

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

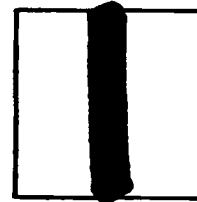
PHOTOGRAPH THIS SHEET

ADA 124214

DTIC ACCESSION NUMBER



LEVEL



INVENTORY

Task 3(a)N Needs Session Outline

Task 4(b) Scenario Format

Task 5(a)N Expected Types of Analysis of Needs

DOCUMENT IDENTIFICATION

Contract F33600-80-C-0414

12 Jun. 80

DISTRIBUTION STATEMENT A

Approved for public release
Distribution Unlimited

DISTRIBUTION STATEMENT

ACCESSION FOR	
NTIS	GRA&I <input checked="" type="checkbox"/>
DTIC	TAB <input type="checkbox"/>
UNANNOUNCED	<input type="checkbox"/>
JUSTIFICATION	
BY <i>Per Ltr. on file</i>	
DISTRIBUTION / AVAILABILITY CODES	
DIST	AVAIL AND/OR SPECIAL
<i>A</i>	

DISTRIBUTION STAMP



DTIC ELECTED

S FEB 8 1983 D

D

DATE ACCESSIONED

88 02 07 107

DATE RECEIVED IN DTIC

PHOTOGRAPH THIS SHEET AND RETURN TO DTIC-DDA-2

C. D. Jones



Columbus Laboratories
505 King Avenue
Columbus, Ohio 43201
Telephone (614) 424-6424
Telex 24-5454

June 12, 1980

ADA 124214

Mr. Coye Bridges, XRBF
DCS/Plans and Programs
Air Force Logistics Command
Wright-Patterson AFB, OH 45433

Dear Coye:

Reference Contract No. F33600-80-C-0414

Enclosed are three deliverables due six weeks after contract award. The related task and title of each deliverable are as follows:

<u>Task</u>	<u>Deliverable</u>
3(a) _N	Needs Session Outline
4(b)	Scenario Format
5(a) _N	Expected Types of Analysis of Needs

Also enclosed is a response prepared by Bill Swager to XRB's comments on "Scenario Approach" delivered under Task 4(a). Please let me know if you require further information.

The progress review on Task 4(a), Scenario Progress Briefing, is scheduled to be presented to Major A. Dunn on June 13 at HQ AFLC. The Task 6(b), LMS Principles Review, is scheduled to be presented to Mrs. M. Rhone/XRBT at Battelle on June 17, 1980.

Please let me know if we need to get together to discuss the deliverables.

Sincerely,

J. Douglas Hill
Research Leader
Defense Systems & Technology Section

JDH:eah

Encs.

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

50 Years Of Service
1929-1979

and Jerry

TASK 3(a)_N: NEEDS SESSION OUTLINE

The following two major sections briefly outline the activities planned for the LMS Policy Planning and LMS Needs Planning Sessions scheduled for July 8-10 and 16-18 respectively.

**OUTLINE OF LOGISTICS MANAGEMENT POLICY
PLANNING SESSION**

Policy Session Objectives

To Be Achieved Through Presentation

- 1) To understand and support the recommended planning approach
- 2) To understand and support the concept of incremental renewal of LMS
- 3) To understand the LAG concept and to accept it as the basis for LMS planning
- 4) To understand the roles of Battelle and AFLC in LMS planning.

**To Be Achieved Through Group
Participation**

- 5) To establish a war-readiness philosophy for LM planning
- 6) To confirm or modify the theme scenarios
- 7) To identify major impacts on logistics operation and LM of the combined theme scenarios and war scenarios
- 8) To establish a logistic management concept
- 9) To evaluate group planning techniques.

Policy Planning Session Agenda

Day 1

- 9:00 - 1) Overview of the 3 day meeting
1000 1.1 Objectives
 1.2 Scope
 1.3 Schedule
 1.4 Expected results

Day 1

- 1000 - 2) Background
- 1200
- 2.1 Past planning studies
 - 2.1.1 BCL activities
 - 2.1.2 Recent and current AF activities
 - 2.2 Interim study (the current planning study)
 - 2.2.1 Where this session fits
 - 2.3 Future directions and activities
 - 2.4 The planning framework (strategic/
directive/operational planes)
- 1300 - 3) Impact of war scenarios
- 1630
- 3.1 Use of scenarios in other organizations
(with examples)
 - 3.2 Specific use of scenarios
 - 3.2.1 The purpose of scenarios
 - 3.2.2 Use of theme scenarios
 - 3.2.3 Use of war scenarios
 - 3.3 Presentation of the group planning
methodology to be used - brainstorming
 - 3.4 Interactive group idea generation
 - 3.4.1 Divide participants into two groups
 - 3.4.2 Assign one war scenario to each group
 - 3.4.3 Each group selects a session recorder
 - 3.4.4 Using Brainstorming, generate a list
of impacts for the assigned war scenario
 - 3.4.5 Assign each impact to the logistics
processes and other perspectives
 - 3.4.6 Review each process or perspective to
add impacts not previously identified
 - 3.4.7 Review each impacted process or perspective
to identify impacts on logistics manage-
ment and logistics management data needs
 - 3.4.8 Reconvene and have session recorder present
findings

Day 1

- 3.4.9 Repeat steps (2) through (8) for another war scenario
- 3.4.10 Combine the impacts identified for all of the war scenarios into a combined impacts package that must be treated under any acceptable logistics management concept.

This process will take more time than is available on the afternoon of the first day. An evening assignment will be made for the participants (depending on where they are in the process). The process will be completed on the morning of the second day.

Day 2

- 0830 - 3B) Complete Session 3
- 1030
- 1030 - 4) Planning philosophy
- 1200
 - 4.1 The use of planning as an approach to defining LMS
 - 4.2 Description of the overall development process
 - 4.3 Implications of the process on organization and resource commitments
- 1300 - 5) Impact of theme scenarios
- 1630
 - 5.1 Theme scenario selection process
 - 5.2 Review and modification of the theme scenarios
 - 5.2.1 The format for the theme scenarios will be explained
 - 5.2.2 Each of the three theme scenarios will be explained
 - 5.2.3 The participants will be asked to respond to AF logistics related descriptors, including the status of the descriptors selected for the scenarios. These will be modified to produce a more believable, relevant set of scenarios
 - 5.3 Review use of the theme scenarios

Day 2

- 5.4 Presentation of the group planning methodology to be used
- 5.5 Interactive group idea generation
 - 5.5.1 Divide participants into two groups
 - 5.5.2 Assign the most likely theme scenario to both groups
 - 5.5.3 Each group selects a session recorder
 - 5.5.4 Using Brainwriting in one group and Nominal Group Technique in the other group, generate a list of impacts of the theme scenarios on AF logistics
 - 5.5.5 Assign each impact to the logistic processes and other perspectives
 - 5.5.6 Review each process and other perspective to add impacts not previously identified
 - 5.5.7 Review each impacted process and other perspective to identify impacts on logistics management data needs. These impacts and data needs must be consistent with the set of impacts identified with the war scenarios.
 - 5.5.8 Reconvene and have session recorder present findings
 - 5.5.9 Assign each of the groups, one of the two remaining theme scenarios.
 - 5.5.10 Repeat steps (3) through (8) except that the group that used Brainwriting for the first scenario should use Nominal Group Technique for their second scenario and vice versa
 - 5.5.11 Identify other descriptors or status of descriptors that would impact the logistics process. Document those as Additional Descriptors and include the impacts from these descriptors in a separate list.
 - 5.5.12 Review the impacts identified for all theme scenarios and additional descriptors and divide them into two sets:
 - (a) Core impacts that are consistent across two or more of the theme scenarios. (These must be provided in any implementation of an LMS).

Day 2

- (b) Potential impacts that are the result of only one of the theme scenarios. (These might not be provided in implementation of an LMS, but must be provided for by the flexibility designed into the LMS.)

This session may also include an evening assignment and will be completed on the morning of day 3.

Day 3

- 0830 - 5B) Complete Session 5
0930
- 0930 - 6) The LAG structure as a framework for future planning
1100
- 6.1 The rationale for LAG's
6.2 The LAG framework
6.3 The use of the framework
6.4 The LAG's selected for the first planning workshops
- 1100 - 7) Outline of a logistics management concept
1200
- 7.1 Definition of an LM concept
7.2 Example of an LM concept
7.3 Use of a completed LM concept
- 1300 - 7B) Completion of the LM concept
1530
- 7.4 Presentation of group planning methodology to be used
7.5 Interactive group idea generation
- 7.5.1 Divide the participants into two groups
7.5.2 The group selects a session recorder
7.5.3 Assign the logistics processes to one group and the other perspectives to the other group
7.5.4 Identify strategic or wartime decisions that must be made for each process or consideration

Day 3

- 7.5.5 For each decision identified, list data needs, analysis requirements, general data sources, and organizational structure to implement decision.
- 7.5.6 Reconvene and have session recorder report results
- 7.5.7 Add elements to the Logistics Management concept.

- 1530 - 8) Summary
- 1630 8.1 Review of actual vs. expected results
- 8.2 Feedback from participants
 - 8.2.1 Process
 - 8.2.2 Results
 - 8.2.3 Future planning activities

Policy Session Participants

It is anticipated that the following will participate in the Policy Planning Session.

1. Lt. Gen. Merkling, AFLC/CV
2. B. Gen. Marquez, AFLC/XR
3. M. Gen. Waters, AFLC/LO
4. M. Gen. O'Loughlin, AFLC/MS
5. B. Gen. Reynolds, ALD/CV
6. B. Gen. Rider, ILC
7. M. Gen. Clark, SA-ALC/CC
8. M. Gen. Edwards, OC-ALC/CC
9. B. Gen. Broadwater, AF/LEX
10. Lt. Gen. Rhodes (Ret.)*
11. Mr. A. Sarris, XR
12. Col. Hall, AC

*Battelle consultant

OUTLINE OF LOGISTICS MANAGEMENT
SYSTEM NEEDS PLANNING SESSION

Need Session Objectives

To Be Achieved Through Presentation

- 1) To understand and support the recommended planning approach
- 2) To understand and support the concept of incremental renewal of LMS
- 3) To understand the LAG concept and to accept it as the basis for LMS planning
- 4) To understand the roles of Battelle and AFLC in LMS planning
- 5) To understand the impact of scenarios on LM data needs and the underlying audit trail.
- 6) To understand the preliminary LM concept
- 7) To understand the operation of the selected LAGs

To Be Achieved Through Group Participation

- 8) To identify impact on the topic areas of the war and theme scenarios
- 9) To identify levels of management information and functions currently required for each topic area
- 10) To identify management information and functions required for each topic area in the future
- 11) To identify LMS needs for each topic area
- 12) To evaluate group planning techniques.

LMS Needs Session Agenda

Day 1

- 0900 - 1) Overview of the 3 day meeting
- 1000 1.1 Objectives
- 1.2 Scope
- 1.3 Schedule
- 1.4 Expected results

Day 1

- 1000 - 2) Background
- 1200 2.1 Past planning studies
- 2.1.1 BCL activities
- 2.1.2 Recent and current AF activities
- 2.2 Interim study (the current planning study)
- 2.2.1 The policy planning session
- 2.2.2 Where this session fits
- 2.3 Future directions and activities
- 2.4 The planning framework (strategic/
 directive/operational planes)
- 2.5 The LM concept
- 1300 - 3) Impact of war scenarios
- 1630 3.1 Use of scenarios in other organizations
 (with examples)
- 3.2 Specific use of scenarios
- 3.2.1 The purpose of scenarios
- 3.2.2 Use of theme scenarios
- 3.2.3 Use of war scenarios
- 3.2.4 Specialization of the scenarios
 to topic areas
- 3.2.5 Selection of the maintenance process
 for this session
- 3.2.6 Impacts on maintenance identified in
 the policy planning session
- 3.3 Presentation of the group planning
 methodology to be used - brainstorming
- 3.4 Interactive group idea generation
- 3.4.1 Divide participants into four groups
- 3.4.2 Assign one war scenario to each group
- 3.4.3 Each group selects a session recorder
- 3.4.4 Using Brainstorming, generate a list
 of impacts for the assigned war scenario
 on the maintenance process.
- 3.4.5 Reconvene and have session recorder
 present findings

Day 2

- 0830 - 4) The LAG structure as a framework for future
1030 planning
- 4.1 The rationale for LAG's
 - 4.2 The LAG framework
 - 4.3 The use of the framework
 - 4.4 The LAG selection process
 - 4.5 The LAG's selected for this planning workshop
- 1030 - 5) Introduction to topic areas and the
1200 associated LAGs
- 5.1 Overview of both topic areas
 - 5.2 Details of each topic area
 - 5.2.1 Divide participants into two groups by topic area of interest
 - 5.2.2 Presentation and discussion of topic area and associated LAGs.
 - 5.2.3 Presentation of details of LM concept for topic area and associated LAGs from policy session
- 1300 - 6) Current operation of topic area
1630
- 6.1 Presentation of group planning methodology to be used
 - 6.2 Interactive group idea generation
 - 6.2.1 Divide participants into four groups, two groups from each topic area
 - 6.2.2 Each group selects a session recorder
 - 6.2.3 For each level of management (strategic, directive, operational) identify functions to be performed
 - 6.2.4 For each identified function, identify data needs
 - 6.2.5 For each identified data need, identify data sources both within the LAGs of the topic area and interfacing LAGs
 - 6.2.6 Relate the findings of this group session to the LM concept
 - 6.2.7 Reconvene and have session recorder present findings

Day 3

- 0830 - 7) Review of theme scenarios
- 0930 7.1 Theme scenario selection process
- 7.2 Review and modification of the theme scenarios
- 7.2.1 The format for the theme scenarios will be explained
- 7.2.2 Each of the three theme scenarios will be explained
- 7.2.3 The participants will be asked to respond to AF logistics related descriptors, including the status of the descriptors selected for the scenarios. These may be modified to produce a more believable, relevant set of scenarios
- 7.3 Review use of the theme scenarios
- 0930 - 8) Future operation of topic area
- 1200 8.1 Presentation of group planning methodology to be used
- 8.2 Interactive group idea generation
- 1300 - 8.2.1 Divide participants into four groups, two groups from each topic area
- 1430 8.2.2 Assign the most likely scenario to all groups
- 8.2.3 Each group selects a session recorder
- 8.2.4 For each level of management (strategic, directive, operational) identify functions to be performed considering the theme scenario and the war scenarios
- 8.2.5 For each identified function, identify data needs
- 8.2.6 For each identified data need, identify data sources both within the LAGs of the topic area and interfacing LAGs
- 8.2.7 Relate the findings of this group session to the LM concept
- 8.2.8 Reconvene and have session recorder present findings
- 8.2.9 Assign one group in each topic area one of the remaining scenarios and the other remaining scenarios to the other group

Day 3

- 8.2.10 Repeat steps (3) through (8) for the assigned scenario
 - 8.2.11 Divide participants into two groups by topic area
 - 8.2.12 For each topic area consolidate the identified data needs for all scenarios
 - 8.2.13 For each topic area identify the difference between the findings for Session (8) and Session (6). These are LMS needs
- 1430 - 9) The planning process
- 1530 9.1 Present the results of the LMS needs identification
- 9.2 Review objectives of LMS requirements session
- 9.3 Obtain feedback from participants
- 9.3.1 Will the results of this session be useful to the LMS requirements session
- 9.3.2 What can be expected from the LMS requirements session
- 1530 - 10) Summary
- 1630 10.1 Review of actual vs. expected results
- 10.2 Feedback from participants
- 10.2.1 Process
- 10.2.2 Results
- 10.2.3 Future planning activities

LMS Needs Session Participants

Two LAG's will be addressed in the LMS Needs Sessions, one concerning Maintenance Production Management, the second Weapon System Information. It is anticipated that the following will participate in these LMS Needs Sessions.

Maintenance Production Management

1. Mr. A Sarris, AFLC/XR
2. Mr. R. Darling, AFLC/MA
3. Mr. E. Zschfiesche, OC-ALC/MA (*Spelling*)

4. Mr. R. Wandleigh, OO-ALC/DS
5. Mr. B. Beagle, AFLC/LOS
6. Mr. J. Frizzell, SA-ALC/XR
7. Mr. C. Farina, SM-ALC/MM
8. Mr. E. Daly, AFLC/MAS
9. Ms. E. Ugarkovich, SM-ALC/MAC
10. Lt. Col. R. Frank, USAF/LEY

Weapon System Information

1. B. Gen. A. Marquez, AFLC/XR
2. Mr. D. K. Jones, AFLC/LO
3. Mr. I. Akin, AFLC/AC
4. Mr. M. Ezell, WR-ALC/MM
5. Mr. S. Greenwood, AFLC/LOR
6. Lt. Col. D. Sawyer, USAF/LEX
7. Lt. Col. T. Clark, AFIT
8. Lt. Col. A. Schmitt, SAC/LGSM
9. Mr. H. Boyer, AFLC/XRX
10. Mr. D. Lee, SA-ALC/MMM
11. Col. J. Boyette, AFDSC/LMC

Don -

TASK 5(a)_N: EXPECTED TYPES OF ANALYSIS OF NEEDS

Pre-Requisites for Determining Types of Analysis

In the LMS planning process, there are two aspects that must be analyzed. The first is the content of the planning material generated in the planning session; the second is the technique used in developing that content. In each planning session the requirements for analyses are different. The following sections will deal with the two parts of the first planning sessions, namely the Policy Planning and Needs Planning, and the evaluation of the techniques to be used for each.

Policy Planning Session

To provide a planned approach to LMS development, long range planning must begin at the logistics management policy level. Top level AFLC managers will consider the alternative futures to which they may have to respond, and determine the management information that they will need. Readiness to respond to contingencies is of prime concern. Once wartime management needs are satisfied, consideration will be given to the alternative peacetime environments. The combined effect of these considerations may have a variety of impacts on ALC operations.

The consideration of these future scenarios leads to the development of management policy and a concept of logistics management. In turn, this logistics management (LM) concept when contrasted with current capabilities results in the definition of LM needs upon which LMS needs can be developed.

The purpose of the policy planning session, therefore is to:

- o Establish a War Readiness Philosophy for LM Planning
- o Establish a Logistics Management Concept
- o Identify major impacts on logistics operations and LM of the combined theme and war scenarios.

To judge the accomplishment of these objectives it is recommended that a systems approach to analyses be performed. The following steps must be performed to do so:

- 1) Define the significant inputs
- 2) Identify the transformation process
- 3) Define the outputs
- 4) Identify the required controls
- 5) Identify the mechanisms at work.

Figure 1 illustrates the flow of information required to support the various planning sessions.

For this process the following inputs have been identified:

- o Consolidated Guidance War Scenarios
- o Battelle developed theme scenarios
- o LAG concept presentation
- o Related AFLC planning documents
- o Understanding of Process/Perspectives.

The following outputs should result:

- o War Readiness Philosophy for Logistic Management
- o Impact of the scenarios on LMS processes/perspectives
- o A Logistic Management Concept.

In addition to these outputs, the scenario inputs and the LAG concept must be confirmed for use as planning framework in subsequent planning sessions.

War Management Philosophy for LM Planning

This should be a succinct statement of overall objectives developed for managing AFLC under the conditions specified by each war scenario. These overall objectives will be further expanded in the Needs Planning session. They must be clearly stated, achievable, and measurable.

Impact of the Scenarios on LMS Process/Perspective

The output of this effort should be a matrix constructed to show the impact on each of the processes and perspectives by each of the scenarios, both war and peace. The information will be cross-tabulated so that all the effects of a particular scenario can be identified, and all the impacts on a given process or perspective can be assessed. The listing by scenario will be used as the source document for developing an audit trail of proposed Needs for the system. The grouping by process will identify all Needs so that solution designs can be coordinated.

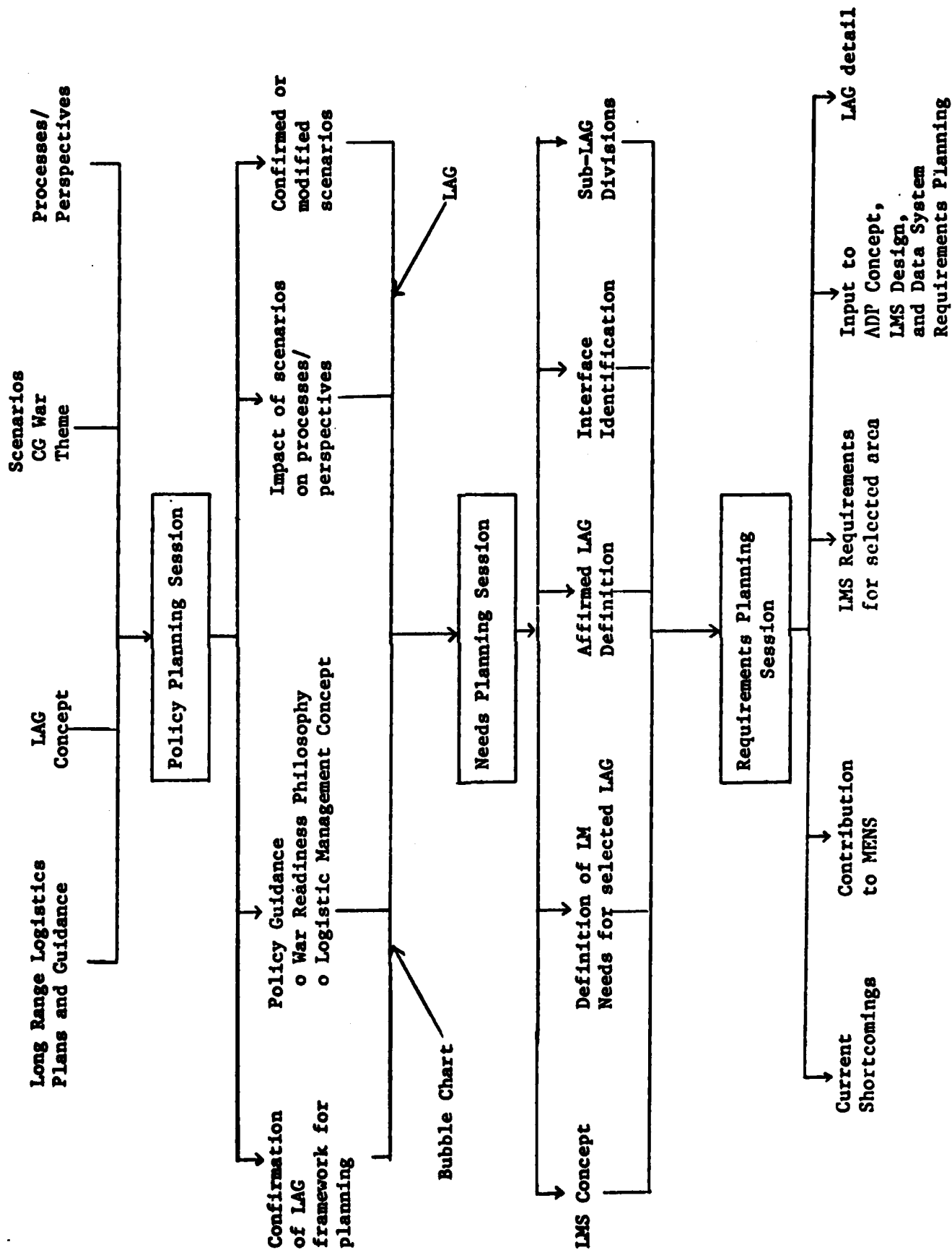


FIGURE 1. INFORMATION FLOW AT PLANNING SESSIONS

Logistic Management Concept

The heart of a logistics management concept is a description of how the logistics operations of AFLC are to be managed. This description is organized by logistics process and by other ~~considerations~~ ^{Purposeful} considerations. For our initial sessions, the emphasis is on the strategic level, although some consideration is given to the directive level and even to the operating level for emergency/surge actions.

The elements of the descriptions are:

- (1) Decisions that must be made to manage the logistics process/other ~~consideration~~ ^{consideration}.
- (2) Data needs and analytical capabilities needed to evaluate alternatives.
- (3) General sources for the needed data.
- (4) General organizations to implement the decision.

There is no need to include:

- (1) The LMS design required to provide the data needs.
- (2) Specific organizational units to supply data or implement decisions.
- (3) Detailed requirements and specifications for data quantities, flows, response times, accuracy, etc.

It is important that the Logistics Management concept provide a basis for ongoing steps leading to the implementation of an LMS. Omissions might lead to the need for major modifications during the operation of the LMS. Too much detail will lead to wasted time and effort in implementing LMS. Unnecessary elements might lead to unnecessary capabilities built into the LMS. Experience will be required to strike the optimum balance between too much and too little.

The decisions that must be made are part of a structure that include decisions all the way from strategic decisions made by the Commander AFLC to job assignments made by foreman in the warehouse and maintenance facilities at the ALCs. These decisions are made by many different people and can only be identified by people at the appropriate levels. Therefore, the complete logistics management concept cannot be developed in a single session. The overall series of policy, needs, and requirements sessions will produce a complete Logistics Management Concept including all three levels. The complete

LM concept could be expanded to show the structural relationships among the decisions.

The complete LM Concept contains some information in addition to the description of how AFLC is to be managed. The additional information defines the planning policy (e.g. the planning scenarios, acceptance of the planning approach) and the implementation policy (e.g. organization, responsibilities, support for ongoing planning). The LM Concept provides the foundation for LMS planning.

Policy Planning Results Analysis

The initial analysis of output from this session will be done before the session adjourns, so that participants will have the opportunity to approve these efforts as input to the subsequent Needs Sessions. A hierarchical structuring will be used to trace the future expansion of these inputs at subsequent levels, and an iterative review process established, since feedback from lower levels may require further definition of prior concepts.

Some of the techniques being considered for the analysis at this level include cognitive mapping and relevance trees, which will be discussed in a later deliverable.

Needs Planning Session

The purpose of the Needs Session is to address the implication of the selected approaches from the policy sessions on the LAG(s) selected for analysis as candidates for an "early start".

In order to do so the following inputs are required:

- o War Readiness Philosophy in LM planning
- o Impact of the scenarios on LMS processes/perspectives
- o The Logistics Management Concept
- o Consolidated Guidance War Scenarios
- o Battelle developed theme scenarios
- o LAG concept understanding
- o Bubble chart for area
- o Description of topics and associated LAG's.

Session staff representing AFLC upper management and missions (with emphasis on staff knowledgeable of the LMS incorporated in the selected LAG) will use these inputs to define in more detail how to meet upper management's information needs for managing the selected topics. The perspectives will be future oriented; that is, they will address how the information needs should be met so as to provide the information required to manage the functions incorporated in the selected topics under the conditions described by the scenarios. The expected output should be a definition of LMS needs that would be satisfied by a redesign of the LMS incorporated in the associated LAG's.

The specific outputs to be generated include:

- o Decision rules resulting from the application of the LM concept to the selected LAG
- o Affirmation or modification of the LAG definition
- o A list of interfaces with other LAG's
- o Recommendation of the area of the LAG to be further developed in the scheduled Requirements Session(s).

Needs Planning Results Analysis

Preliminary documentation of the results of this session must be made available to participants in the prior session, those in attendance, and those to be attending the related requirements session.

The hierarchical structure begun after the Policy Session will be expanded, and effects related to specific scenarios will be coded to maintain the audit trail.

Some of the techniques considered for this session include the ICAM Definition Method (IDEF) being used in the Air Force's Integrated Computer Aided Manufacture (ICAM) program, and the Q Sort Procedure for prioritizing projects.

Group Methods Analysis

A combination of lecture and group participation techniques will be used to stimulate the development of a futures approach to identifying needs.

In order to recommend a format for subsequent meetings, it will be necessary to evaluate the techniques as to their usefulness.

Some of the factors that will affect the usefulness of the techniques selected are:

- o The individual participant's background and perspectives e.g., his expectations, familiarity with the technique, and training or education.
- o The make up of the group itself
- o The organizational background
- o Environmental factors.

All of these will act upon the group process and affect the process outcome.

To measure process outcome, such criteria as the quality of ideas generated, the quantity of ideas, the time required to complete the process, the immediate perceived satisfaction of the participants, and the traceability of the developed logic must be considered.

In addition to the process, the effect of the physical setting, and the role of the facilitators, will also be evaluated.

The techniques being considered for this area include before and after attitude testing; a questionnaire comparing the various techniques, and observations documented by facilitators, observers, and volunteer participants.

al

TASK 4(b) SCENARIO FORMAT

The format of the scenario package to be delivered under Task 4(c) will be a 45 to 50 page report. The first five pages will deal with definitions, methods, an underlying logic of relationships among descriptors and suggested usage of scenarios. The three scenarios will then follow--each consisting of 12 to 15 pages.

The main elements of each scenario will be

- o A theme used as a title which is intended to communicate the thrust of the scenario
- o A list of descriptors (trends and events) judged to have a direct or indirect influence on LMS
- o A narrative that describes the evolution of the states of the various descriptors and that provides the threads of logic that relate the states of the descriptors to impacts on the logistics system
- o A matrix showing the state (or condition) of each descriptor for each of the three scenarios
- o A cognitive map for each scenario showing the relationships among descriptors and the influence of the states of each
- o Identification of the major external conditions influencing or constraining the Air Force Logistics System
- o Provision in the format of the cognitive map of each scenario for facilitating the specializing of it to a specific LAG.

al

RESPONSE TO COMMENTS ON DELIVERABLE
UNDER TASK 4(a)

During our meeting in your offices on June 2 we discussed the deliverable for Task 4(a) scenario approach. Following that discussion we received your comments. It is the purpose of this note to respond to your comments and provide guidance for the subsequent development and use of the scenarios.

The procedure to control updates and modifications to the scenarios will be detailed in the June 13 briefing of progress on scenario development. In brief, the scenario format will provide the basis for content and configuration control. The scenarios will include two charts covering the descriptors used and the relationships among descriptors. We're using the term descriptor as Battelle does in its BASICS program. A descriptor is a trend or event that may have an important direct or indirect influence on the logistics management system of the Air Force.

The first chart will be what is sometimes called a cognitive map. In order to make clear the relationships among descriptors on the cognitive map, arrows will be used to indicate relationships and arithmetic symbols will indicate whether the relationship is direct (+) or inverse (-).

The second chart is a matrix listing descriptors on one side and the three scenarios A, B, and C on the other. The status (or condition) of each descriptor in each scenario will be given in each cell. At present we visualize using visual symbols as follows: (↑) for increasing, (↓) for decreasing and (→) for no change.

Relative to the Attachment of your letter which is entitled "Battelle Comments on Scenario Approach", the following thoughts are added to ensure mutual understanding.

Comments 3 and 12

Together the charts mentioned above will facilitate the addition or deletion of descriptors or changes in the relationship among them.

Configuration management deals with modifying the scenarios in the future for maximum utility in the planning of LMS. The control effort involves

1) analysis of the manner in which the scenarios are extended and made more specific during planning sessions designed to identify LMS impacts, 2) a review of added descriptors, if any, suggested during planning and 3) analyses of both added descriptors and their relationships to consider the desirability of modifying the scenarios for the next cycle.

Comment 11

During the initial thinking about scenarios, the Battelle staff visualized the possibility of identifying a number of scenarios from which three might be selected. Subsequent study, review of scenarios developed by others, and preliminary analyses of the lists of trends and events created during the group sessions at XRB and at Battelle point to the desirability of relating to one another all significant trends and events. Cross impact and similar tools are usually used for defining these relationships among these trends and events. In order to communicate the thinking of the Battelle staff relative to relationships among descriptors, the use of a cognitive map was considered an appropriate tool.

During this thinking, it also became apparent that one of the most critical drivers for all institutions in the U.S. during the next 15 years will be the manner in which the energy problem of the world is solved. There are plenty of energy resources available for hundreds of years; the question is "How will man's institutions obtain supplies from available sources". Certain kinds of problems will face AFLC and its management system if energy continues to be short and other problems will emerge if decisions are made and energy supplies are adequate. Energy availability or shortage will also dictate the status of world economies, usage of materials and a host of other factors that under past conditions of energy sufficiency would be considered independent variables.

This dichotomy in energy availability appears to be such an important and overriding influence that the following three scenarios are now being proposed.

- 1) A continuing series of energy and other problems that bring no long-term solution to the energy problem of the world but also that bring no severe dampening of world economies.

- 2) An optimistic future for obtaining energy from alternative sources. This highly optimistic future for energy leads to strong economic growth in all parts of the world and severe strains on non-fuel mineral supplies.
- 3) An energy-short future with low rates of economic growth and concomitant increasing economic and political strength of the third world, dampening of economic growth in the U.S. and easing of non-fuel minerals shortages.

With these kinds of scenarios, relationships among significant descriptors may or may not be easily relatable to the detailed requirements of LMS. The impacts on the Air Force logistics system will be identified from the relationships among descriptors. The impacts on Logistics Management or on LMS should be the subject of discussion among AFLC planners and the scenario developers. These discussions are incorporated as part of the plan for the policy, needs and requirements sessions scheduled for this summer.

END

FILMED

3-83

DTIC