[7] in the installation at each site. The training will be as shown in the following schedule.

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[6] Bringing the beta(2) site maintenance staff to the first course would serve to pre-train them before their system was installed, and since they are the flag ship stations, provide extra training when the system is installed and the course is presented at their site.

[7] If the maintenance staff is pre-trained on the system, they will be able to assist in its installation. This assistance would aid the installation and provide the maintenance staff with additional OJT.

8.1.1 MAINTENANCE TRAINING

This maintenance training will provide the pilot course for verification and validation of the training and materials.

PILOT MAINTENANCE TRAINING

Maintenance training (M)

Preparation (P)

	Week 1							Week 2							Week 3							Week 4						
	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S
AM					P	P			M	M	M	M	M			M	M	M	M	M			M	M	M	M	M	
PM					+	+			+	+	+	+	+			+	+	+	+	+			+	+	+	+	+	
Notes									#	#	#	#	#			#	#	#	#	#			#	#	#	#	#	

+ Indicates a continuation of the morning activity.
# Lecture/demo/presentations and supervised/monitored practical exercises will be used through out the course.

8.2 ALPHA SITE TRAINING

As stated, the alpha site training will validate the TNA and course. The operator portions of the field training will be presented at the site for the first time. This course will also serve to validate the training as developed.

8.2.1 OPERATIONS TRAINING

The following courses will be presented at the alpha site as the pilot versions. They would be scheduled as shown.

ALPHA SITE OPERATOR TRAINING

Operator course (O)
Editor course (E)
Supervisor course (S)
System manager course (M)
Manager/administrative overview (A)

Travel (T)
Preparation (P)

	Week 1							Week 2							Week 3							Week 4						
	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S
AM				T	P	P			O	O	O	O	O			O	O	O	O	O			E	S	M			
PM				+	+	A			o	o	o	o	o			o	o	o	o	o			+	+	+			
Notes									*	*	%	%	%			%	%	%	%	%								

+ Indicates a continuation of the morning activity.
o Indicates a second operators course.
* Lecture/demo/presentations.
% Supervised/monitored practical exercises.

8.2.2 VALIDATION

All of the course material, the original TNA and the course presentations will be verified and validated after the alpha site courses. Direct observations, student comments and evaluations, customer comments and evaluations, and instructor evaluations will be used. The time allocated here is for observation and data gathering.

ALPHA SITE TRAINING VALIDATION

Validation of all training (V)
Preparation (P)
Travel (T)

	Week 4							Week 5						
	S	m	t	w	t	f	S	S	m	t	w	t	f	S
AM					P	P			V	V	V	V	T	
PM					+	+			+	+	+	+	+	
Notes									*					

\+ Indicates a continuation of the morning activity.
* Validation will include interviews observation and customer evaluation at the site.

8.3 BETA(1) SITE TRAINING

8.3.1 OPERATIONS TRAINING

The operations training at the Beta(1) sites will consist of the following courses, in the same order and length as validated at the Alpha site:

BETA(1) OPERATOR TRAINING

Operator course (O)
Editor course (E)
Supervisor course (S)
System manager course (M)
Manager/administrative overview (A)

Travel (T)
Preparation (P)

	Week 1							Week 2							Week 3							Week 4						
	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S
AM				T	P	P			O	O	O	O	O			O	O	O	O	O			E	S	M	T	T	
PM				+	+	A			o	o	o	o	o			o	o	o	o	o			+	+	+	+	+	
Notes				@	@	@			*	*	%	%	%			%	%	%	%	%			@	@	@	@	@	

+ Indicates a continuation of the morning activity.
o Indicates a second operators course.
* Lecture/demo/presentations.
% Supervised/monitored practical exercises.
@ Travel and preparation time may require one or more instructors leave the site early to travel and begin preparations at the next site.

8.3.2 MAINTENANCE TRAINING

In addition to the operations training detailed above, the instructor/facilitators will provide OJT for the maintainers as required.

8.4 BETA(2) SITE TRAINING

8.4.1 OPERATIONS TRAINING

The operations training at the Beta(2) sites will consist of the following courses, in the same order and length as validated at the Alpha site, and reviewed after the Beta(1) sites:

BETA(2) OPERATOR TRAINING

Operator course (O)
Editor course (E)
Supervisor course (S)
System manager course (M)
Manager/administrative overview (A)

Travel (T)
Preparation (P)

	Week 1							Week 2							Week 3							Week 4						
	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S
AM				T	P	P			O	O	O	O	O			O	O	O	O	O			E	S	M			
PM				+	+	A			o	o	o	o	o			o	o	o	o	o			+	+	+			
Notes									*	*	%	%	%			%	%	%	%	%								

+ Indicates a continuation of the morning activity.
o Indicates a second operators course.
* Lecture/demo/presentations.
% Supervised/monitored practical exercises.

8.4.2 MAINTENANCE TRAINING

Maintenance training for the remaining site maintenance staff will be presented in a course at each of the beta(2) sites. This training will be the validated and updated training from the pilot course. In addition to the formal training, the beta(2) site maintenance staff will receive OJT during the operator course.

BETA(2) MAINTENANCE TRAINING

Maintenance training (M)

Preparation (P)

	Week 4							Week 5							Week 6							Week 7						
	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S
AM					P	P			M	M	M	M	M			M	M	M	M	M			M	M	M	M	M	T
PM					+	+			+	+	+	+	+			+	+	+	+	+			+	+	+	+	+	+
Notes									#	#	#	#	#			#	#	#	#	#			#	#	#	#	#	@

+ Indicates a continuation of the morning activity.
# Lecture/demo/presentations and supervised/monitored practical exercises will be used through out the course.
@ Travel and preparation time may require one or more instructors leave the site early to travel and begin preparations at the next site.

8.5 REMAINING SITE TRAINING

8.5.1 OPERATIONS TRAINING

The operations training at the remaining field sites will consist of the same courses, in the same order and length as validated at the Alpha site pilot courses and reviewed after the Beta(1) and beta(2) training:

BUREAU OPERATOR TRAINING

Operator course (O)
Editor course (E)
Supervisor course (S)
System manager course (M)
Manager/administrative overview (A)

Travel (T)
Preparation (P)

	Week 1							Week 2							Week 3							Week 4						
	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S
AM				T	P	P			O	O	O	O	O			O	O	O	O	O			E	S	M	T	T	
PM				+	+	A			o	o	o	o	o			o	o	o	o	o			+	+	+	+	+	
Notes				@	@	@			*	*	%	%	%			%	%	%	%	%				@	@	@	@	

+ Indicates a continuation of the morning activity.
o Indicates a second operators course.
* Lecture/demo/presentations.
% Supervised/monitored practical exercises.
@ Travel and prep time may require an overlap when one or more of the instructors will leave the site to travel and begin preparations at the next site.

8.5.2 MAINTENANCE TRAINING

In addition to the operations training detailed above, the instructor/facilitators will provide OJT for the maintainers as required at each site.

8.6 HEADQUARTERS TRAINING

The training presented at the headquarters facility will consist of the four courses listed below. The two overview courses and the data base user's course will be repeated as required to cover the expected number of participants.

HEADQUARTERS TRAINING

System overview course (O)
Data base user course (D)
Data Base Maintenance for System Manager (M)
Manager/administrative overview (A)

Travel (T)
Preparation (P)

	Week 1							Week 2							Week 3							Week 4						
	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S	S	m	t	w	t	f	S
AM		T	P	P	A	O			D	D	D	D	D			D	D	D	D	D			M	T				
PM		+	+	+	a	o			d	d	d	d	d			d	d	d	d	d			+	+				
Notes																$	$	$	$	$								

+ Indicates a continuation of the morning activity.
a Indicates a second administrator overview.
o Indicates a second system user overview course.
d Indicates a second data base user course.
$ Third and fourth sessions of the Data base user's course.

9.0 ALTERNATE TRAINING OPTIONS

The following options are offered as an adjunct to the FBIS training program.

9.1 OPERATION COURSE VIDEO TAPING.

As an aid in supporting follow-on training for the operations courses, ESL could video tape the lecture/demonstrations for the operator course, editor course, supervisor course, and system manager course in any combination. These tapes can be done at two levels:

Fully scripted training developed specifically for video presentations.
A transfer of information, back of the classroom video documentation.

9.1.1 SCRIPTED VIDEO TRAINING

The more expensive of the options is to script the courses and prepare modularized video tapes of the required information. The tapes would be designed to be used with the PE workbooks, and student guides. As such they would form a training system which would require minimum supervisor/trainer intervention. These tapes would be best developed after the completion of site training to take advantage of the lessons, evaluations and experience of the site training.

The information is concentrated and developed specifically for presentation on video tape. This approach allows the user to select video tapes for specific information, and view only that information. Generally these presentations are of higher production quality, easier to use and provide greater motivation. Graphics and presentation materials are easier to read and use.

These video presentations have more specific information. As such, if there are changes to the system or operations, the tapes will have to be updated to remain useful.

Specific costs, number of lessons/tape modules and content could be developed for this option.

9.1.2 TOI OPERATOR VIDEO TAPES

A less expensive option for producing video training for the sites would be to produce a set of Transfer Of Information modules during the initial training presentations. These would be tapes of selected instructor lecture/demonstrations produced with a single camera at the back of the classroom. As such, the information in them is not as concentrated, the graphics are considerably poorer and as a talking head presentation do not have the motivational value that a scripted version has. They are however, considerably less expensive and with a PE workbook, student guide (with illustrations), instructor preparation and student motivation, they can provide a valuable resource to new students for follow-on training. Specific costs can be developed for this option.

9.2 MAINTENANCE VIDEO COURSES.

As an option ESL can also bid the effort required to design, develop and implement a fully scripted and produced video tape maintenance course. This approach has the same advantages and disadvantages as the scripted version of the operation courses described above. Procedures which are described in a manual which require a series of manual steps can be shown in detail, as they would actually be performed. Any or all of the maintenance lessons can be developed into video tape training modules as part of this option. Costs, requirements and schedule can be developed on request for this option.

9.3 VIDEO PRESENTATION EQUIPMENT

As an option ESL can bid the equipment required to reproduce the video tapes proposed in this training project. Any portion of the equipment can be supplied, as a system or on an individual basis. VCRs, monitors and stands would provide the bulk of the sites with the equipment required for both the operation video tape modules and the maintenance TOI or the optional video training modules for the operation and maintenance courses.

9.4 NON-STANDARD VIDEO FORMATS

ESL can supply the customer with video tapes and equipment with standards other than NTSC for the field sites as required on an optional basis.

9.5 COMPUTER AIDED INSTRUCTION FOR OPERATIONS

As an alternative, ESL can investigate the possibility of using Computer Aided Instruction (CAI) for the operator training. The feasibility of this method of instruction would be based on the system selected, the TNA and schedule. Computer resident and video disk interactive training can be investigated for their applicability to the training requirements of the system.