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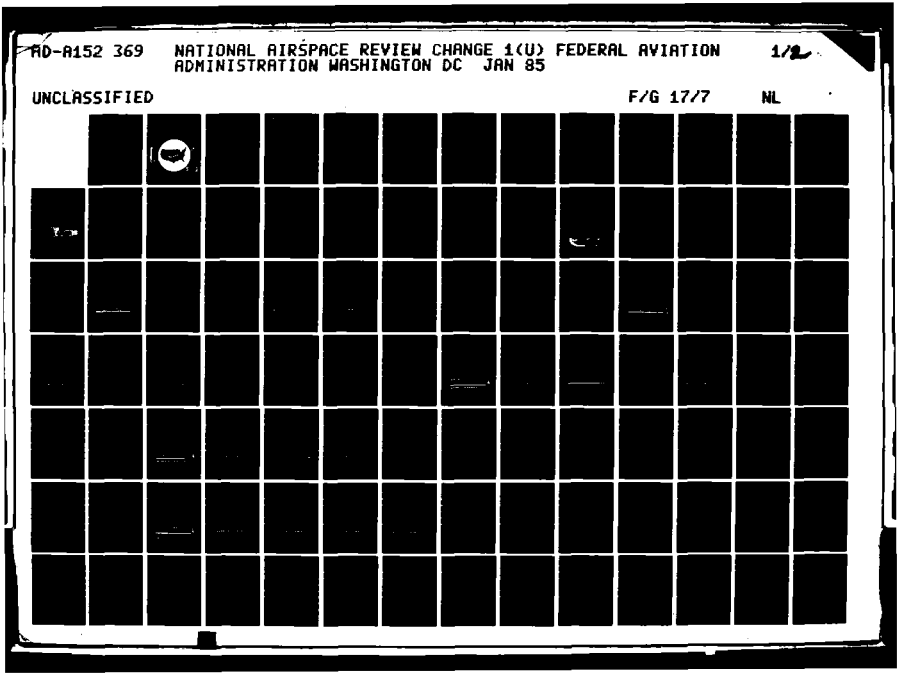

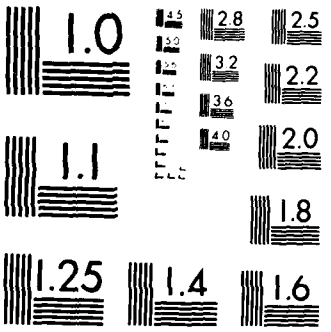

U.S. Department of Transportation
Federal Aviation Administration

NATIONAL AIRSPACE REVIEW

(1)

Interim Report

AD-A152 369

Superseded
AD A147 768
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~~JUNE 1984~~
JAN. 1985

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Prepared for the
Federal Aviation Administration
by

Engineering & Economics Research, Inc.
1951 Kidwell Drive, Vienna, Virginia 22180 (703) 893-8600

U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

January 18, 1985

CHANGE 1 TRANSMITTAL

SUBJ: NATIONAL AIRSPACE REVIEW INTERIM REPORT

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1. **PURPOSE**. This update transmits revised pages and pen and ink changes for the National Airspace Review Interim Report.

2. **ACTION**. Insert the accompanying pages in their appropriate places in the NAR Interim Report and remove the superseded pages. Make pen and ink changes as indicated. The change date at the bottom of each page is for the control of effective pages.

3. **EFFECTIVE DATE**. This update is effective upon receipt.

4. **DISPOSITION OF TRANSMITTAL**. After filing the revised pages, this update transmittal should be retained with the NAR Interim Report.

UPDATE CONTROL CHART

PEN AND INK. Change the NAR Interim Report front cover date to January 1985. Page D-1, under TRSA SERVICE should read Stage III vice State III.

PAGE REPLACEMENT. Replace the following numbered pages with the appropriate insert pages dated January 1985:

IV	4-2 through 4-8	8-3
V	5-5	8-4
1-1	5-6	8-6
2-2	5-9	8-7 through 8-11
2-3	5-11	A-1 through A-24
3-8	6-2 through 6-11	B-3
3-9	7-1 through 7-10	B-4
4-1	8-1	

KARL D. TRAUTMANN
Manager, Special Projects Staff
Office of the Associate Administrator for Air Traffic

840732A

PREFACE

The early effects of the National Airspace Review (NAR) task group deliberations and recommendations upon the National Airspace System have been identified and classified. This *Interim Report* relates those effects to historical, current, and projected NAR proceedings.

TABLE OF CONTENTS

ILLUSTRATIONS

ILLUSTRATIONS (Continued)

100

EXECUTIVE SUMMARY

Since the summer of 1982, the Federal Aviation Administration (FAA) has been hosting task group working sessions of the National Airspace Review (NAR). The NAR is a cooperative venture by the aviation industry and government. The NAR is comprehensively reviewing current air traffic control procedures, flight regulations, and airspace for the purpose of validating the current system or identifying near-term changes which will promote greater efficiency. As a component of the National Airspace System Plan, the NAR will provide the operational framework for moving into the next generation National Airspace System (NAS).

- In the area of procedures, task groups have covered: terminal services, weather programs, traffic flow management, helicopter operations, separation standards and the National Flight Data System. In the regulations area, task groups have covered: regulated terminal airspace areas, regulation elimination/simplification, and some aspects of airways and routes establishment and revocation. In the area of airspace, task groups have covered: terminal and en route airspace configuration, routes, United States/Canada/Mexico interface, charts, Air Route Traffic Control Center infrastructure, and airspace reclassification.

- The first phase of NAR, a review of the National Airspace System (NAS) as it is, was completed on December 7, 1984 with the conclusion of Task Group 3-1.8, Documenting Traffic Count. The review was conducted under budget and well ahead of schedule. The second phase of NAR, a review of the NAS as it evolves under enhancements envisioned in the NAS Plan and other modernization projects, was approved by the Administrator on October 25, 1984. Due to the expanded nature of the second phase, National Airspace Review Enhancement (NARE), management responsibility was transferred to the Office of Management Systems, an organization more suited to matrix management. This change in participation and management responsibility will be reflected in the revised NAREAC charter which will be processed early in 1985.

The Associate Administrator for Administration (AAD-1) will serve as EXCOM Executive Director. The Associate Administrators for Air Traffic (AAT-1), Development and Logistics (ADL-1), Airports (ARP-1), and Aviation Standards (AVS-1) have become members of EXCOM.

Existing task group recommendations have been grouped within five major System Areas and further categorized into Enhancement Areas which indicate improvements within each system. The results are reflected in this *NAR Interim Report*. This report provides background information concerning the evolution of the program and its goals and objectives. It outlines, in detail, the processes that have been developed to undertake the three distinct phases of the program and describes the activities that are being performed to accomplish the program's goals and objectives. The report identifies accomplishments to date and defines the implementation phasing of system enhancements by projecting recommendation implementation over time, based on Agency processing requirements and system needs.

To gain total comprehension of the NAR Program and the recommendations which are reflected in this report, it is necessary to refer to the *Federal Register* announcement of the NAR, task group staff studies which analyze and set forth the recommendations, the *NAR Implementation Plan*, and the *NAR Benefits and Costs Analysis.*

200

INTRODUCTION

210 BACKGROUND

The National Airspace Review (NAR) is the product of activities initiated in 1980 by the FAA, Air Traffic Service. The concept of reviewing and revising Air Traffic Control (ATC) policies and procedures and soliciting input from industry and user group representatives was not only innovative but also favorably accepted by the government and civil aviation communities. The transition from concept to actuation spanned almost two years during which planning and coordinating details were refined. The NAR Program Management Staff, AAT-30, published the following reasons for the national-level review of airspace allocations and ATC procedures:

1. Changing ATC service requirements.
2. The need to simplify the ATC system.
3. The need to consider the increasing cost of fuel in airspace design and procedural changes.
4. A continuing need to refine and improve air traffic flow management.
5. Changing civil user demands such as sophistication and growth of general aviation, increase in commuter/air carrier operations as a result of deregulation, and increasing helicopter activities.
6. Changing military training requirements that must be accommodated in the air traffic system.

Respondents to the strawman plan presented to the aviation community in May 1981, helped to form the NAR goals, objectives, and study topics. Within one year the first NAR task group was preparing to assemble at FAA Headquarters, pending the filing of the NAR charter with Congress. The charter describes the organizational structure, responsibilities of participants, and public notification requirements of meetings under the NAR Program. The task group study areas were clearly defined to respond to user-perceived needs, and the schedule of task group meetings was laid out to prevent an undue hardship on manpower resources of the NAR member organizations.

In April 1982, the NAR Plan was published in the *Federal Register*, and in May 1982, the NAR Executive Steering Committee (EXCOM) met for the first time. The EXCOM members reaffirmed the objectives of the NAR and reviewed the sequence of events which would ensure profitable and efficient task group activities. In addition, in order to prevent the member organizations from incurring large travel expenses, it was agreed that all task group sessions would be held in Washington, D.C.

Since the summer of 1982, the FAA has been hosting task group sessions of the NAR. This report is the first summarization of NAR activities and accomplishments.

220 ORGANIZATION

The NAR organizational structure consists of: (1) an Executive Steering Committee (EXCOM), (2) a Program Manager, (3) a Program Management Staff, and (4) Task Groups. The National Airspace Review Advisory Committee (NARAC) ensures industry participation throughout the NAR. Figure 2-1 depicts the membership of the EXCOM and the organizations of the NARAC.

The major responsibilities of the EXCOM are to:

- Review staff studies and progress reports on task group activities to ensure that recommendations meet the intent and purpose of the NAR.
- Provide guidance by recommending further study in areas where, in the opinion of the committee, task group recommendations fall short of stated program objectives.
- Recommend to the Federal Aviation Administrator adoption or non-adoption of task group proposals associated with the NAR.

The Program Manager (PM) is Karl D. Trautmann, Manager, Special Projects Staff, AAT-30, Office of the Associate Administrator for Air Traffic. His major responsibilities are to:

- Provide liaison between the Program Management Staff and FAA organizational elements and provide required program management services.
- Report directly to the EXCOM, providing staff studies and status reports on Task Group activities.

Organization

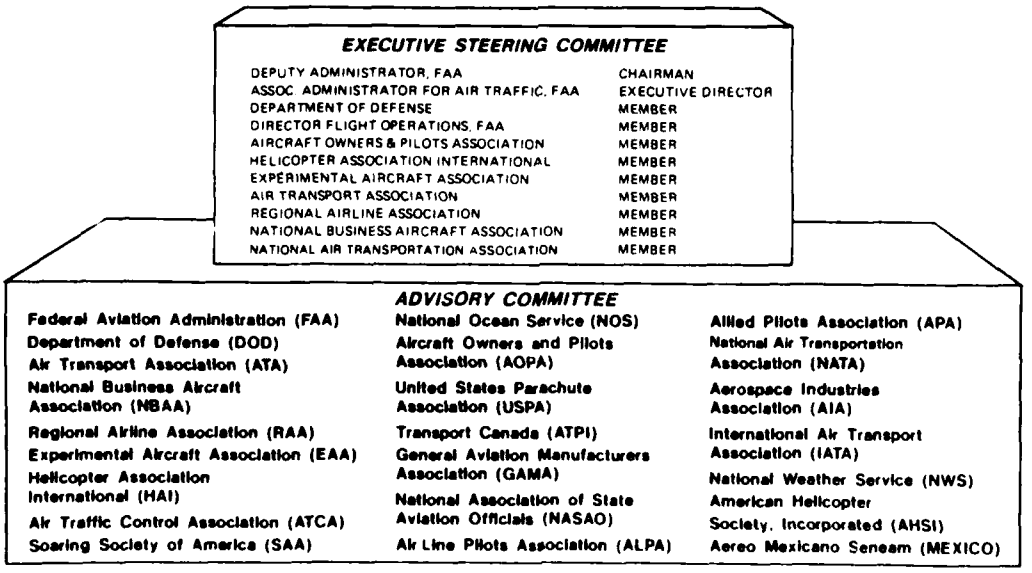


Figure 2-1.

The Program Management Staff (PMS) is composed of six full-time members whose major responsibilities are to:

- Monitor task group progress and evaluate draft staff studies and staff studies.
- Forward task group reports to the PM.
- Provide interface between task groups to ensure compatibility of recommendations.
- Provide guidance and technical expertise to task groups.
- Coordinate all program activities to ensure that a smooth transition and information transfer occurs from one task group to the next.
- Provide interface between the Program contractor and FAA's Offices of Primary Interest (OPIs).
- Ensure validity of data received from OPIs and assist in the resolution of data gathering problems.
- Track and coordinate implementation progress of recommendations assigned to OPIs.

Sixteen different series of task group sessions have been proposed to cover the five major study areas identified for review by the NAR. Each task group is headed by an FAA chairman and normally does not exceed 10 members, although the exact number is determined by the PMS. The group is usually composed of an FAA member, a member from a service branch of the Department of Defense, and eight members selected from other NARAC organizations who either share an interest or can provide expertise in the study areas under review. In addition to task group members, four to six participants attend the sessions. Participants include staff members from other branches/divisions of FAA Headquarters and regional offices as well as two individuals from the armed service branches not represented by the DOD member. Other attendees may include additional NARAC representatives or other interested parties from the aviation industry.

The major responsibilities of the task groups are to:

- Respond fully to each task assignment as it is stated in the NAR Plan.
- Review and analyze data related to the task assignment.
- Formulate recommendations.
- Identify system effects for recommended changes.

Appendix A presents tables that identify, by organization, the chairmen, PMS representatives, and task group members who participated in the task group sessions considered by EXCOMs I through X. In addition, the number of individuals who have attended sessions either as participants or as other attendees is summarized by type of organization.

Engineering and Economics Research (EER), Incorporated of Vienna, Virginia, has been contracted to provide full programmatic support to the NAR during its three major phases: study phase, implementation studies phase, and implementation phase. EER's major responsibilities are to:

- Perform research, data gathering, documentation, information dissemination, and logistics activities in support of task group sessions.
- Prepare and provide NAR information dissemination materials for presentation to the EXCOM as well as for other industry, DOD, and FAA organizations.
- Develop and maintain data bases and a Management Information System necessary to schedule and control program activities, resources, and costs, to classify recommendations and track implementation status.

- Perform detailed analysis and evaluation on selected NAR recommendations prior to full implementation, including operational confirmations and modelling.

- Assess the relationship between the *NAR Implementation Plan* and other FAA plans and programs to ensure its compatibility with those plans and programs.

- Provide other specialized, program support and coordination as required.

230 PURPOSE AND OBJECTIVES

The purpose of the NAR is to conduct an in-depth study of airspace and procedural aspects of the existing air traffic system. This will enable the FAA to identify and implement changes which will promote greater efficiency for all airspace users and simplify the system. Additionally, the NAR will match airspace allocations and air traffic procedures to technological improvements and fuel efficiency programs. Recommended changes to the present air traffic system, as a result of NAR studies, will be integrated into associated research and development efforts when applicable.

There are three main objectives of the NAR:

Objective 1 is to develop and incorporate into the air traffic system a more efficient relationship between traffic flows, airspace allocation, and system capacity. This will involve the use of improved air traffic flow management to maximize system capacity and improve airspace management.

Objective 2 is to review and eliminate, wherever possible, governmental restraints to system efficiency levied by Federal Aviation Regulations (FARs) and FAA Handbooks. The intent is to reduce complexity and simplify the ATC system.

Objective 3 is to revalidate ATC services within the National Airspace System with respect to state-of-the-art and future technological improvements. This will entail a complete review of subject matter including, but not limited to, separation criteria, TCA/TRSA requirements, and IFR/VFR services to the pilot.

240 RELATIONSHIP TO OTHER FAA PLANS

The NAR is a near-term program consisting of specific study areas, member organizations, administrative structure, task group processes, and carefully scheduled events. As such, it integrates a broad spectrum of FAA and aviation industry expertise. The program includes close coordination of NAR-generated recommendations with the objectives of the *National Airspace System (NAS) Plan,* the *Rotorcraft Master Plan*, and the *National Plan of Integrated Airport Systems*.

While the NAR Program proceeds along its scheduled course and task groups formulate recommendations for modifications to current standard operating practices, the effects of each approved recommendation are categorized into System Areas aligned, generally, with the NAS Plan System Areas. In this manner, the unified goal of FAA-sponsored plans maintains the following thrust: accommodate future demands and technology, improve vital safety services, increase productivity, constrain costs, reduce the Federal role, allow for a rational system evolution, and recognize the user's desires for minimal restrictions on the use of the airspace.

the operating rules and procedures for activities conducted within those airspace designations, the FAA established ARSA airspace and service at the Austin, Texas, and Columbus, Ohio, airports, for a one-year confirmation period prior to initiating general rulemaking to incorporate the recommendations into the National Airspace System.

An ARSA Lead Site Working Group convened in July 1983 with the following objectives:

- Develop facility directives
- Provide input to cartographic requirements
- Develop letters of agreement
- Develop a standard facility training package
- Determine the scope and extent of user education

→FAA Headquarters representatives reviewed ARSA airspace implications and procedural changes. A tentative schedule was published which culminated in the reconvening of the Lead Site Working Group in mid-1984. In the interim, both Austin and Columbus in conjunction with headquarters personnel accomplished all key implementation steps. These steps included the following:

- OST/OMB review of NPRM
- NPRM published in *Federal Register*
- Comment period
- Comments reviewed and considered
- Complete FAA coordination on final rule
- Administrator signs final rule
- Chart specifications to NOS for December 1983 publication
- OST/OMB review of final rule
- Final rule published in *Federal Register*
- Lead Site training
- Lead Site user briefings
- Implement program at Lead Sites

Table D-1 in Appendix D is a matrix which compares the TCA, TRSA, and ARSA concepts. Appendix E provides a listing of all Level III, IV, and V terminal radar facilities presently having a TRSA.

→By early 1984, the operational confirmation test program concerning the NAR recommendations dealing with ARSA airspace and basic radar services had been implemented at both sites. In November 1984, the confirmation of ARSA at these two lead sites was completed. The FAA is presently identifying candidate locations and has decided to proceed with the rulemaking process.

440 VALIDATIONS

During the review undertaken in the Terminal System Area, many recommendations have been generated which identify potential improvements to the terminal environment. In addition, in keeping with the third objective of the NAR, which is to revalidate airspace system structure, standards, and procedures in view of state-of-the-art and future technological improvements, several existing terminal standards and procedures have been revalidated. These validations are grouped in the areas of Terminal Control/Mandatory Control Areas and Additional Services and are discussed in the following sections. The task group associated with each validation is listed following each discussion. More detailed information concerning individual validations can be found in the minutes and staff studies associated with the task groups cited.

400

TERMINAL SYSTEM

410 INTRODUCTION

The objectives of the *National Airspace System (NAS) Terminal System Improvement Plan* are to maintain a very high level of safety, impose minimum constraints consistent with efficient use of the system and, at the same time, minimize FAA operations costs. It involves extended use of automation and consolidation of the number of air traffic control facilities required. Hardware and software improvements that are currently underway are more fully described in the *NAS Plan*. This chapter describes the NAR-generated recommended actions that will further enhance the Terminal System.

420 BACKGROUND

Over the years, airspace in the terminal environment has developed several redundancies and overlaps by taking such forms as control zones and control zone extensions, airport traffic areas, Terminal Control Areas (TCAs), Terminal Radar Service Areas (TRSAs), and transition areas. The types of ATC service provided, particularly to visual flight rules (VFR) aircraft, also have a degree of variability and complexity depending upon location. Growing concerns over these present complexities of airspace classifications, as well as the types of ATC services provided, have established the framework for NAR recommendations in this System Area.

→ Several recommendations concerning terminal airspace and rules are being processed by an Advance Notice of Proposed Rulemaking (ANPRM) which will be circulated early in 1985 for a 120 day comment period. The ANPRM will deal with recommendations for changes to terminal airspace flight rules, pilot certification requirements and control zone/airport traffic area standard dimensions.

→ One recommendation (NAR 1-2.1.2) will be the subject of nonrulemaking action to amend FAA order 7400.2C regarding the criteria for determining which airports should be candidates for TCAs. A notice is expected early in 1985.

430 IMPLEMENTATION STUDIES

A new concept emerged from the review of Terminal Radar Service Areas (TRSAs) that proposes to establish a standard class of airspace at all Level III, IV, and V terminal radar facilities presently having a TRSA. Labelled by the task group as "Model B" airspace, it is now called Airport Radar Service Area (ARSA) airspace and is recommended as a replacement for TRSAs. Moreover, the concept goes beyond airspace designation, as it deals with changes to the basic radar services provided by all terminal radar and en route facilities.

→ Plans for the conduct of the operational confirmation of the ARSA concept were finalized in late 1983. The operational confirmation was initiated in Austin, Texas, on December 22, 1983, and on January 19, 1984, in Columbus, Ohio, at which time the radar facilities at these two locations implemented the NAR recommendations dealing with Model B Airspace and basic radar services. The confirmation of ARSA at these two lead sites was completed in November 1984 and the FAA has decided to identify further candidate locations and proceed with the rulemaking process. The following section describes in greater detail accomplishments to date for this implementation study.

431 Airport Radar Service Area (ARSA) Operational Confirmation

→ In order to determine the relative merit of the recommendations which seek to standardize the designation of airspace within which terminal radar air traffic services are provided and

contractor support in the form of professional expertise covering both air traffic control and the systems analysis and management information support functions critical to a successful program. These are being provided to the NAR by Engineering and Economics Research (EER), Inc., of Vienna, Virginia, and Beltsville, Maryland.

→ Since the early task group sessions of the NAR, EER has provided extensive conference and data management support in the form of premeeting research, meeting participant coordination, documentation, and information dissemination. As the NAR has progressed, the total number of recommendations has grown to over 850 currently approved for processing. Determining the overall status of recommendations has become increasingly complex as processing takes them through various stages of implementation under the direction of over 20 FAA offices. This situation has presented an extremely complex management coordination problem to the NAR Program Office, which has responsibility for tracking the implementation of NAR recommendations. In response, EER has developed several automated information management tools, including a flexible recommendation classification system capable of being modified as new recommendations are formulated by task groups, a recommendation tracking system, and a report generator capable of preparing automated reports on recommendations status with over 15 individual formats.

In addition to management information support, EER is providing analytical support to the NAR in the performance of several implementation studies currently underway. Based on the results of these studies, more informed decisions on whether to implement recommendations will be forthcoming.

Technical systems analysis support and information management and coordination support provided by EER is ensuring that the NAR receives the combined subject matter and functional expertise needed in order to successfully accomplish its objectives.

330 NAR PROGRAM STATUS

→ On December 4, 1984, EXCOM X met at the Federal Aviation Administration Headquarters. During that session, 72 recommendations resulting from eleven task groups were cleared for action and then forwarded to the Administrator.

→ The total number of recommendations derived from task group sessions through EXCOM X is 850. This total is provided for informational purposes only. The thrust of this, and subsequent reports, is the influence of the NAR Program upon the evolution of near-term NAS modifications and what those modifications will mean to all airspace users and managers.

331 Accomplishments to Date

→ The first ten EXCOM sessions considered recommendations from 52 task group meetings. The recommendations of one task group meeting remain to be considered by EXCOM. One hundred sixty-four recommendations have been implemented and 116 are scheduled for implementation by June 30, 1985. Currently, four special implementation studies have been initiated: Airport Radar Service Area (ARSA) Operational Confirmation, Handbooks and Aeronautical Publications Study, Prototype Charts Evaluation, and FAA Special Use Airspace Policy Review.

332 Future Activities

The success of the first two years of the NAR Program is attributable to the active cooperation of people in virtually all aspects of aviation. The course of the rest of the Program schedule is predicted to be increasingly significant for both airspace users and airspace management personnel. Moreover, the consistent attention of task groups to support the objectives of the NAR confirms the ultimate success of the NAR Program.

The management information system developed to assure the smooth operation of the NAR Program tracks the path of all recommendations through fruition. The data base management system (DBMS) manages all relevant impact data and supplies status reports as needed. The capabilities of the DBMS are constantly expanded to meet the needs of the NAR and to support the orderly and timely implementation of the recommendations. The analysis and benefits of the recommendations upon the NAS are defined in Chapters 400 through 800 of this document.

→ Validations of recommendations made by the final twelve Task Groups (the eleven considered by EXCOM X and the single Task Group remaining from the initial phase of NAR which is to be reviewed by EXCOM XI) will be included in the next update of this document. That update is scheduled for mid-1985.

The Administrator approved the continuation and expansion of NAR on October 25, 1984. At that time he upgraded the participation of ADL and AVS from collateral input to direct contribution and transferred NAR management responsibility to the Office of Management Systems, an organization more suited to matrix management.

→ This change in participation and management responsibility will be reflected in the revised NAREAC charter which will be processed in early-1985. In summary, the Associate Administrator for Administration (AAD-1) will serve as EXCOM Executive Director. The Associate Administrator for Air Traffic (AAT-1), Associate Administrator for Development and Logistics (ADL-1), Associate Administrator for Airports (ARP-1), and the Associate Administrator for Aviation Standards (AVS-1) have become members of EXCOM.

340 CONTRACTOR SUPPORT

Performance of FAA's responsibilities within the NAR requires not only dedicated, professional FAA staff personnel but also extensive

the need for processing the recommendations, from task group initiation through assignments to the appropriate OPIs. Used as an analysis tool, the plan relates the thrust of accumulated, adopted recommendations which must be integrated with systems acquisition detailed in the NAS Plan.

Categorizing and tracking functions inherent to the structure of the plan include: time line identification of projected recommendation implementation schedules, tabulation of recommendation categories identified as Enhancement Areas, and implementation milestones for each Enhancement Area.

Figure 3-3 describes the structure of the *NAR Implementation Plan*. As depicted, all recommendations are classified based upon their relationship to one or more of the five Systems Areas. Time line identification begins at this point, using OPI-provided projected implementation dates. In general, projected implementation dates are the dates at which time the FAA could be in a position to initiate implementation. However, final implementation decisions will be predicated on the results of special studies and regulatory and non-regulatory processes. It is conceivable that further modifications may be required, thereby changing the implementation dates. Analysis of the resultant recommendations within each system produces homogeneous, topically significant sets of recommendations which are called Enhancement Areas. Certain recommendations within each Enhancement Area are identified as milestones which represent significant events along the path to achieving an overall enhancement in the particular area.

The *NAR Implementation Plan* is, by design, flexible and expandable to permit incorporation of requirements dictated by sets of recommendations which will be subsequently formulated and transmitted to the OPIs within the FAA.

Implementation/Planning Structure

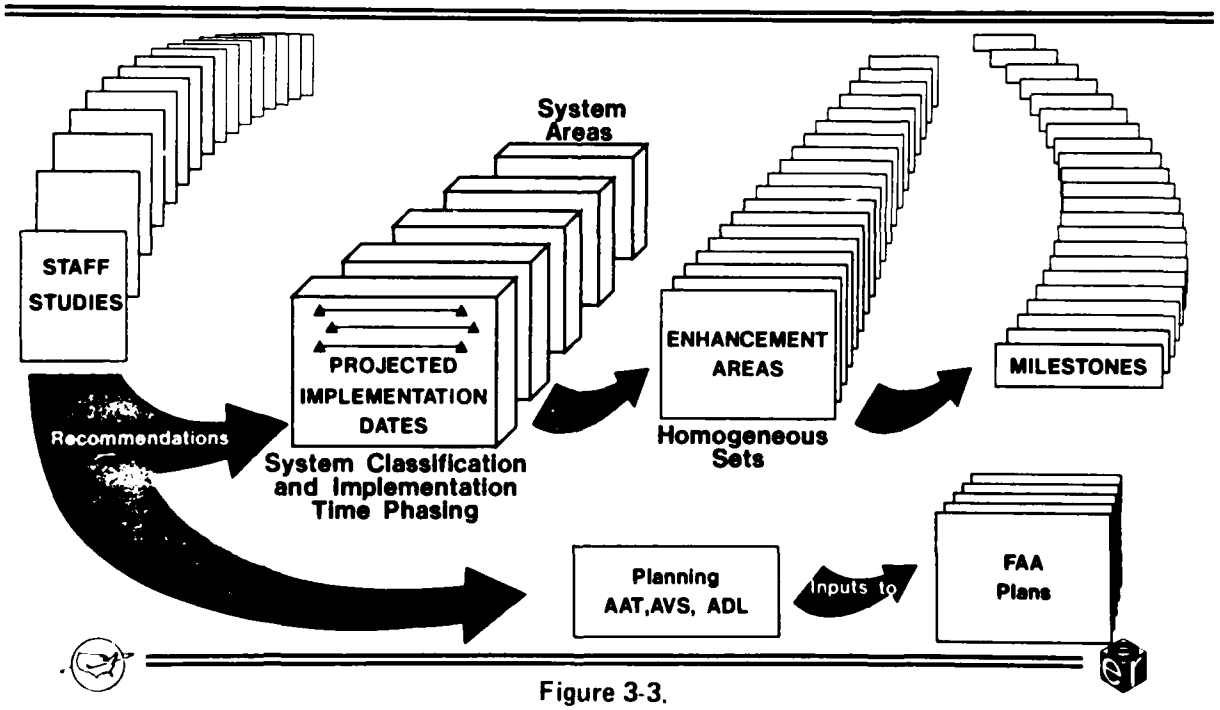


Figure 3-3.

In order to clarify the overall condition of the NAR Program and the status of all recommendations, a recommendations classification system has been developed that groups recommendations according to their likely effects on several different types of activities (see "Implementation Plan" section below). By the use of these differing classifications within the data base, a more complete picture of the effects of NAR recommendations implementation is possible.

328 Implementation Studies

Among the alternative actions available to the Administrator in considering NAR recommendations is the implementation study. Although not undertaken in every case, it may be appropriate where more information is needed to decide whether an action with potentially large effects should be undertaken. Under NAR auspices, the contractor is providing technical support in the validation or operational confirmation of NAR recommendations related to the Airport Radar Service Area (ARSA) concept. In addition, the contractor is providing support in a variety of special use airspace, airspace reclassification, and handbook evaluation and analysis tasks.

329 Implementation Plan

The *NAR Implementation Plan* has been developed for planning and programming the implementation phase of the program. As depicted in Figure 3-2, task group recommendations have been grouped within five major System Areas and further categorized into Enhancement Areas which indicate improvements within each system.

The *NAR Implementation Plan* has been designed as a working tool for managing, analyzing, categorizing, and tracking the recommendations which have been cleared by the EXCOM and the FAA Administrator and have been processed by the OPIs for implementation action. As a management tool, the plan fulfills

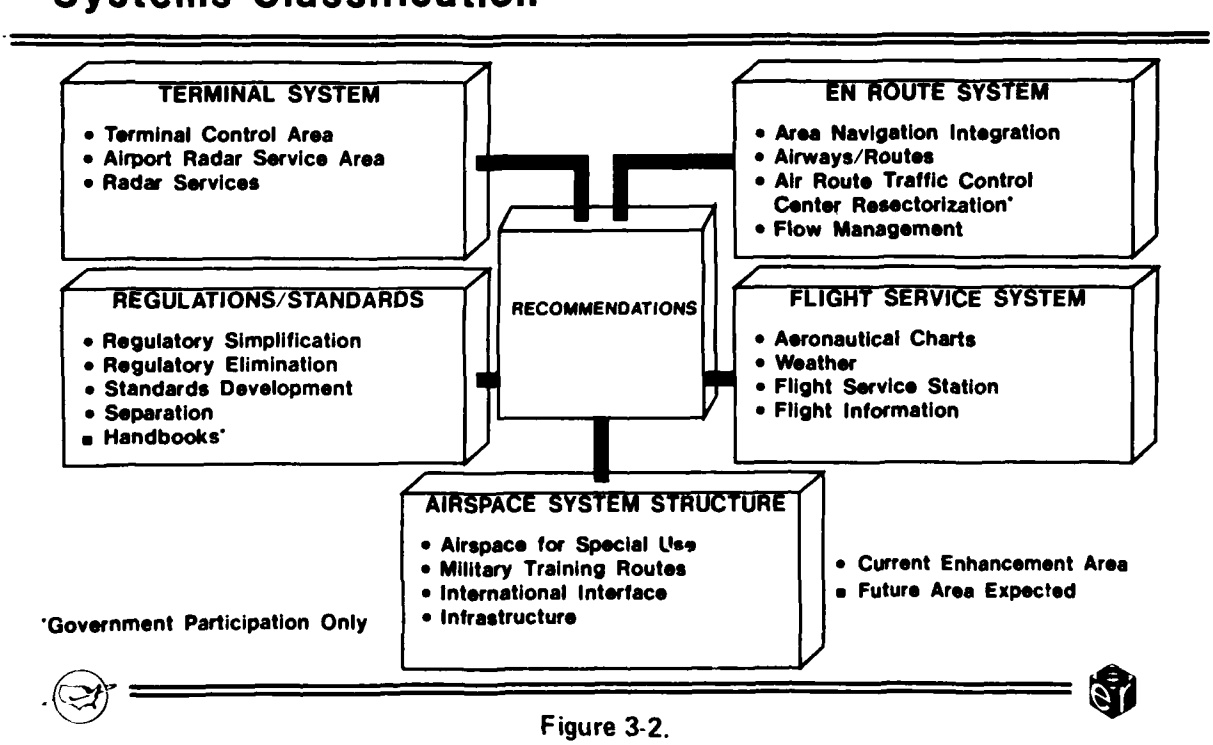


Figure 3-2.

325 Administrator

Within seven days following the completion of each EXCOM meeting, the PM briefs the Administrator on the results of the meeting and seeks clearance from the Administrator to proceed on each recommendation. The Administrator may provide either the clearance or direct that alternative action be taken on a recommendation or study. Additional review topics may also be specified which are incorporated into future NAR task group meetings. Once cleared for further action, an Office of Primary Interest (OPI) is assigned to continue processing of the recommendation.

326 Office of Primary Interest (OPI)

Within two weeks after the Administrator's briefing, an Office of Primary Interest (OPI) receives all recommendations that have been assigned to it from the PM. The OPI is that office which has primary responsibility for the subject areas covered in the recommendations. Depending on the content of the recommendation, it may be processed by the OPI in a regulatory or non-regulatory manner.

If regulatory processing is required, the provisions of the Administrative Procedures Act (APA) must be followed. A notice of proposed rulemaking (NPRM) is prepared and coordinated internally, then published in the *Federal Register* along with an Economic Analysis. Public comment on the proposal is received and either a final rule, appropriately modified, is published, or the proposal is dropped as a result of adverse reaction. Regulatory processing normally includes a public comment period of 60-90 days. However, due to the nature of the NAR Program, where the aviation community is directly involved in the development of the recommendations, the Administrator has determined that a 30-day period for receiving public comment is sufficient.

If non-regulatory processing is undertaken, the recommendation is normally translated into a proposal which is informally circulated within the aviation community to interested parties; comments received are analyzed and further appropriate action is then taken. Normally, a 30- to 45-day period is provided for receiving public comments under non-regulatory processing. Again, however, due to the nature of the program and the aviation industry's active involvement in the development of the recommendations, a 30-day period for public comment has been determined to be adequate by the Administrator. The comment periods under both regulatory and non-regulatory processing provide aviation industry organizations with a third opportunity to comment on any proposals.

Regardless of which processing path is followed, an automated recommendation tracking system, developed by the contractor, continuously updates the current status of each recommendation within the implementation process.

327 Disposition Process

During OPI processing, each NAR recommendation is placed in an automated data base and tracked via regular status updates supplied by the OPI. Implementation decisions are accompanied by estimated or actual implementation dates. For other than full implementation, a memorandum must be prepared by the OPI which explains the alternative action. This report undergoes internal FAA review prior to final disposition of the recommendation.

The contractor maintains the data base and tracking system for the disposition process and provides a quarterly status report on the current status of all recommendations. In addition, quarterly status summaries and a variety of formatted reports on various aspects of the implementation effort are printed to assist the PMS. Appendix C provides samples of standard reports provided to the PMS.

contractor which summarizes the proceedings of the meeting and describes the reasoning behind each recommendation and validation decision.

These documents are distributed to the task group members, who are provided two weeks to review and comment on the draft staff study. Upon completing any revisions based on these comments, the finalized staff study is forwarded to NARAC members and appropriate FAA offices. These members and offices are each provided a minimum of 30 days to review the document. NARAC members review staff studies on a qualitative basis to determine whether task groups have met their charge. FAA offices review the studies to assess the potential budgetary and workload impacts on FAA.

While NARAC members and FAA offices are reviewing a staff study, the recommendations from that study are reviewed by both the NAR PMS and the contractor to determine which enhancement areas they should be assigned to and to prepare them for entry into the NAR recommendations tracking data base (see "Disposition Process" section below).

324 EXCOM

Four times each year, the Executive Steering Committee (EXCOM) of the NAR meets to review recently completed staff studies and recommendations developed in accordance with the above noted process. At each EXCOM meeting, four to seven staff studies are reviewed, each of which result from task group meetings completed at least 12 weeks prior to the meeting.

Prior to the EXCOM meeting, briefing packages containing technical data as well as information related to recommendations from completed task group sessions are prepared. Graphic presentations and computer-generated documentation are also provided as necessary. An EXCOM Member's Reference Guide (MRG), which contains synopses of facts and analyses of facts together with the recommendations, is prepared and distributed to the EXCOM members at least 30 days before the EXCOM meeting. In addition, an abbreviated briefing manual, the Briefer's Reference Guide (BRG), is prepared for the PM (or designated narrator) to ensure that the EXCOM meeting is conducted in an organized and timely manner. The BRG contains an overview of all task group discussions and recommendations with emphasis on dissenting views, and contains visual aids and presentation cues for graphic visual aids to be displayed during the meeting.

At the EXCOM meeting, the PM briefs committee members on the subject matter of each task group staff study, the number of recommendations in each, and exceptions to those recommendations, as well as any comments received from NARAC members during the staff study review cycle. The PM also recommends the action that should be taken by the EXCOM regarding the clearance of recommendations for the Administrator's review, the addition or deletion of task group meetings resulting from prior task group activities, and any scheduling changes needed to facilitate the work of future task groups and the EXCOM.

The EXCOM considers the PM briefing and any recommended actions and then clears or rejects each recommendation submitted for its review.

During the EXCOM meeting, the contractor provides technical and logistical support in the form of meeting room preparation, equipment operation, and the preparation of summary minutes on the proceedings which are distributed to the EXCOM members, participants, and the FAA Administrator after the session is concluded. The contractor also prepares a briefing for the FAA Administrator which contains overviews of all recommendations acted upon in addition to a description of the results of the EXCOM meeting.

322 Task Group Meetings

Task group meetings are convened at FAA Headquarters and last, generally, from one to three weeks.

Each task group is charged with the following responsibilities:

- Review and analyze data related to the task assignment.
- Fully explore areas of consideration and probable actions which would be in keeping with the NAR objectives.
- Submit final recommendations or validations with accompanying rationale for disposition by the EXCOM.

The task group chairman presides over each day's session and acts primarily as a facilitator. As such, the chairman's views are not generally presented to sway the task group; rather, when expressed, they are intended to guide discussion in fruitful directions, to ensure that the full range of subjects within the task group's purview are discussed, and to help overcome any impasses reached by the group.

The NAR PMS provides important support by briefing the task group on the NAR function and by clarifying the appropriateness of task group discussions or recommendations to that function. The PMS also secures the assistance of experts from the FAA and other organizations to provide additional information on specific topics requested by the working groups which may include formal presentations.

Task group sessions are carried out in a relatively informal atmosphere, generally involving open discussions of relevant topics, allowing input from both formal members and non-member participants. Other attendees (non-NARAC members, members of the public, etc.) are given opportunities to brief the task group or otherwise participate in meetings. Interested parties may submit, in writing, recommendations relative to the task assignment prior to the task group meeting. Those comments are given full consideration during the deliberation period. Additionally, organizations may present their views through a representative organization in the task group, or attend the task group meeting as an attendee.

All formal members of a task group may submit relevant recommendations for consideration by the task group. Adoption of recommendations is by a rule of general consensus. Opposing views may be incorporated into the recommendation's final written presentation of the task group study covering the session.

In addition to the official recommendations of a task group, subjects are frequently discussed that might have led to recommendations, but no recommendation is ultimately made because the task group determines that either the existing procedure, rule, or criterion is valid or that improvement or correction is not feasible at this time or within this forum. Such decisions constitute a very important aspect of the NAR, in that they revalidate existing ATC procedures, and are very significant task group conclusions.

Throughout task group meetings, the contractor provides a variety of services to task groups, including preparation of summary minutes each day covering the previous day's session, preparation and reproduction of recommendations submitted or modified (as needed), preparation of any special graphics or exhibits required by the task group, and other meeting logistics as required.

323 Post-Task Group Meeting Activities

Within two weeks following completion of a task group session, a compendium of the final, corrected minutes of the meeting is produced, and a draft staff study is prepared by the

solicited from FAA Headquarters Division and Service level managers and the Administrator.

321.1 Membership

Once the Chairman has been selected and informally contacted, formal notification and, if necessary, travel orders are processed and forwarded. Task group members are then identified by the NARAC organizations. During the initial planning stages of the NAR, member organizations provided input on areas of interest concerning specific task group assignments. Based on these inputs, the PM designated the organizations to be represented on specific task groups. For each task group meeting, the organization is contacted to obtain the name of the individual who will participate as the member representing that organization.

In addition to members, four to six participants attend the sessions. Participants include individuals from the armed service branches not represented by the DOD member, and other designated FAA Headquarters or regional office staff members. These individuals may provide input throughout the sessions to buttress or amplify DOD and FAA positions.

Other attendees include individuals from other NARAC organizations as well as interested parties from the aviation industry and the public.

The composition of individual task groups normally does not exceed 10 members. However, the exact number is determined by the PM depending on task assignment and length of study. Limiting the size of each task group may prevent some organizations that have shown an interest in specific task groups or assignments from participating as task group members. However, the FAA recognizes the expertise of these entities and offers them an opportunity to provide input during the course of task group meetings.

321.2 Written Material

First drafts of the Areas of Consideration and agenda for the meeting are prepared by the PMS with assistance provided by the contractor's task group leader. Each of these components is reviewed by and discussed with the Chairman and the FAA organization responsible for the subject areas prior to establishing them in final form.

An Advance Information Package (AIP) is prepared by the contractor and consists of the areas of consideration, the agenda, the task group membership listing, and background material, which includes studies, reports, articles of interest, and other pertinent information gathered earlier. Once completed, the AIP is then reproduced and distributed more than 30 days prior to the start of the task group meeting to all members, participants, and to other attendees who have requested them. Additional copies of the AIP are maintained by the PMS for possible distribution at the start of the task group session.

321.3 Notice

Four weeks prior to the meeting, a notice of the meeting is prepared and coordinated within FAA such that it is published in the *Federal Register* at least 15 days prior to the meeting date. At the same time, travel and parking arrangements for all FAA members and participants requiring them are completed at the NAR office as are parking arrangements for other members, participants, and other attendees to allow sufficient time for processing prior to the meeting.

Finally, the Chairman, PM, PMS, and the contractor's task group technical support staff meet several days prior to the scheduled meeting date to assure that preparations are complete and to make any final arrangements that may be required.

300

PROCESS

310 INTRODUCTION

To effectively accomplish program objectives, the NAR consists of three phases which are conducted concurrently in many cases. The Study Phase consists of task group working sessions which review data related to the study areas. Upon completion, the task groups either validate current airspace, flight regulations, or procedures or make recommendations for improvement. The Implementation Studies Phase occurs in those cases where modelling or operational confirmation is determined to be necessary before moving to full implementation. The Implementation Phase of the program deals with actual implementation of the NAR recommendations. Figure 3-1 displays these phases.

320 DESCRIPTION

321 Pre-Task Group Meeting Activities

Ninety days prior to the convening of each task group meeting, preparations for the meeting begin with a planning session between the assigned NAR Program Management Staff (PMS) representative and an Engineering and Economics (EER), Inc., task group leader. A Chairman (from within FAA) is then selected by the PMS (with concurrence of the PM) and is briefed regarding the subject matter and the objectives of the meeting. Simultaneously, research is begun by the contractor's task group leader to obtain relevant studies and other materials, and input on the meeting is

Phases

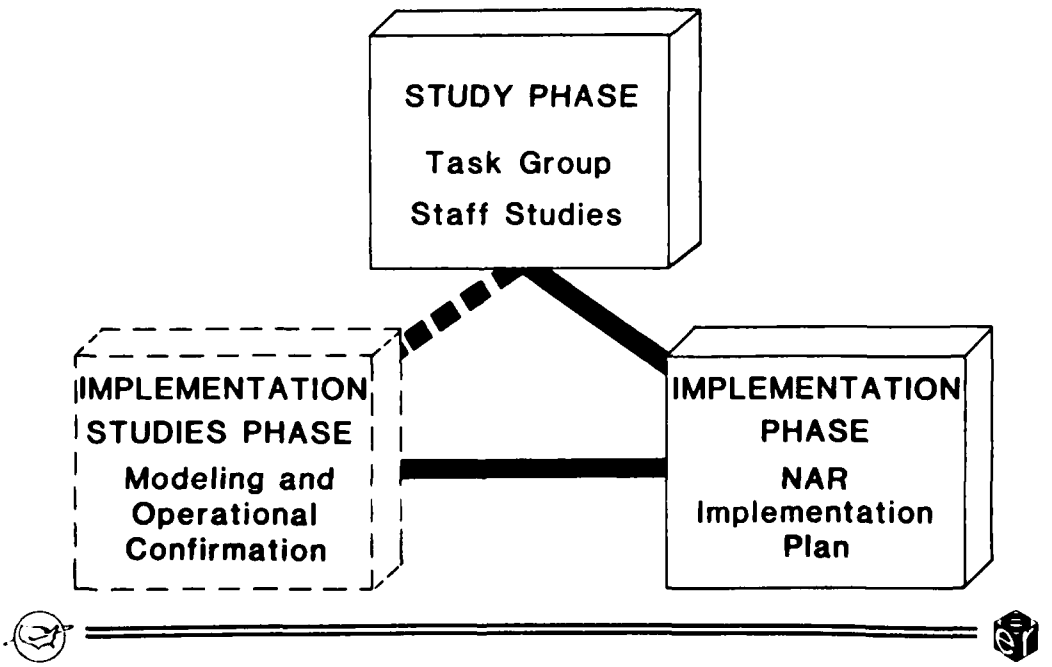


Figure 3-1.

The benefit-to-cost ratio of the program is estimated to be 25.25 to 1.00, exclusive of intangible benefits to the system arising from the program

263 Area Navigation (RNAV) Integration: Random Routes

Area Navigation (RNAV) Integration is a broad enhancement area, elements of which are scheduled for implementation as late as 1988. The Random Routes aspect of this enhancement area is evaluated in this report.

The Random Route aspect of RNAV Integration is a set of activities directed toward enhancing pilot use of, and controller ability to accommodate, increased random area navigation in flight.

The primary benefit from undertaking such actions will be reduced fuel consumption. Based on fleet make-up size, and an increasing rate of RNAV utilization, this reduction is estimated to total $1,547 billion in discounted 1983 dollar benefits for the 17-year period to the year 2000.

Costs include program development, controller and pilot training, and RNAV avionics. Together these costs are estimated to total $676 million in discounted 1983 dollars through the year 2000.

The estimated benefit-to-cost ratio (low order) for this Enhancement Area is 2.29 to 1.00.

264 Summary

Figure 2-3 presents a summary of these estimated enhancement area benefits and costs. Note that these three areas combined represent a net cost avoidance/savings of $1,202.6 million.

Future annual updates of this document will evaluate additional enhancement areas leading to an ultimate ratio for the entire program.

Summary of Quantified Enhancement Area Benefits and Costs

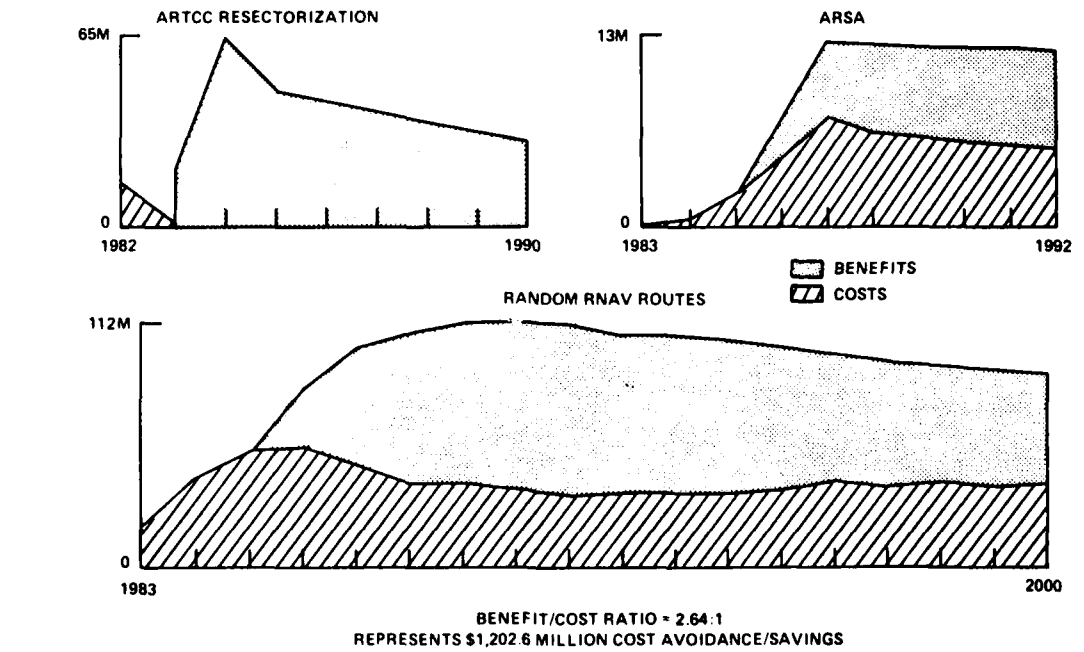


Figure 2-3.

development of the route system model. Another example is Task Group 1-2.5B, which convened in June 1983, to study traffic patterns and responsibilities in VFR and IFR operations at non-towered airports. Task Group 1-6.4, SID and STAR Charts and the Airport/Facility Directory, resulted from former charting task group deliberations and addressed user requirements, human factors, and current effectiveness.

Three separate U.S. Airspace Reclassification task group sessions were added to the original NAR schedule.

The Task Group 1-7 sessions were initiated to conduct an in-depth review of U.S. airspace classification for simplification and to consider making it compatible with the Canadian Airspace Classification System recently implemented. Application of the reclassification recommendations was addressed by the second session of TG 1-7, and pilot requirements were studied in the third session, with the aim of reducing pilot/controller transborder problems.

260 BENEFITS AND COSTS

The "Enhancement Area" classification developed for the *NAR Implementation Plan* provides a comprehensive grouping of recommendations and is the basis upon which benefit and cost identification and quantification is made. Of the 20 enhancement areas identified to date, the Airport Radar Service Area (ARSA), Air Route Traffic Control Center (ARTCC) Resectorization, and the Random Routes aspect of the Area Navigation (RNAV) Integration Enhancement Areas have been evaluated to determine benefit-to-cost ratios.

Each enhancement area is broken down into quantifiable benefits and costs which are then individually evaluated. The results of this step are then aggregated so as to compare benefits and costs for the area as a whole. The *NAR Benefits and Costs Analysis* (published separately) contains a detailed description of benefits and costs. Succeeding paragraphs herein provide summary results to date.

261 Airport Radar Service Area (ARSA)

ARSAs are intended to replace Terminal Radar Service Area (TRSA) airspace with a simplified airspace configuration and mandatory communications requirement. The dollar value of cost savings arising from ARSAs is estimated based upon ARSA implementation at all 139 current TRSAs and is not expected to be realized until 1992. Benefits are estimated to total $84.5 million in discounted 1983 dollars.

The costs associated with implementing and operating ARSAs are composed of various types of delay experienced by VFR aircraft and training/educating controllers and pilots. These costs are estimated to total $43.9 million in discounted 1983 dollars. The estimated ARSA benefit-to-cost ratio is thus 1.92 to 1.00.

262 Air Route Traffic Control Center (ARTCC) Resectorization

The Air Route Traffic Control Center (ARTCC) Resectorization Program was undertaken to streamline and reduce the number of en route sectors in an effort to improve current controller productivity, improve traffic flow efficiency, enhance current automation capabilities, and assist in positioning the air traffic control system for future technological improvements envisioned in the *NAS Plan*.

The primary quantified benefits of resectorization are avoided controller labor costs and attendant avoided equipment costs. These are estimated based on a reduction of 135 sectors and are expected to continue until 1990. Benefits are estimated to total $303 million in discounted 1983 dollars.

The costs of resectorization have already been incurred and are composed mainly of labor hours for implementation. The total cost is estimated to be $12 million in discounted 1983 dollars.

250 SCOPE AND STUDY AREAS

251 Topics

Under the NAR, task group topic assignments are grouped into five major study areas. As shown in Figure 2-2, the NAR is conducting a comprehensive analysis of specific demands currently made on the national airspace and making recommendations for improvement.

252 Evolution of the Revised Schedule

The NAR Program Management Staff has adopted certain revisions to the original published schedule. These revisions are outlined briefly below. More specific information is provided in Appendix B: Table B-1, NAR Scope (as published in April 1982); Table B-2, NAR Scope (as revised and published in February 1983); and Table B-3, NAR Schedule Adjustments.

As the NAR Program progresses, adaptations to the scheduled series of task group sessions are made in response to both user group requests and government-identified priorities. The NAR Program events have been compressed to a 30-month duration. Combining task group sessions where feasible and favorable, deleting others, and reducing the time frame between certain meetings as well as the duration of others resulted in some time savings as well as some appropriately combined study topics. Task group sessions that were cancelled are primarily those which were either being reviewed and evaluated outside the NAR process or concerned issues and problems that were handled through normal administrative activities before their scheduled review.

The additions to the NAR Program schedule resulted from task group sessions which recommended expanded study within the NAR framework. One such addition is Task Group 1-3.4, which met in May 1983, to complete

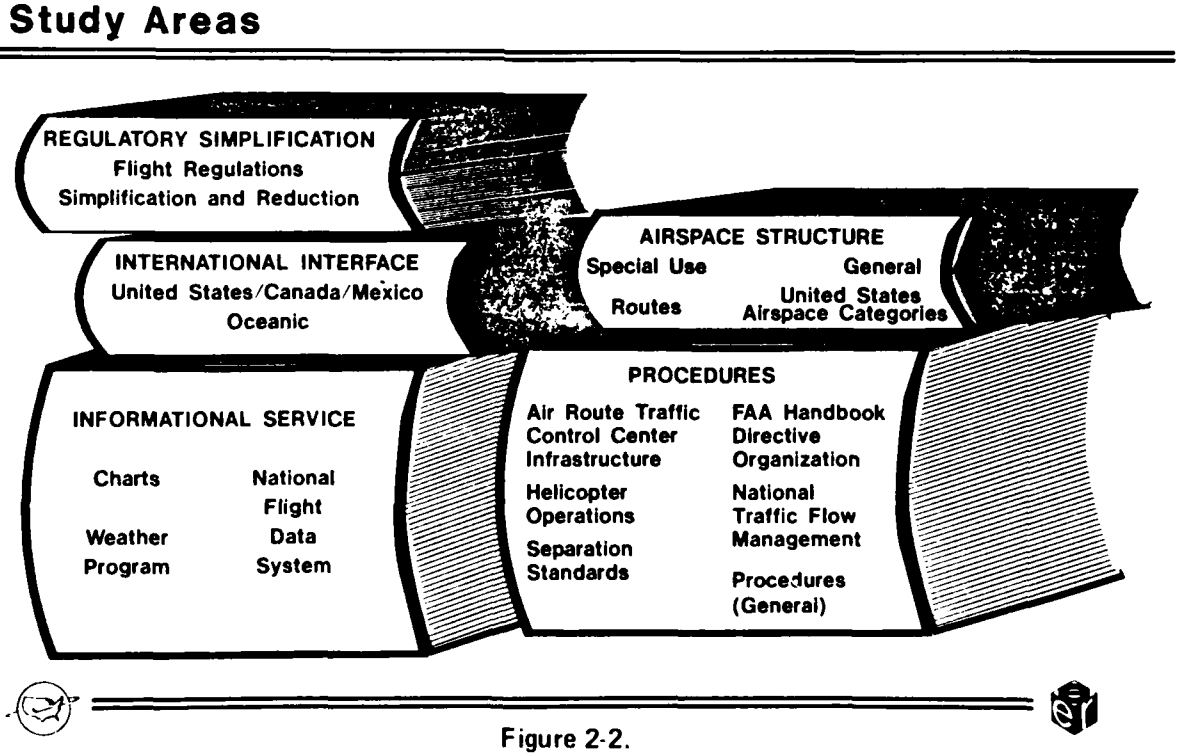


Figure 2-2.

441 Terminal Control/Mandatory Control Areas

In the area of terminal control and mandatory control areas, the current speed restrictions in terminal control areas (TCAs) have been validated. FAR 91.70(c) prohibits a pilot from operating an aircraft in airspace underlying a TCA or in a VFR corridor through a TCA at an indicated airspeed of more than 200 knots (230 mph). Based on a conclusion that the speed limitation in these areas is essential for pilots to apply "see and avoid" type procedures, there was general agreement that the requirement should be retained. (TG 1-2.1)

442 Additional Services

In the area of Additional Services, several decisions were made that represent general agreement with current FAA policy and practice.

In the area of application and provision of Additional Services, the current policy of duty performance based on priority has been maintained. (TG 1-2.4)

In relation to traffic advisories, although differences in the application of safety advisories and traffic advisories were clarified and a detailed review of the use of cardinal points of the compass and clock positions was made, no requirements to change the procedures were determined necessary. (TG 1-2.4)

An initial suggestion to delete the holding pattern surveillance procedures as outmoded was made based on a perception that holding pattern airspace areas were no longer being depicted on scopes (either on the videomap or the map overlay) and the fact that deviation advisories (Paragraph 663 of FAAH 7110.65C) provide the same coverage for aircraft deviating from protected airspace areas inclusive of all airspace. A determination was made, however, that holding pattern surveillance is still valid in areas of mountainous terrain and where high altitude military operations are being performed. These areas continue to be depicted on videomaps at certain terminal locations. Also, because deviation advisories do not provide for continuous radar coverage, the procedure was retained as currently provided. (TG 1-2.4)

A suggestion to relay weather information using the National Weather Service (NWS) Radar Weather Echo Intensity Level category terminology was not agreed to because the decibel reading that can be received from ATC radar can translate erroneously into a significant weather display on a scope. If information is passed on using the associated terminology based on the display, it could be misleading to pilots. Weather and Fixed Map Units (WFMUs) are not totally accurate in the detection of weather intensity due to the functional limitations of the equipment. For these reasons, the provision of weather and chaff services were retained as provided. (TG 1-2.4)

In terms of disseminating weather information, no recommendations were identified for improving the provision of general weather information versus specific weather values, or the reporting of weather element differences between towers and weather stations. (TG 1-2.4)

In the area of bird activity information, it was noted that bird activity remains a problem in both the terminal and en route areas. Procedures were retained as currently provided. (TG 1-2.4)

450 FUTURE NAR ENHANCEMENTS TO THE TERMINAL SYSTEM AREA

→VFR terminal routes will be studied because of concerns about VFR flight paths in and around metropolitan areas having large volumes of traffic. A study of special helicopter instrument approach procedures and related weather information dissemination will also be conducted.

460 TERMINAL SYSTEM ENHANCEMENTS IMPLEMENTATION PLAN

Task group recommendations which are categorized in the Terminal System deal with simplification of terminal operations in Terminal Control Areas (TCAs) and Terminal Radar Service Areas (TRSAs) through design modifications and standardization of basic Radar Services to Visual Flight Rules (VFR) aircraft. Recommendations identified as potential Terminal System improvement actions predominantly fall into three Enhancement Areas:

- Terminal Control Area
- Airport Radar Service Area
- Radar Services

The Terminal System and each of the foregoing Enhancement Areas are depicted in Figure 4-1.

→The central thick line in Figure 4-1 represents the integration of 173 recommendations that relate to the Terminal System with projected implementation predominantly complete by the Fourth Quarter of 1986, but extending to the Fourth Quarter of 1992 to complete action on all recommendations in this area.

Implementation milestones for the Enhancement Areas currently identified for the Terminal System are more fully described in the following sections. Each section includes a figure that identifies recommendation milestones selected and depicted to represent specific events along the path to achieving overall enhancement in each Enhancement Area. Recommendations that are being either modified and then implemented, partially implemented, or not adopted are discussed in separate sections within each Enhancement Area.

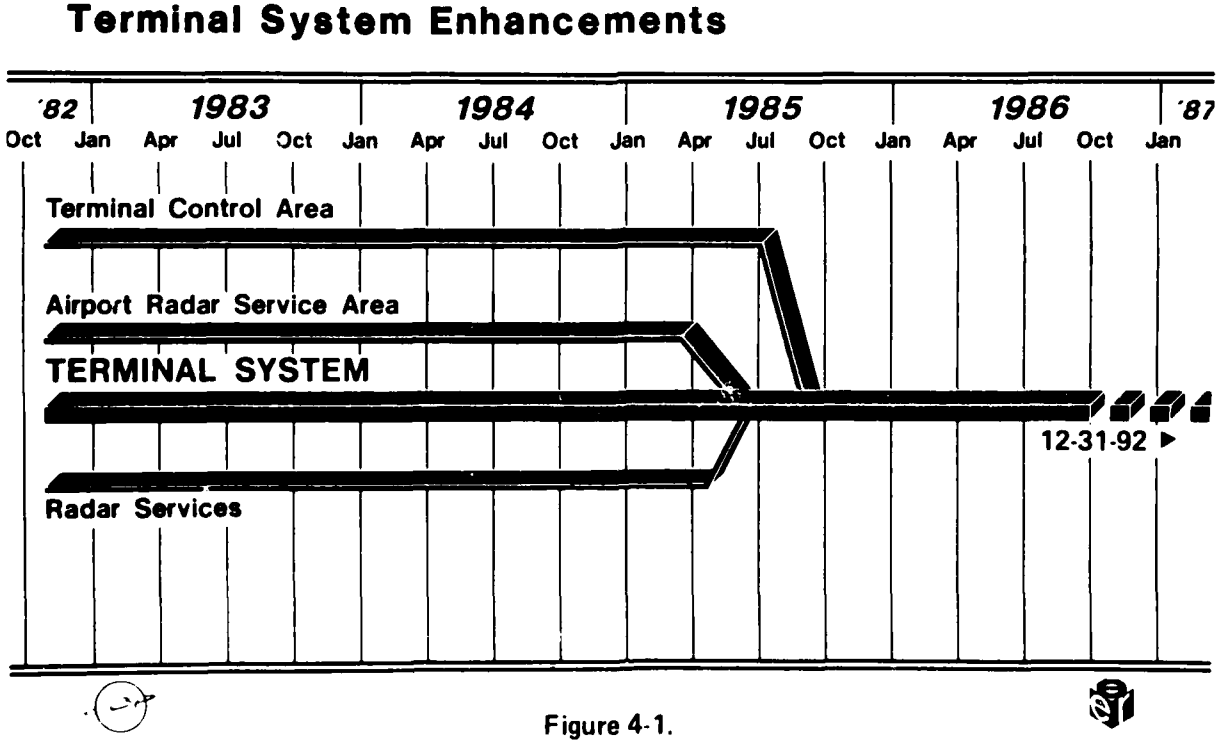


Figure 4-1.

461 Terminal Control Area (TCA) Enhancement Area

→The TCA Enhancement Area depicted in Figure 4-2 represents 41 recommendations that are supportive of the TCA concept while suggesting modifications to TCA categories, design criteria, separation, pilot education, and information dissemination. TCA implementation begins in the Third Quarter of 1985. Implementation may begin earlier for some recommendations in this set, as indicated by the milestones depicted.

461.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

→461.2 Non-Adopted Recommendations

Two recommendations in this Enhancement Area are not being adopted.

In NAR 1-2.1.5, entitled Pilot TCA Operating Procedures – Biennial Review, Task Group 1-2 recommended that FAR 61.57 be amended to specifically require that a review of TCA operating procedures be included in the biennial flight review. There is currently no evidence, however, that suggests that pilots are not being given information on TCAs. Since this information is covered in both the written examination for certification and by flight instructors during the biennial flight review when the pilot is one who operates in or near TCAs, the recommendation, for all practical purposes, is already in effect, and therefore will not be adopted.

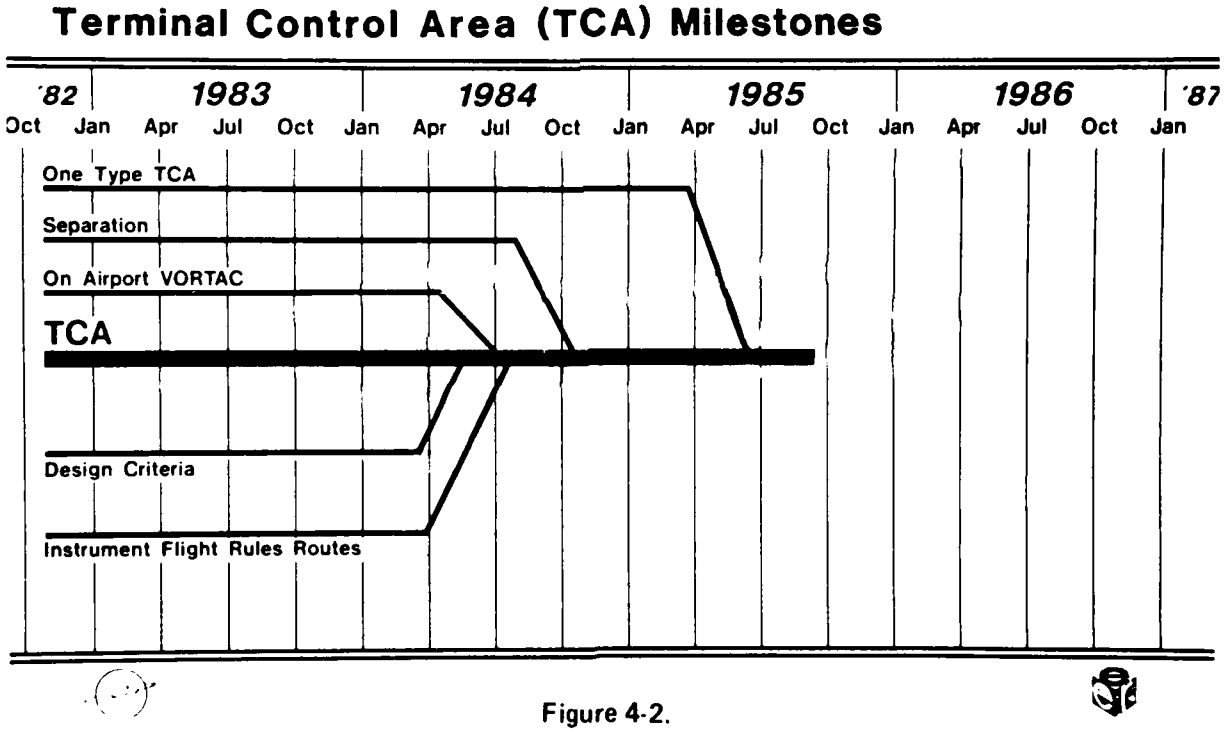


Figure 4-2.

→ In NAR 1-2.1.6, entitled Student Pilot Solo Flight Within a TCA, Task Group 1-2 recommended that FAR 61, Subpart C - Section 61.87(D) be amended to reflect that a student pilot is not authorized to operate an aircraft in solo flight within a TCA unless his pilot logbook has been endorsed within the preceding 90 days by an authorized flight instructor who has provided the student with instruction in TCA operating procedures, and finds, as a result of an actual flight within a TCA, that the student is competent to make a safe solo flight within the TCA environment. It is already current practice, however, that a student pilot's logbook be endorsed by an instructor each 90 days. Such endorsement certifies that a student pilot is competent for solo operation in area(s) designated by the flight instructor. Insofar as the recommendation is already covered by existing regulations, the recommendation will not be adopted.

462 Airport Radar Service Area (ARSA) Enhancement Area

→The ARSA Enhancement Area depicted in Figure 4-3 represents 24 recommendations that suggest the discontinuance of TRSAs and establishment of "Model B" airspace, including the types of services provided and mandatory communications requirements. ARSA implementation begins in the Second Quarter of 1985. Implementation may begin earlier for some recommendations in this set, as indicated by the milestones depicted.

462.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

462.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

Airport Radar Service Area (ARSA) Milestones

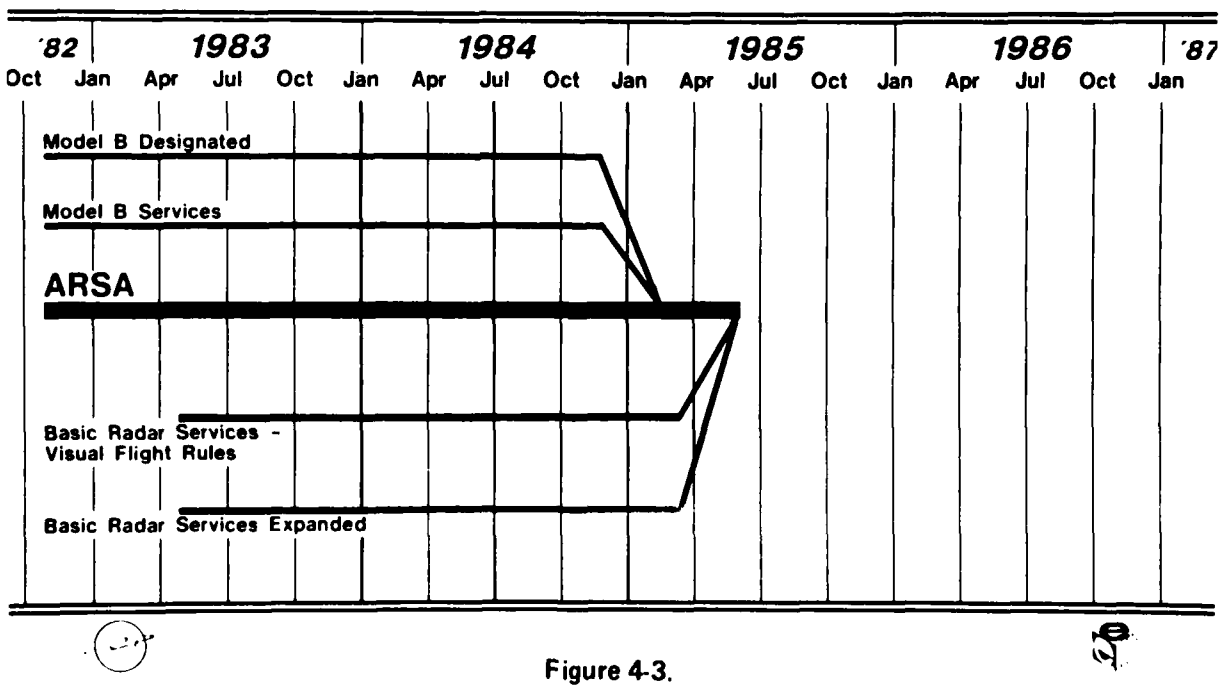


Figure 4-3.

463 Radar Services Enhancement Area

The Radar Services Enhancement Area depicted in Figure 4-4 represents 17 recommendations that emphasize the simplification, standardization, and expansion of services provided under the National Terminal Radar Program. Radar Services implementation begins in the Second Quarter of 1985. Implementation may begin earlier for some recommendations in this set, as indicated by the milestones depicted.

463.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

463.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

Radar Services Milestones

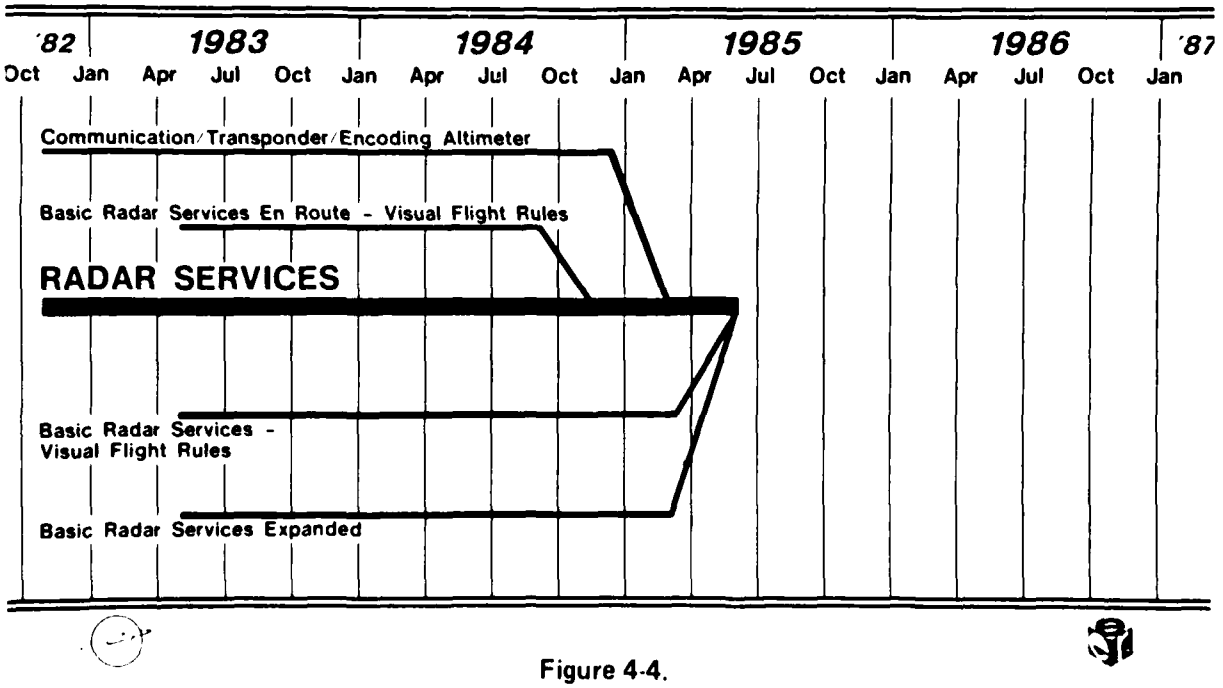


Figure 4-4.

500

EN ROUTE SYSTEM

510 INTRODUCTION

Commercial and other aircraft flying under instrument flight rules (IFR) are monitored by air route traffic control centers (ARTCCs). These centers control an aircraft's route of flight and altitude while it is en route between airports. Another integral part of the en route system is the central flow control facility, which serves as a focal point for evaluating and approving traffic flow redistribution and nationwide management of air traffic flow, and provides authority for initiating system-wide flow control.

These en route centers control all aircraft in the United States operating under instrument flight rules which are not under the control of military or terminal facilities. They provide separation services, traffic advisories, and weather advisories. They also provide visual flight rules (VFR) traffic advisories and fixed route clearances, and assist aircraft in distress. The FAA en route system is also an integral part of the country's national defense system.

FAA's current en route system development programs are aimed at replacing existing air traffic control computer systems with new systems based on evolving technology. The higher levels of automation are being developed to further reduce operational costs, improve safety, improve controller productivity and efficiency, and provide fuel savings for aircraft users. Although large and costly, this program will provide and accommodate future enhancements which best meet the FAA's objectives, and, at the same time, benefit the users of the National Airspace System.

520 BACKGROUND

Today's en route system is largely the product of incremental growth over more than four decades. A long series of singular events and problems has driven decisions regarding airspace classifications, airways, jet routes, and en route center and sector airspace allocations over this time period. Airspace for special use has been established throughout the country to adequately and safely support military operations as these mission requirements have become known. Airways and jet routes were established as traffic flows developed, and they had the added effect of providing the basic structure for en route operations. Sectors were developed among the current ARTCCs to accommodate the growth of air traffic flows between terminal areas. Within this context, NAR task groups have developed recommendations that are aimed at modernizing the en route system.

530 IMPLEMENTATION STUDY

In the En Route System Area, an implementation study concerning flow management may be potentially needed before related NAR recommendations can be implemented.

540 VALIDATIONS

During the review undertaken in the En Route System Area, recommendations were generated which identify potential improvements to the en route system. In addition, in keeping with the third objective of the NAR, which is to revalidate airspace system structure, standards, and procedures in view of state-of-the-art and future technological improvements, several existing en route standards and procedures have been revalidated. These validations are grouped in the areas of airways/routes, the route system concept, and the National Beacon Code Allocation Plan, and are discussed in the following sections. The task group associated

with each validation is listed following each discussion. More detailed information concerning individual validations can be found in the minutes and staff studies associated with the task groups cited.

541 Airway/Routes

In the area of airways and routes, several service validations were made by task groups.

In terms of alternate airway elimination/reidentification, the FAA is currently in the process of reviewing the operational need for, and renumbering of, alternate airways to conform with International Civil Aviation Organization (ICAO) Standards. The ICAO standards do not provide for alternate airways, and the United States has agreed to conform its airway identification system to the ICAO standard with regard to alternate routes by 1985. It was believed that no serious user burden would be imposed by the reidentification program, and that the criteria used by the FAA to determine whether or not to eliminate particular alternate airways was adequate to assure their retention where user and ATC requirements so dictated. (TG 1-3.2)

Discussion related to the need to develop more specific guidelines for airway/route establishment/disestablishment concentrated on whether some sort of empirical criteria should be used in the determination. Existing FAA policy, as contained in FAAH 7400.2, *Procedures for Handling Airspace Matters*, provides for the establishment of an airway wherever a benefit will accrue to users or air traffic control and ATC services can be provided. A determination was made that this guidance has served its purpose well. Furthermore, because so many different factors influence a decision to establish or revoke a route, including local and regional operations, no set of empirical criteria, however extensive, could be considered adequate to address all cases. Agreement was reached that these determinations should continue to rely on pilot/controller subjective judgments. (TG 1-3.2)

One issue discussed in relation to the separation of airway/route establishment from the establishment of controlled airspace was the potential establishment of an area controlled airspace floor throughout the conterminous United States (CONUS). The purpose of this floor would be to provide controlled airspace independent of airways/routes where IFR traffic would be authorized to operate at and above minimum altitudes established according to the following criteria: minimum obstruction clearance altitude (MOCA); adequate VHF omnidirectional radio (VOR) navigational signal coverage minimum altitude; and adequate ATC communications services minimum altitude. The objective in establishing this area controlled airspace floor would be to assure adequate clearance and services for safe pilot navigation, especially when flying off of charted/published airways/routes, and to set the stage for the eventual evolution of navigation within the NAS to an emphasis on random routing.

While noting that an area controlled airspace floor would provide valuable information not otherwise charted or available for many areas of the CONUS, concerns were expressed that implementation would effectively create a lower altitude positive control area, thus depriving VFR traffic of airspace in which it is currently free to fly, and would eventually lead to a 1,200-foot above ground level (AGL) floor across the CONUS, similar to today's virtual coverage of the eastern U.S. with its 1,200-foot AGL transition areas. Separation of airway establishment from controlled airspace establishment was not recommended, therefore, except as provided in NAR 1-3.2.1. (TG 1-3.2)

The advantages/disadvantages of restructuring various altitude strata were discussed (e.g., lowering the floor of the high altitude structure from 18,000 feet to 15-16,000 feet; dropping/raising the floor of the PCA; lowering the jet route ceiling from 45,000 feet to 39,000 feet; extending the VOR airway structure to FL 240;

etc.). A variety of views was expressed, however, no general agreement could be reached concerning these changes. As such, it was agreed that it would be difficult to ascertain the benefits of an altitude restructuring. (TG 1-3.2)

The issue of dedicated airline use of peak hour high density airways was discussed to determine whether this might substantially improve traffic flows and minimize ATC coordination problems during those time periods. A conclusion was reached, however, that peak hour congestion problems arise primarily at the interface between en route operations and terminal operations and that en route traffic was not the most serious problem. No action was taken on this suggestion. (TG 1-3.2)

In discussing airway/route alignments in relation to existing traffic flows, consideration was given to the establishment of VFR routes. FAA's VFR Flyway Planning Charts Program is currently evaluating the efficiency of charted, unpublished routes (flyways) through busy terminal areas. There was a belief, however, that the establishment of a VFR route structure would unduly restrain VFR traffic, which is currently not confined to specific routes point-to-point. Therefore, no recommendation was made to change existing airway/route alignments. (TG 1-3.2)

Under the topic of preferred routes for general aviation traffic, a number of suggestions were discussed, including VFR preferential routes at VFR altitudes; "VFR on top" on preferred routes for general aviation; airfiles; preferred routes at suggested altitudes in terminal areas to minimize conflict with terminal traffic; SIDs/STARs/preferred arrival and departure routes to and from general aviation airports; and the identification of preferred routes on charts.

With regard to VFR preferential routes at VFR altitudes there was a belief that they would restrict VFR pilot navigation freedom more than they would improve VFR traffic movement through congested areas. Agreement was also reached that a procedure for "VFR on top" on preferred routes for general aviation traffic was undesirable and not required on a permanent basis. (TG 1-3.2)

In relation to airfiles, it was noted that the procedures needed to support airfile use were already in place. However, because there was a general belief that the issue of airfiles was an ATC procedural matter not closely related to route issues, no action was taken in this area. (TG 1-3.2)

The fixed RNAV route structure was evaluated tc determine whether a change in FAA policy was required. Earlier, virtually the entire fixed RNAV route system had been deleted due to user-perceived lack of utility, although the administrative/procedural system through which the route structure was created remains intact. Although the deletion of most of the RNAV routes was believed to be appropriate, it was agreed that future user requirements might include designation of fixed RNAV routes between certain points. For this reason, there was agreement that FAA should continue to maintain the administrative framework for the establishment of these routes. (TG 1-3.2)

542 Route System Concept

In this area, a discussion was held concerning whether the current use of radar vectors, supplied by ATC controllers to guide aircraft between points not designated as jet routes, made it acceptable to phase out jet routes.

Although a major reduction in jet routes was not recommended as warranted at this time, it was agreed that the current use of radar vectors to assist aircraft to navigate along random routes should continue as it enhances the current system's ability to handle differing aircraft operator demands efficiently. It was also emphasized that radar vectors have not been, and should not become, a primary method of navigation. (TG 1-3.4)

A discussion was also held to determine whether formal pilot/controller procedures should be established prior to a major elimination of jet routes. Currently, aircraft seeking to operate on random routes or random RNAV usually file jet routes and once airborne, request direct to destination, which usually results in an affirmative clearance. The existing formal procedures for filing a random routing or direct routing are somewhat cumbersome, while the informal procedure is adequate to handle immediate foreseeable demands on the system. The implementation of Operation Free Flight, Phase II, later this year, should shed more light on whether formal procedures are required, and if so, what form they should take. It was generally agreed that the demand for random routings will exceed the capacity of the informal procedure at some point in the future and that a formal procedure will be required at that time. (TG 1-3.4)

543 National Beacon Code Allocation Plan

A proposal to set aside a set of discrete codes for assignment to VFR traffic in terminal areas to assure controller identification of position and thereby increase safety was discussed. It was noted, however, that a discrete code assignment to a VFR aircraft would not of itself assure that the aircraft's position and altitude were known unmistakably to the controller. Furthermore, there are not enough codes for unique non-discrete or discrete code assignment to VFR aircraft. It was also believed that, if implemented, frequency congestion might increase and the assignment of codes would pose bookkeeping problems. The problems associated with the implementation of this proposal would outweigh its potential benefits and therefore no action was taken to change the existing procedures. (TG 2-5.1)

550 FUTURE NAR ENHANCEMENTS TO THE EN ROUTE SYSTEM AREA

Additional recommendations in this area have been developed by the task group on flow management which evaluated the effectiveness of flow management at the national level and studied current automated advancements known as the Traffic Management System Interfacility Flow Control Program.

560 EN ROUTE SYSTEM ENHANCEMENTS IMPLEMENTATION PLAN

Recommendations affecting the operating criteria of the En Route System focus on facilitating Area Navigation (RNAV) integration through operational and procedural changes and revisions to airway/route design and structure. Recommendations identified as En Route System improvement actions currently fall into four Enhancement Areas.

- Airways/Routes
- Air Route Traffic Control Center (ARTCC) Resectorization
- Area Navigation (RNAV) Integration
- Flow Management

→The En Route System and each of the foregoing Enhancement Areas are depicted in Figure 5-1. The central thick line in Figure 5-1 represents 120 recommendations that relate to the En Route System with projected implementation predominantly complete early in the Fourth Quarter of 1986, but extending to the Fourth Quarter of 1992 to complete action on all recommendations in this area.

Implementation milestones for the Enhancement Areas currently identified for the En Route System are more fully described in the following sections. Each section includes a figure that identifies recommendation milestones selected and depicted to represent specific events along the path to achieving overall enhancement in each Enhancement Area. Recommendations that are being either modified and then implemented, partially implemented, or not adopted are discussed in separate sections within each Enhancement Area.

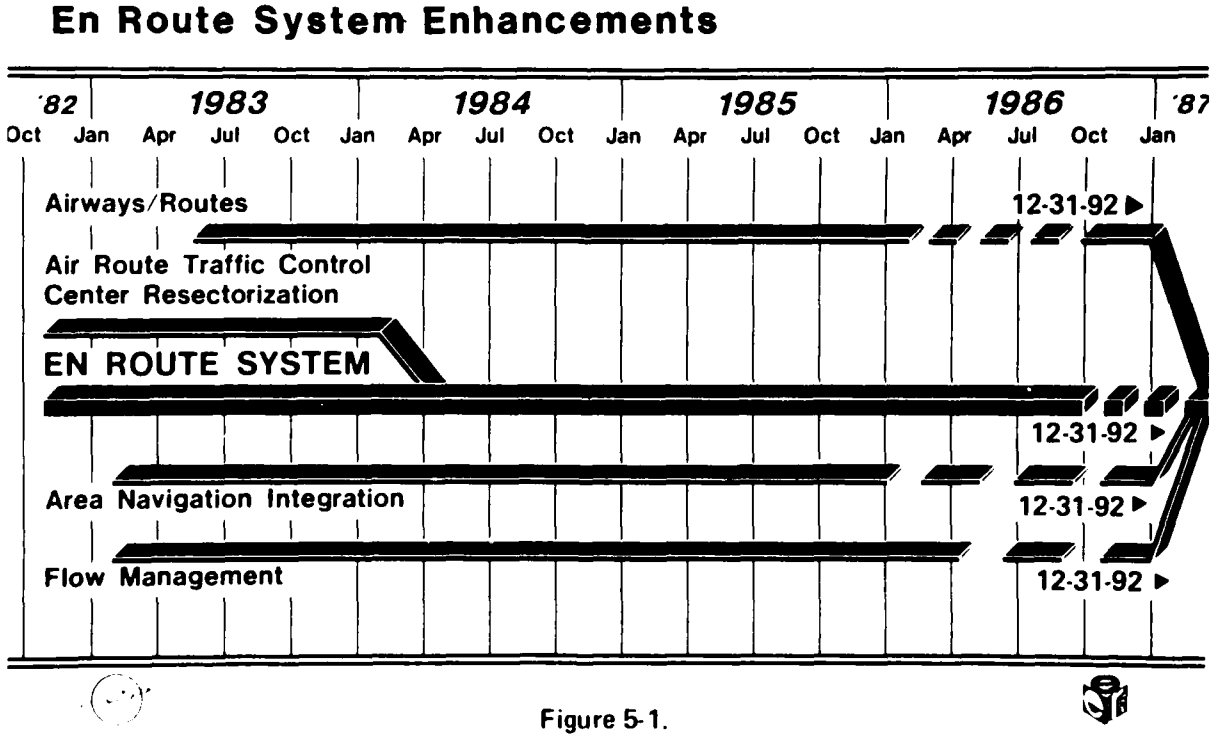


Figure 5-1.

561 Airways/Routes Enhancement Area

The Airways/Routes Enhancement Area depicted in Figure 5-2 represents 46 recommendations that address modifications to airways/routes standards, en route navigational aid networking, simplification of establishment of airways by rulemaking, and the gradual phaseout of published jet routes commensurate with random RNAV route implementation. Airways/Routes implementation begins in the First Quarter of 1986, but extends to the Fourth Quarter of 1992 to complete action on all recommendations in this area. Implementation may begin earlier for some recommendations in this set, as indicated by the milestones depicted.

561.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

561.2 Non-Adopted Recommendations

Two recommendations in this Enhancement Area are not being adopted.

In NAR 1-3.2.12, entitled VOR Networking Program Direction, Task Group 1-3 recommended that the En Route Navigation (VOR) Network Program be redirected. Specifically, it was recommended that in lieu of the lead region concept, an FAA group composed of en route/terminal facility, regional airspace, and Washington Headquarters air traffic personnel should be formed. This group would recommend the optimum site of the VORTACs to best serve the needs of the users and the ATC system. Since the task group completed its review, the VOR Networking Program has been revised and now meets user and ATC needs. Therefore no change in program direction is now necessary.

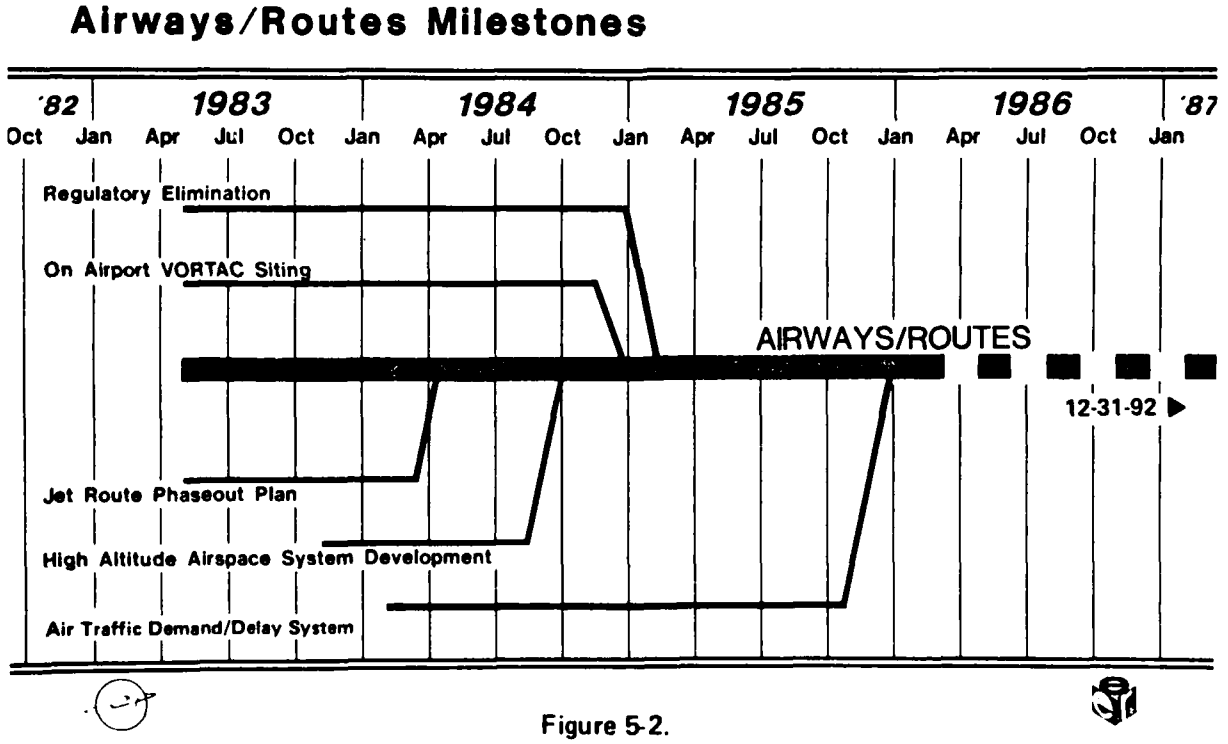


Figure 5-2.

In NAR 1-3.2.4, entitled Jet Routes Improvements, Task Group 1-3 recommended that, in order to simplify pilot navigational responsibility, the FAA eliminate charted holding patterns in the jet route structure unless required to support terminal arrival operations, that substitute routes not be used in the jet route structure whenever ATC radar services are available to provide necessary and temporary course monitoring or guidance, that the charting of intersections depicted as reported points (i.e., named intersection) on jet route charts be eliminated unless required to support terminal arrival or departure operations, and that single direction restrictions contained in jet routes be eliminated. It was determined, however, that limiting charted holding patterns and named intersections to those in support of terminal operations is neither feasible nor desirable and that single direction jet routes and substitute routes are necessary and must be retained. This recommendation, therefore, will not be adopted.

562 Air Route Traffic Control Center (ARTCC) Resectorization Enhancement Area

Although initially planned for NAR task group work, the exigencies of the controller strike required commencement of the ARTCC sectorization review before the NAR charter was final. The National Resectorization Program was designed to improve system layout, optimize airspace, improve productivity, and reduce costs utilizing current technology. Considerations such as flexibility, growth, fuel efficient procedures, great circle routes, and metering programs were an integral part of the program. The basic criteria of the program involved the principle that 200 nautical miles of airspace be provided to en route centers containing the 22 major airports in the United States to accommodate en route metering, establishment of a 135-nautical-mile ring around these airports to provide optimum descent profile procedures (80 nautical miles for shuttle operations), sectorization to support random route operations, sectorization to support major axis flows within the United States, and sectorization to support unique operations (helicopters, flight testing, military operations, and training). The basic program is nearing completion and will result in greater airspace efficiency through increases in usage and flexibility, a reduction of delays, and an increased level of safety.

The ARTCC Resectorization Enhancement Area is depicted in Figure 5-3. ARTCC Resectorization implementation begins in the Second Quarter of 1984. Implementation begins earlier for ARTCCs in some FAA Regions, as indicated by the milestones depicted.

562.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modifed and then implemented.

562.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

ARTCC Resectorization Milestones

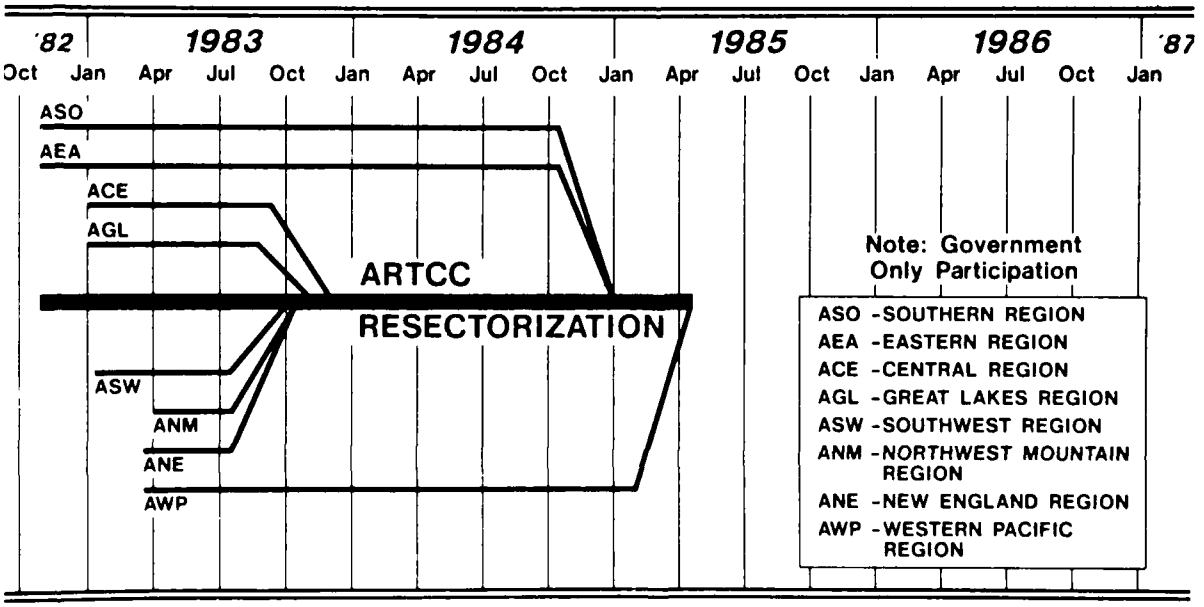


Figure 5-3.

664 Flight Information Enhancement Area

The Flight Information Enhancement Area depicted in Figure 6-5 represents 125 recommendations that focus on improvements to the NOTAM system, modifications to NOTAM criteria, and several specific changes to nearly all flight informational products (excluding aeronautical charts which are covered under the Aeronautical Charts Enhancement Area). Flight Information implementation begins by the First Quarter of 1986, but extends to the end of the Fourth Quarter of 1992 to complete action on all recommendations in this area. Implementation may begin earlier for some recommendations in this set, as indicated by the milestones depicted.

664.1 Limited/Partial and Modified Recommendations

There is one recommendation in this Enhancement Area that is being partially implemented.

In NAR 1-3.1.5, entitled Refinement of Flight Plan Filing Procedures, Task Group 1-3 recommended that filing procedures for area navigation flight plans be refined for radar environments and developed for non-radar environments . In addition, the capability to use latitude and longitude coordinates and/or VOR/VORTAC fix/radial/distance for filing should be established and the requirements publicized in consideration of user and ATC needs. Effective January 1, 1984, random RNAV routes were implemented on a limited basis. Based on the implementation of the program, all of the requirements identified in NAR 1-3.1.5 with the exception of random routes in a non-radar environment have been satisfied.

664.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

Flight Information Milestones

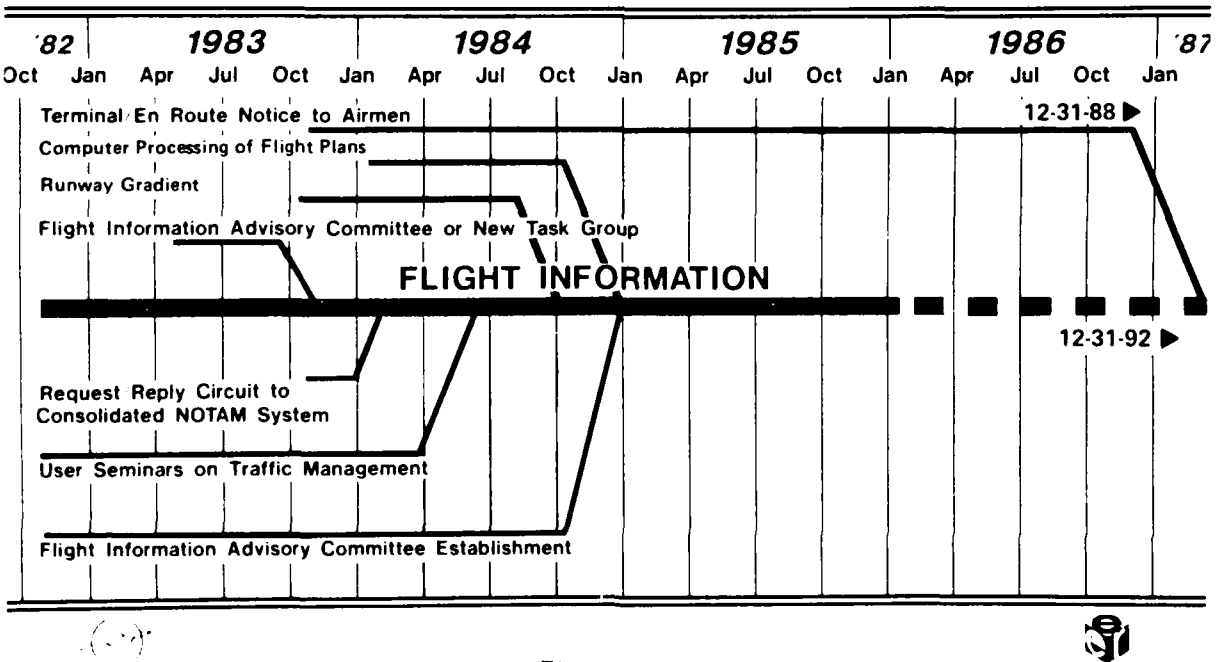


Figure 6-5.

suggested revision to FAR 121.601 unacceptably narrows the scope of the present regulation, the recommendation will not be adopted.

In NAR 1-4.1.26, entitled Pilot Aviation Weather Knowledge Requirements, Task Group 1-4 recommended that FAR Parts 61 and 141 be amended to reflect the aviation weather knowledge that is required by pilots to operate in todays's complex ATC system. The group further suggested that the FAA examine the possibility of a multi-faceted testing procedure to require a passing grade in each of the necessary elements, primarily aviation weather, to obtain a pilot's certificate. Sections 61.65(B)(3), Instrument Rating, 61.93(B)(2)(II), Student Pilot Cross Country Requirements, 61.105(A)(3), Private Pilots, 61.125(B)(2), Commercial Pilots, 61.153(C), Airline Transport Pilot, and Part 141, Appendix A, Item 2(C), Private Pilots, Appendix C(2) and (C), Commercial Pilots, currently contain requirements for aviation weather instruction. Insofar as there was no evidence presented to support a lack of knowledge on the part of pilots, and therefore justification for additional rules or for a separate written examination on aviation weather, this recommendation will not be adopted.

663 Weather Enhancement Area

The Weather Enhancement Area depicted in Figure 6-4 represents 36 recommendations that focus on improvements to weather products, user requirements, the weather data dissemination system, need for an FAA Weather Program Office, and user access to real-time hazardous weather data. Weather implementation begins in the Fourth Quarter of 1986 predominantly, but will extend to the First Quarter of 1990 to complete action on all recommendations in this area. Several recommendations have been implemented, as reflected by the milestones depicted.

663.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

663.2 Non-Adopted Recommendations

Two recommendations in this Enhancement Area are not being adopted.

In NAR 1-4.1.22, Pilot Access to Weather Radar Network Display, Task Group 1-4 recommended that FAR 121.601 be revised to reflect that the aircraft dispatcher shall provide the pilot-in-command with direct access to real-time NWS weather radar network displays and all available weather reports and forecasts that may effect the safety of flight including adverse phenomena such as clear air turbulence, thunderstorm activity, and low level windshear for each route to be flown and each airport to be used. By current regulation, however, the air carrier pilot is provided with all available current and forecasted weather information. Many carriers have weather radar information available and include it as part of the current weather. FSS specialists are available to assist all pilots with weather briefings. Insofar as the

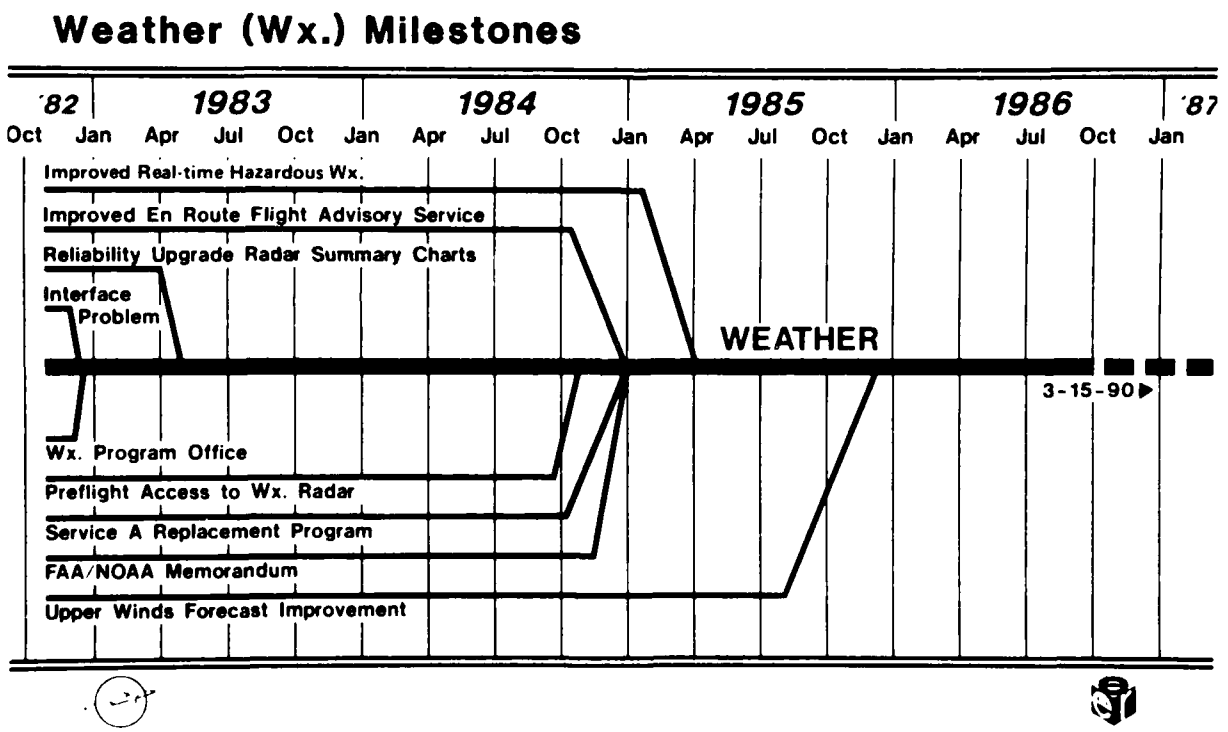


Figure 6-4.

provided to the FAA as a data element. Insofar as the FAA would not know, therefore, that a particular bridge is high rise, there is no justification to develop a symbol to depict such information. This recommendation, therefore, will not be adopted.

→In NAR 1-6.3.30, entitled IAP Contents-Radar Approach Minimums, Task Group 1-6 recommended that radar minimums be depicted on appropriate civil low altitude IAPs as outlined in IACC requirement documentation number 197. The majority of civil IAPs currently designated are for basically equipped, part-time, variable service airports for basically equipped aircraft. Although it would be ideal not to burden pilots with the clutter that is caused by the designation of additional minimums, some depictions have been necessary in order to serve the widest range of eligible airports, aircraft, and pilots and to consider such variables as optional stepdown fix, part-time tower, or limited altimeter reporting capability. The additional depiction of radar minimums on civil IAPs is unneeded, undesired, and impractical. Therefore, this recommendation will not be adopted.

662 Aeronautical Charts Enhancement Area

→ The Aeronautical Charts Enhancement Area depicted in Figure 6-3 represents 232 recommendations that address specific improvements to RF/IAP/VFR charts, suggest that prototyping be extensively used in the future, and recommend reinstatement of the Flight Information Advisory Committee. Aeronautical Charts implementation begins in the Second Quarter of 1986 for the majority of recommendations, but extends to the first quarter of 1990 to complete action on all recommendations in this area. Implementation may begin earlier for some recommendations in this set, as indicated by the milestones depicted.

662.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

662.2 Non-Adopted Recommendations

→ Three recommendations in this Enhancement Area are not being adopted.

In NAR 1-6.1.26, entitled Architectural Profile for Bridge Depiction, Task Group 1-6 recommended that bridges be depicted to define architectural profile where practical. It was determined, however, that architectural features of bridges cannot be symbolized on charts because the designs are not included as a data element in the information provided to the FAA and the scale on the charts does not permit detailing architectural style (i.e., the symbol needed to show distinctive style would be grossly exaggerated). Therefore, this recommendation will not be adopted.

→ In NAR 1-6.1.27, entitled Chart Depiction of High Rise Bridges, Task Group 1-6 recommended that a new symbol be developed to depict high rise bridges. The fact that a bridge is high rise, however, is not information that is

Aeronautical Charts Milestones

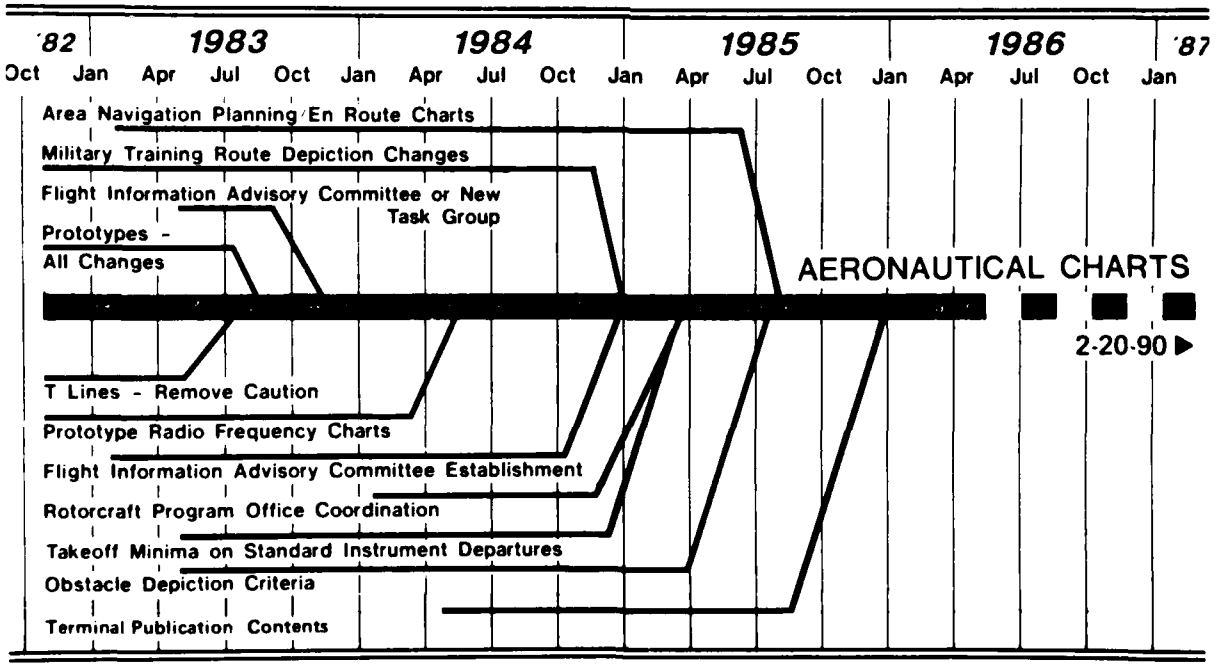


Figure 6-3

661 Flight Service Station (FSS) Enhancement Area

The FSS Enhancement Area depicted in Figure 6-2 represents 34 recommendations that specifically address improvements in Flight Service Stations' ability to disseminate data concerning military flight activity on Military Training Routes and in Special Use Airspace, improved pilot briefing capability through access to real-time information, replacement of the Service A teletypewriter system, improved dissemination of weather information, and FAA prioritization of resources to Flight Service Stations. FSS implementation begins in the Third Quarter of 1986 for most recommendations, but extends to the end of the Second Quarter of 1990 to complete action on all recommendations in this area. Implementation may begin earlier for some recommendations in this set, as indicated by the milestones depicted.

661.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

661.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

Flight Service Station (FSS) Milestones

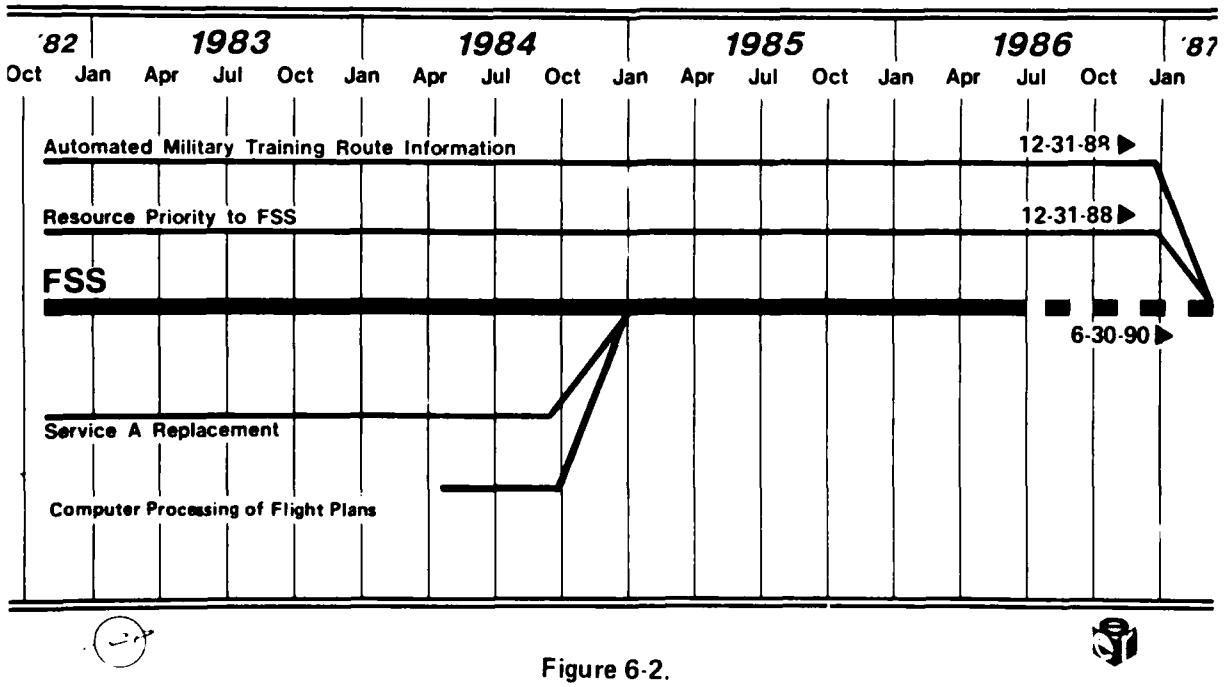


Figure 6-2.

660 FLIGHT SERVICE SYSTEM ENHANCEMENTS IMPLEMENTATION PLAN

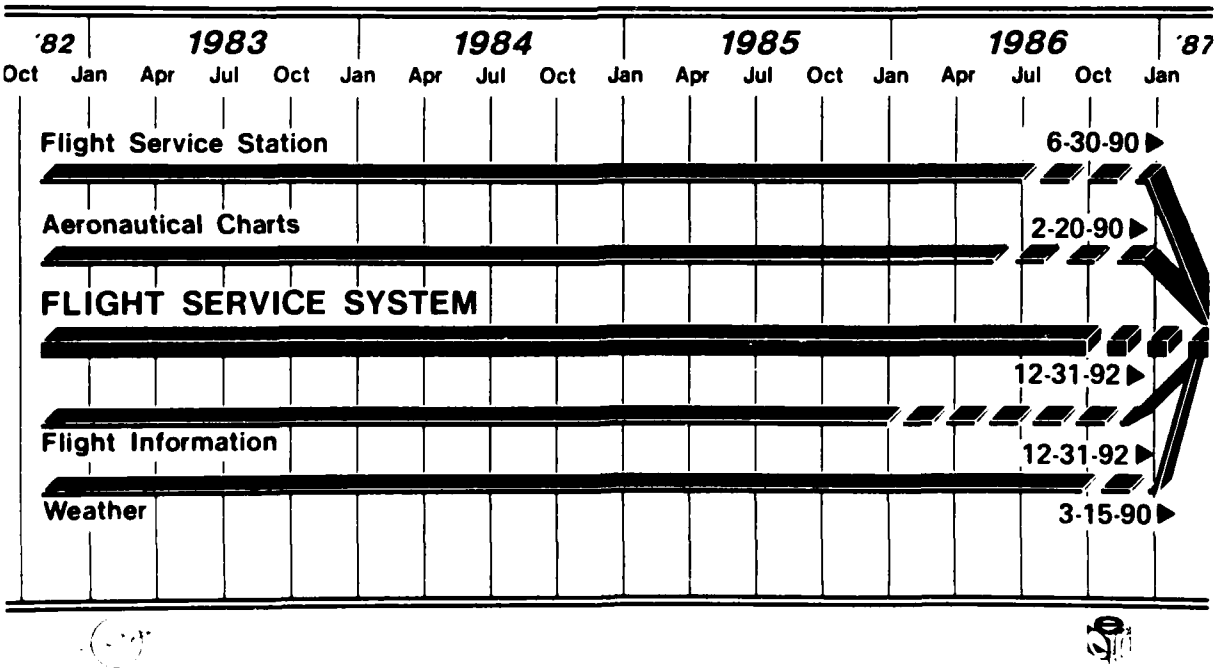
Recommendations in the area of flight services center on improving products and information dissemination. Recommendations identified as Flight Service System improvement actions currently fall into four Enhancement Areas:

- Flight Service Station
- Aeronautical Charts
- Weather
- Flight Information

The Flight Service System and each of the foregoing Enhancement Areas are depicted in Figure 6-1. The central thick line in Figure 6-1 represents 392 recommendations that pertain to the Flight Service System with projected implementation predominantly complete at the beginning of the Fourth Quarter of 1986, but extending to the Fourth Quarter of 1992 to complete action on all recommendations in this area.

Implementation milestones for the Enhancement Areas currently identified for the Flight Service System are more fully described in the following sections. Each section includes a figure that identifies recommendation milestones selected and depicted to represent specific events along the path to achieving overall enhancement in each Enhancement Area. Recommendations that are being either modified and then implemented, partially implemented, or not adopted are discussed in separate sections within each Enhancement Area.

Flight Service System Enhancements



and issue a NOTAM relating to an airport condition that affects safety of flight, no agreement could be reached on various proposals. Existing procedures and standards were retained. (TG 3-1.1)

Other topics discussed included NOTAM formatting and dissemination, and National Flight Data Center (FDC) and international NOTAMs. There was general agreement that formatting should be handled internally and that dissemination of NOTAMs had been integrated in other discussions. Since FDC NOTAMs will be put into the Consolidated NOTAM System (CNS), it was agreed that no further action needed to be taken. There was also general agreement that existing policies and procedures relating to international NOTAMs were adequate and that no further changes were necessary. (TG 3-1.1)

643 Flight Plan Format

In the area of Flight Plan Format, one discussion concerned the need for the "alternate airports" block appearing on FAA Flight Plan Form 7233-1 and whether the block could be eliminated as a flight plan filing item. Although alternate airport planning and identification are required under FAR 91.83, situations often preclude the use of the alternate airport identified; normally, a pilot will fly to the next available airport having favorable weather, based on fuel supply. Notwithstanding these situations, there was general agreement that the requirement to plan for an alternate airport remained valid and that inclusion of this information in the flight plan was an expeditious method of verifying that planning. (TG 3-1.2)

Problems being experienced in international flights, specifically civil aircraft entering the United States from the Caribbean, were also discussed. Sometimes destination airport tie-in FSSs do not get flight plan information or are not aware of landings where flight plans have been submitted. This problem cannot be resolved since the FAA does not have the authority to establish procedures for foreign operations. A related discussion concerned the procedures involved with filing a defense VFR (DVFR) flight plan. Any flight that enters an Air Defense Identification Zone (ADIZ) is required to file a DVFR flight plan. There was general agreement therefore, that no change to existing procedures is necessary. Other discussion related to the inclusion of route information on the flight plan form. The main reason for filing VFR flight plans is to aid in search and rescue operations. It was agreed that knowing flight route information was necessary to aid in these efforts. (TG 3-1.2)

It was suggested that address/telephone information be abbreviated on the flight plan form for IFR flights by referencing a base airport or FSS. Although many pilots have provided this information to their base airports, it is not always readily accessible especially outside of normal working hours. There was general agreement that the information should be provided in the flight plan. Annotating additional items not already required on the flight plan form for VFR flights was also discussed. It was suggested, however, that completing the items already appearing on the VFR flight plan form consume much time and that other items should not be included. (TG 3-1.2)

650 FUTURE NAR ENHANCEMENTS TO THE FLIGHT SERVICE SYSTEM AREA

Military flight plan formats and requirements will be studied for commonality and possible combination into one, simple, uniform format. Airport information service broadcasts will be reviewed to identify essential and nonessential information in order to ensure that broadcasts are short and concise.

In relation to VFR charts, no recommendations were made concerning the current depiction of surface geology, which refers to localized phenomena such as swamps, marshes, and sand areas. These features were considered to be useful so long as they did not interfere with the depiction of higher priority items. (TG 1-6.1)

In relation to IAP and CVFP charts, requirements for the depiction of Microwave Landing System (MLS) approaches were discussed. There was a belief, however, that not enough technical data was available on which to base a set of recommendations regarding MLS approach charting. Because it was suggested that charting specifications should only be developed as MLS procedure requirements become established, no action on MLS approach depiction was considered currently feasible. (TG 1-6.3)

The draft charting specification for CVFP charts was also reviewed. The specifications were developed with extensive user input and reflect a consensus of opinion. No formal recommendations were generated. Sample CVFP charts were provided for review during discussions on the reorganization of the IAP volume. It was agreed that CVFPs should be placed after the IAPs and before the airport sketch and that, if published, the CVFP plate would be the last in the set for any specific airport. (TG 1-6.3)

Discussion on runway gradients yielded the decision not to recommend any changes in the way gradients are computed or depicted. In addition, no changes to the depiction of runway lengths and glide slopes were recommended. (TG 1-6.3)

→A review of SID and STAR charts led to general agreement to retain the charts' current legend symbologies and plate cartographic standards. Several proposals to modify the existing STAR chart were considered, including changing the depiction of the navigation box, adding minimum safe altitude information through the use of contour envelopes, and eliminating the airspeed restrictions identified. After thorough evaluation, however, the chart was retained as designed. (TG 1-6.4)

→In relation to the A/FD, the directory legend was retained with respect to the following information fields: city/airport name, NOTAM service, location identifier, geographic position of airport, charts, instrument approach procedures, elevation, rotating light beacon, traffic pattern altitude, airport of entry and landing rights airport, and certificated airport. In addition, there was general agreement to retain the Special Notices, Air Route Traffic Control Center (ARTCC), General Aviation District Office (GADO)/Flight Standards District Office (FSDO), very high frequency omnidirectional range station (VOR) check, parachute, and chart bulletin sections of the directory as at present. (TG 1-6.4)

Private heliport depiction guidelines were discussed extensively. Currently, private heliports are depicted for landmark value only, and areas having extensive helicopter operations are identified on sectional charts by a note. After discussion, it was agreed that the current guidelines for depiction were satisfactory. (TG 2-4.3).

642 Notice to Airmen (NOTAM)/Flight Data Dissemination

In this area, the authority to originate Notice to Airmen (NOTAM) information and whether airport certification inspectors can originate NOTAM information concerning an airport condition which affects safety of flight over the objections of the airport manager was discussed. This authority is specified in FAR Part 139. Current FAAH 7930.2A procedures do not allow airport inspectors to override airport management on airport conditions; and although an inspector can decertify an airport, it was agreed that the procedure takes too long while users need to be informed about an unsafe airport condition as soon as possible. Although there was some feeling that airport inspectors should have the authority to originate

630 IMPLEMENTATION STUDIES

→The Airspace, Rules, and Aeronautical Information Division and Cockpit Technology Office of the FAA have promulgated and issued prototype charts which are in compliance with the Interagency Air Cartographic Committee (IACC) specifications and recommendations formulated by the charting task groups. User input suggested that readability and reduction of clutter were prime concerns. Circulation of the prototypes and special in-flight operational confirmation will elicit further comments which will be considered prior to adopting the revised charts. The section that follows describes more fully the objectives of this implementation study.

In addition to the Aeronautical Charts Prototyping and In-Flight Operational Confirmation, two other implementation studies may be potentially needed before other related NAR recommendations can be implemented in this area. They include the NOTAM System/Services Study and Data Management Support Services Study.

631 Aeronautical Charts Prototyping and In-Flight Operational Confirmation

→ The objective of the Aeronautical Charts Prototyping and In-Flight Operational Confirmation Study is to determine the in-flight utility, clarity, and readability of prototype charts. This effort is a result of Task Group 1-6.1 recommendations which stressed the necessity of prototyping and evaluating the effectiveness and useability of aeronautical charts prior to actual implementation. The Cockpit Technology Program Office is conducting the in-flight operational confirmation, which includes both helicopters and fixed-wing aircraft. The RF Chart prototypes to be used in this in-flight operational confirmation have been developed and are under evaluation, and the AIP chart prototypes will be available early in 1985. A final report on the VFR prototype charts will also be completed early in 1985.

640 VALIDATIONS

→During the review undertaken in the Flight Service System Area, recommendations have been generated which identify potential improvements in the area of Flight Services. In addition, in keeping with the third objective of the NAR, which is to revalidate airspace system structure, standards and procedures in view of state-of-the-art and future technological improvements, several existing standards and procedures have been revalidated. These validations are grouped in the areas of charts and chart products, NOTAM/Flight Data Dissemination, and Flight Plan Format, and are discussed in the following sections. The task group associated with each validation is listed following each discussion. More detailed information concerning individual validations can be found in the minutes and staff studies associated with the task groups cited.

641 Charts and Chart Products

→In its review of charts and chart products, task groups validated various charting standards relating to VFR charts, Instrument Approach Procedures (IAP) Charts, Charted Visual Flight Procedures (CVFP) Charts, Standard Instrument Departure (SID) Charts, Standard Terminal Arrival (STAR) Charts, and the Airport/Facility Directory (A/FD).

In relation to the provision of pilot navigation information on charts in the absence of routes, a discussion was held to determine whether flight data, normally charted in association with designated routes, should continue to be charted if and when a particular route is revoked. Because of the incremental or evolutionary nature of route elimination that is envisioned, it was suggested that no major gaps in information would soon appear on navigation charts, although there would be no need to provide such information if a route was revoked. At some point in the future, however, a sufficient number of routes may be revoked to warrant the charting of flight data on an area basis. This will assist pilots flying off-route as well as the controllers providing services to them. (TG 1-3.4)

600

FLIGHT SERVICE SYSTEM

610 INTRODUCTION

More than 300 FAA Flight Service Stations (FSSs) offer a broad range of preflight and in-flight services aimed at general aviation (or non-airline) pilots. These services include flight plan acceptance, preflight weather briefings, en route communication with VFR aircraft, assistance to pilots in distress, aviation weather information dissemination, radio navigation station monitoring, notice to airmen (NOTAM) provision, and assistance to search and rescue units in locating missing aircraft.

Flight service stations vary in size from very small facilities to large ones employing more than 100 people. At certain locations, flight service stations take weather observations, issue airport advisories, provide en route flight advisory service and advise customs and immigration officials of transborder flights. The stations also have communications equipment for relaying information to towers and air traffic control centers and for various emergency services.

Of all the FSS services, none is more important to safety than the provision of information related to weather. The FAA aviation weather system collects weather information and distributes it to both pilots and agency operations personnel. Weather information is collected largely with electromechanical devices that give wind direction and velocity and measure cloud heights. Weather maps and low-speed teletypewriters are also used.

FAA long-range surveillance radars also provide two levels of contours to outline weather on en route radar displays for controllers and for center weather service unit (CWSU) meteorologists at the en route centers. In addition, other aviation weather information comes in from various sources, including the National Weather Service (NWS) and pilot reports.

The agency depends on telephones and radio voice broadcasts, including advisories made over VOR radio stations used for navigation, to get weather information to pilots. At some locations, voice recordings disseminate mass weather information. For preflight briefings and in-flight advisories, direct communications between the pilot and the flight service station specialist are used.

Flight services will be improved for pilots by giving them direct access to weather information, flight delay information, both in the air and on the ground, and flight plan filing. Aviation weather services will be improved in quality and timeliness, thus improving safety and saving fuel.

The automation of flight services and related aviation weather systems will allow consolidation of facilities, which will reduce operating costs significantly, and provide more usable and current information to en route and terminal controilers.

620 BACKGROUND

Although a considerable amount of work has been underway in recent years, the user community has stated that the FAA currently lacks the basic systems for gathering and disseminating several types of flight data for users of the National Airspace System. These involve information relative to weather, military operations, and aeronautical chart products which meet user needs. Within this context, NAR task groups have formulated numerous recommendations aimed at causing rapid improvements in this crucial area.

564 Flow Management Enhancement Area

The Flow Management Enhancement Area depicted in Figure 5-5 represents 42 recommendations that focus on Traffic Management Units' (TMU) functions, provision for adding weather and military coordination functions to the TMU, need for ATC system demand and delay program for real-time analysis purposes, expansion of delay reporting airports with an objective of including all airports when the automation capability exists, need for seminars with user organizations regarding development of traffic management concepts, reestablishment of regional Air Traffic Advisory Committees, and a review of interfacility letters of agreement to ensure that traffic flow restrictions which are imposed are applied only when necessary and unnecessary restrictions are eliminated. Flow Management implementation begins in the Second Quarter of 1986 for the majority of recommendations, but extends to the Fourth Quarter of 1992 to complete action on all recommendations in this area. Implementation may begin earlier for some recommendations in this set, as indicated by the milestones depicted.

564.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

564.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

Flow Management Milestones

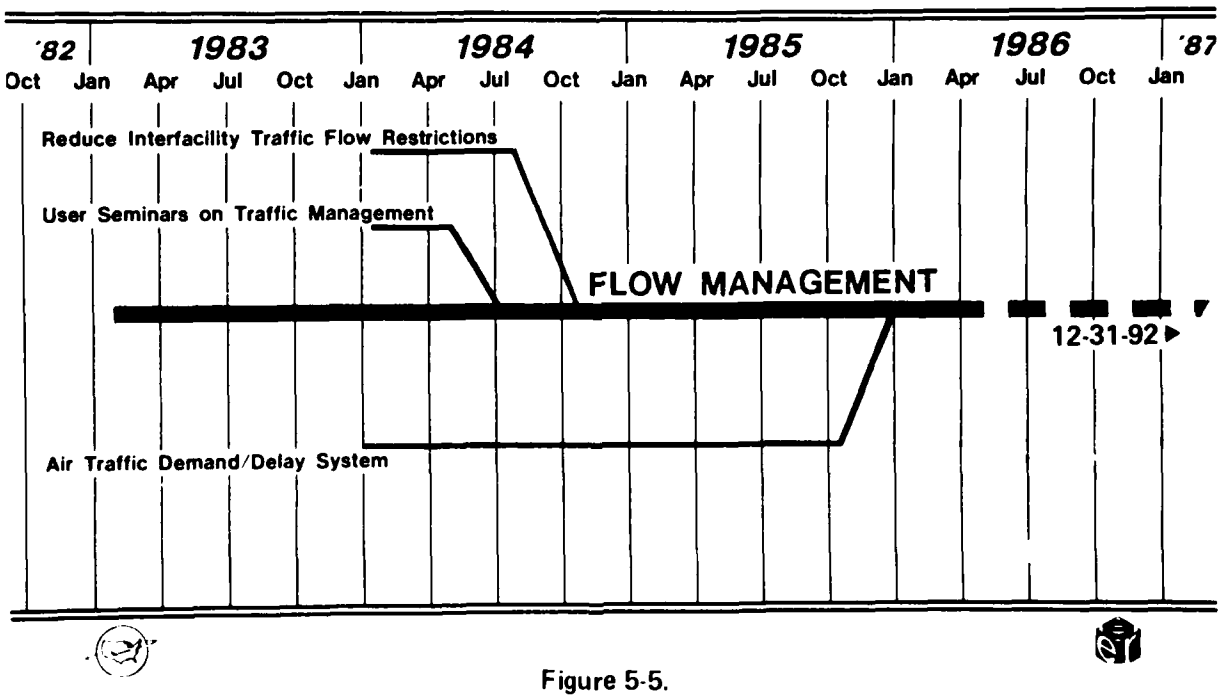


Figure 5-5.

due to the system restoration program, the introduction of the Traffic Management Unit Program, and existing system capacity. An Operation Free Flight-type evaluation may be appropriate in the future.

563.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

563 Area Navigation (RNAV) Integration Enhancement Area

→ The RNAV Integration Enhancement Area depicted in Figure 5-4 represents 33 recommendations that focus on identifying problem areas which inhibit effective RNAV integration into the system, the need for an RNAV Planning/En Route Chart, compatible airborne and ATC ground equipment standards, and measures to encourage an immediate increase in random RNAV routes. RNAV Integration implementation begins in the First Quarter of 1986 for the majority of recommendations, but extends to the Fourth Quarter of 1992 to complete action on all recommendations in this area. Implementation may begin earlier for some recommendations in this set, as indicated by the milestones depicted.

Early in 1984, unrestrained random RNAV routings were implemented in the en route system at and above FL 390, and planning is currently being conducted which will eventually lead to a broadened program.

563.1 Limited/Partial and Modified Recommendations

One recommendation in this Enhancement Area is being partially implemented. NAR 1-3.1.3, entitled Operation Free Flight Expansion, recommended expanding the scope and application of concepts demonstrated in Operation Free Flight. The expanded program, to include additional users (including helicopters and small-fixed-wing aircraft) and additional random RNAV flights and altitudes, called for implementing techniques and procedures as soon as they were validated. It was determined, however, that the expanded random RNAV route procedures in the high altitude structure taking effect in January 1984 obviated the need for an Operation Free Flight-type evaluation in that area, while evaluation at lower altitudes was not deemed appropriate at the time

Area Navigation (RNAV) Integration Milestones

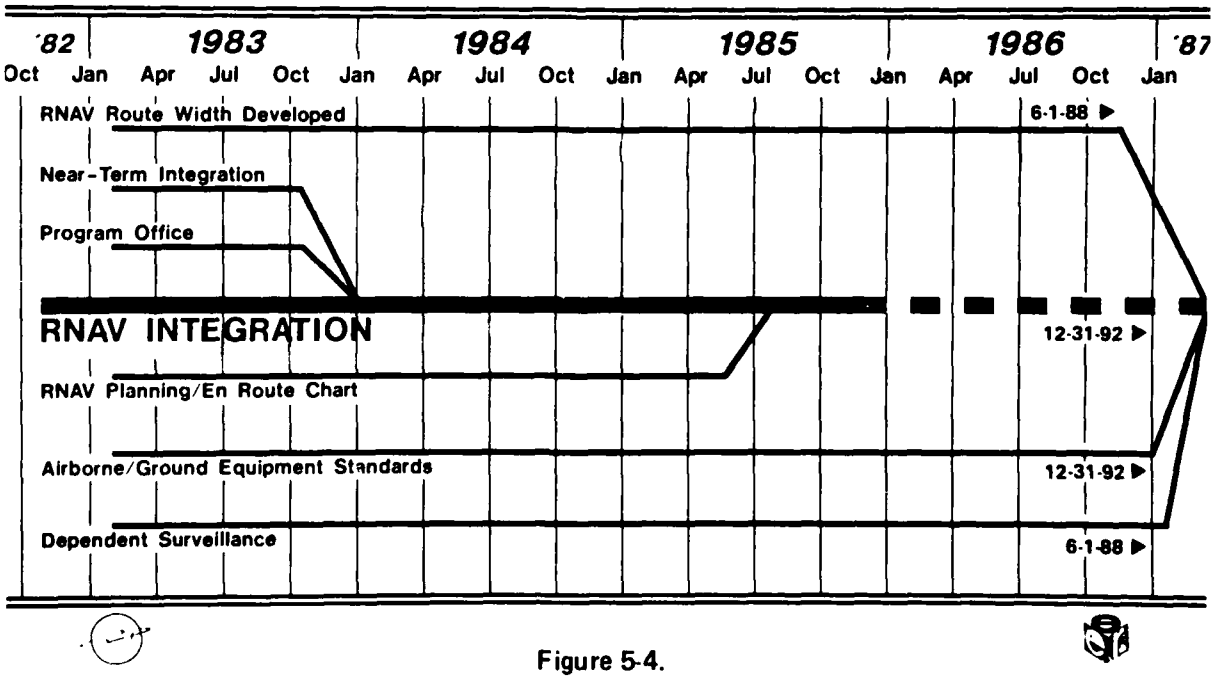


Figure 5-4.

700

AIRSPACE SYSTEM STRUCTURE

710 INTRODUCTION

The United States airspace system has evolved from a simple structure into a very complex system. To meet operational requirements over the years, it has been subdivided and modified. Today, it has 12 different airspace designations, each of which has specific operational and service requirements as well as unique dimensions.

The thrust of NAR task groups in this System Area has been to determine whether U.S. airspace system structure concepts and classification should be revised to simplify and standardize airspace designations and to achieve border commonality. Task groups that have contributed recommendations to this System Area have studied military training routes (MTRs), special use and joint-use airspace allocations, terminal airspace, mandatory communication areas, the U.S./Canada/Mexico interface, and U.S. airspace reclassification.

720 BACKGROUND

Airspace classifications throughout the National Airspace System (NAS) are complex and, in many cases, redundant and overlapping. Yet, airspace is the fundamental component of the system that is a finite asset. Accordingly, airspace structure constitutes a separate System Area which cuts across all operations within the NAS. For this reason, recommendations from the NAR that address parts of the airspace structure are being grouped separately as they are formulated. This will assist in identifying fundamental changes to the NAS structure which need to be fully integrated within Federal Aviation Regulations, ATC procedures, and flight information services.

As one part of the NAR study areas, Task Group 1-7 conducted a review of an FAA developed model for reclassifying United States airspace. Other proposals were also studied, such as the pending Canadian airspace reclassification and various proposals being considered by ICAO. Concurrently, Task Group 1-5 conducted a review of the United States/Canada/Mexico interface. From the task groups, several recommendations were developed which address airspace reclassification in the United States.

→ In conducting these reviews and developing recommendations, the task groups were not necessarily embracing reclassification as a vitally needed action in the near-term. Rather, most recommendations were intended to be advisory to the FAA, as the agency evaluates U.S. airspace classifications with respect to international changes. Moreover, the immensity of such a task gave rise to numerous questions regarding cost effectiveness and effect on flight regulations and ATC procedures since these are interrelated and interconnected in many cases to airspace classes. Accordingly, the Airspace, Rules, and Aeronautical Information Division of the FAA will use these recommendations and associated comments to formulate an Advance Notice of Proposed Rulemaking (ANPRM) on the subject of airspace reclassification will be circulated for public comment early in 1985. The ANPRM comment period will extend for 90 days to give all interested parties ample time to evaluate the proposal and provide cogent comment.

Recommendations concerning airspace reclassification have been included in the Infrastructure and International Interface Enhancement Areas of this plan.

730 IMPLEMENTATION STUDIES

In the Airspace System Structure System Area, one implementation study on special use airspace policy is already ongoing. It is described more fully in the following section.

Two other studies which are viewed as potentially needed before related NAR recommendations can be implemented include airspace reclassification and separation from special use airspace.

731 Special Use Airspace Policy Development

A conference on Special Use Airspace was convened in September 1983 in response to NAR task group deliberations which identified the need to review special use airspace policy and procedures. The objective of this initial working group, which met during the week of September 19, was to lay the groundwork for the establishment of a uniform policy regarding special use airspace, unbiased by special interests. Twenty-four individual and related recommendations were formulated which addressed the need for a consistent, nationwide policy; the requirement to revise handbooks; the need for a dedicated FAA staff to continuously review and assess special use airspace requests and usage; and the need to evaluate the concept of supersonic flight and its effects on "see and avoid"-type procedures. A summary report was generated on the proceedings. This comprehensive review of FAA policy will continue, with implementation of several recommendations expected in the near-term.

740 VALIDATIONS

As a result of the review undertaken in this system area, many recommendations have been generated that simplify present airspace designations as well as the airspace classification system. In addition, other standards and concepts were validated by task groups, based on the third objective of the NAR, which is to revalidate airspace system structure concepts and classification in view of state-of-the-art and future technological improvements. These validations are grouped in the areas of Airspace Classification Application and Pilot Requirements and are discussed in the following sections. The task group associated with each validation is listed following each discussion. More detailed information concerning individual validations can be found in the minutes and staff studies associated with the task groups cited.

741 Airspace Classification Application

During the review of the airspace classification model developed by a sub-group of TG 1-7.1, one discussion related to Class D airspace concerned the possibility of raising the floor of controlled airspace to altitudes above 1,200 feet above ground level (AGL). Canada's floor is 2,200 feet AGL, while Mexico uses 3,000 feet AGL; a compromise of 2,700 feet AGL was suggested for the United States and the relative merits of the proposal were discussed. It was agreed, however, that the FAA should provide factual justification before proposing any change to the current standard, which was therefore retained. In addition, proposed Class E airspace, which does not differ significantly from today's airspace structure except that its definition is included in the proposal, was also revalidated by the group. (TG 1-7.2)

742 Pilot Requirements

As a starting point for considering pilot certification requirements as they apply to the airspace reclassification model proposed in TG 1-7.2, the aeronautical knowledge requirements mandated by FAR, Part 61, Subparts C, D, E and F were reviewed in detail. Current procedures and tests were found to be adequate to ensure an acceptable level of air safety. A general consensus was reached, therefore, that they be retained as presently written. (TG 1-7.3)

750 FUTURE NAR ENHANCEMENTS TO THE AIRSPACE SYSTEM STRUCTURE

International delegated airspace has been reviewed and recommendations have been formulated to promote commonality and simplification.

760 AIRSPACE SYSTEM STRUCTURE ENHANCEMENTS IMPLEMENTATION PLAN

Task group recommendations concerning Airspace System Structure focus on improvements in terminal airspace design/simplification, modifications to the high altitude en route structure, airspace compatibility with Canada and Mexico, airspace reclassification, and design criteria/policy dealing with airspace for special use and military training routes (MTRs). Recommendations identified as Airspace System Structure improvement actions currently fall into four Enhancement Areas.

- Infrastructure
- International Interface
- Airspace for Special Use
- Military Training Route

The Airspace System Structure and each of the foregoing Enhancement Areas are depicted in Figure 7-1. The central thick line in Figure 7-1 represents 109 recommendations that relate to Airspace System Structure with implementation predominantly complete in the First Quarter of 1986, but extending to the Fourth Quarter of 1992 to complete action on all recommendations in this area.

Implementation milestones for the Enhancement Areas currently identified for the Airspace Structure System Area are more fully described in the following sections. Each section includes a figure that identifies recommendation milestones selected and depicted to represent specific events along the path to achieving overall enhancement in each Enhancement Area. Recommendations that are being either modified and then implemented, partially implemented, or not adopted are discussed in separate sections within each Enhancement Area.

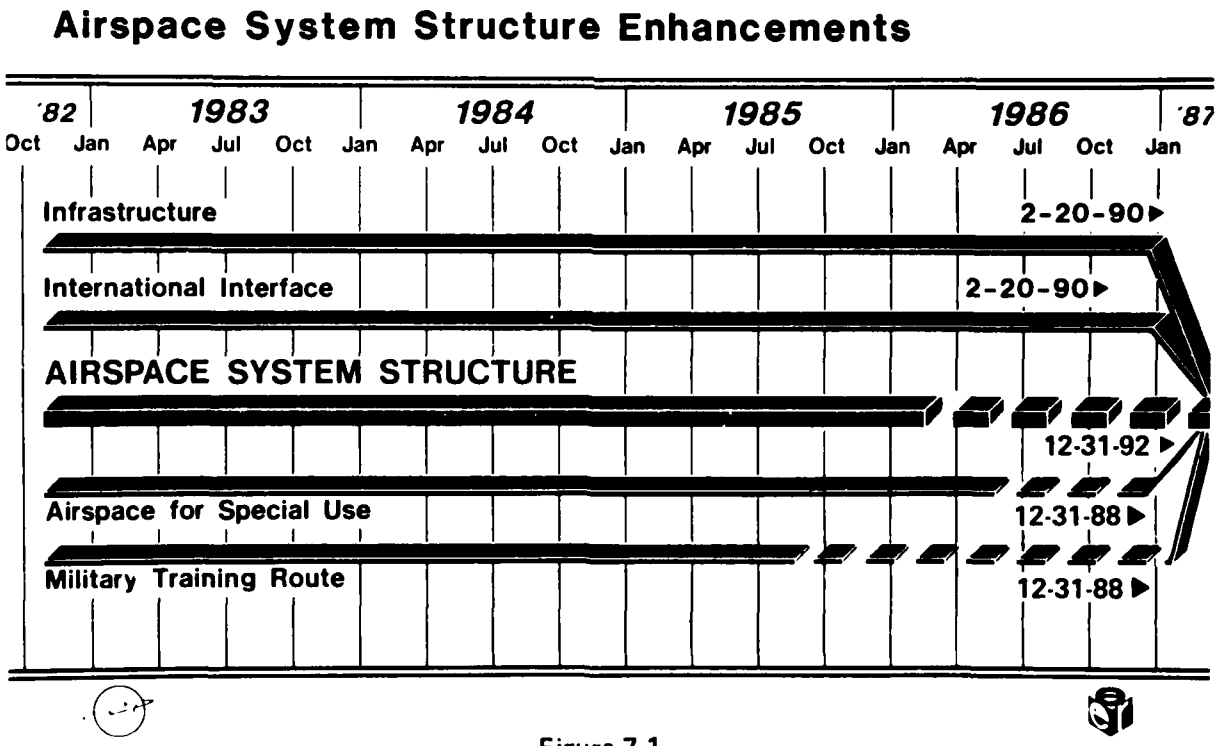


Figure 7-1.

761 Infrastructure Enhancement Area

The Infrastructure Enhancement Area depicted in Figure 7-2 represents 52 recommendations that address fundamental changes to the current system to focus attention on recommendations that may have system engineering implications for the near and far term. These include reclassifying airspace with its attendant ramifications to Federal Aviation Regulations, operations, and procedures; expanded random RNAV route operations and jet route phaseout; changing TCA categories; the ARSA concept; and modification to control zones and airport traffic areas. Infrastructure implementation begins in the First Quarter of 1990. Implementation may begin earlier for some recommendations in this set, as indicated by the depicted milestones.

761.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

761.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

Infrastructure Milestones

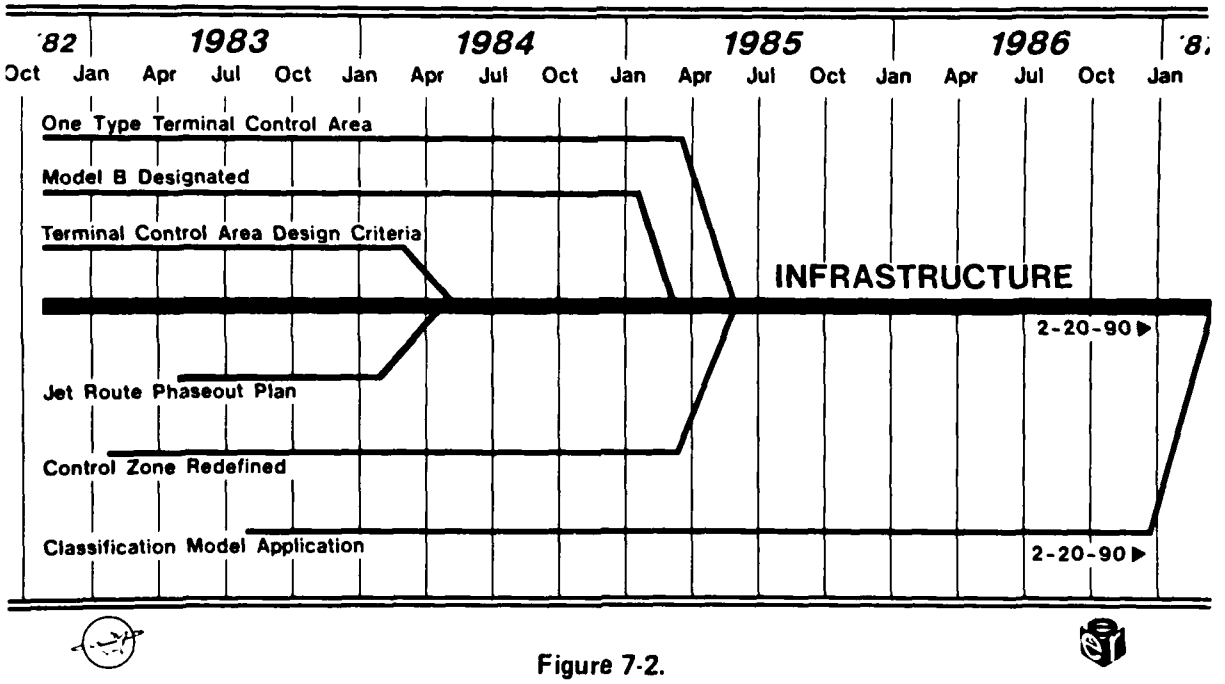


Figure 7-2.

762 International Interface Enhancement Area

The International Interface Enhancement Area depicted in Figure 7-3 represents 36 recommendations that address the need to simplify U.S. airspace classification, its compatibility with Canada/Mexico and ICAO, and an airspace classification model to be used as a basis for further consideration by the FAA. International Interface implementation begins in the First Quarter of 1990. Implementation may begin earlier for some recommendations in this set, as indicated by the depicted milestones.

762.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

762.2 Non-Adopted Recommendations

NAR 1-5.1.3, entitled Joint Public Signature Ceremony, recommended that in recognition of the formal Memorandum of Agreement being undertaken between the United States and Canada to inform one another about changes that affect the operation of air traffic and airspace systems in the proximity of United States/Canada airspace boundaries, a formal joint ceremony take place. Scheduling difficulties of the signatories, however, precluded the establishment of a formal public ceremony. The agreement, therefore, was signed by the FAA on July 10, 1983, and by Canada on August 10, 1983.

International Interface Milestones

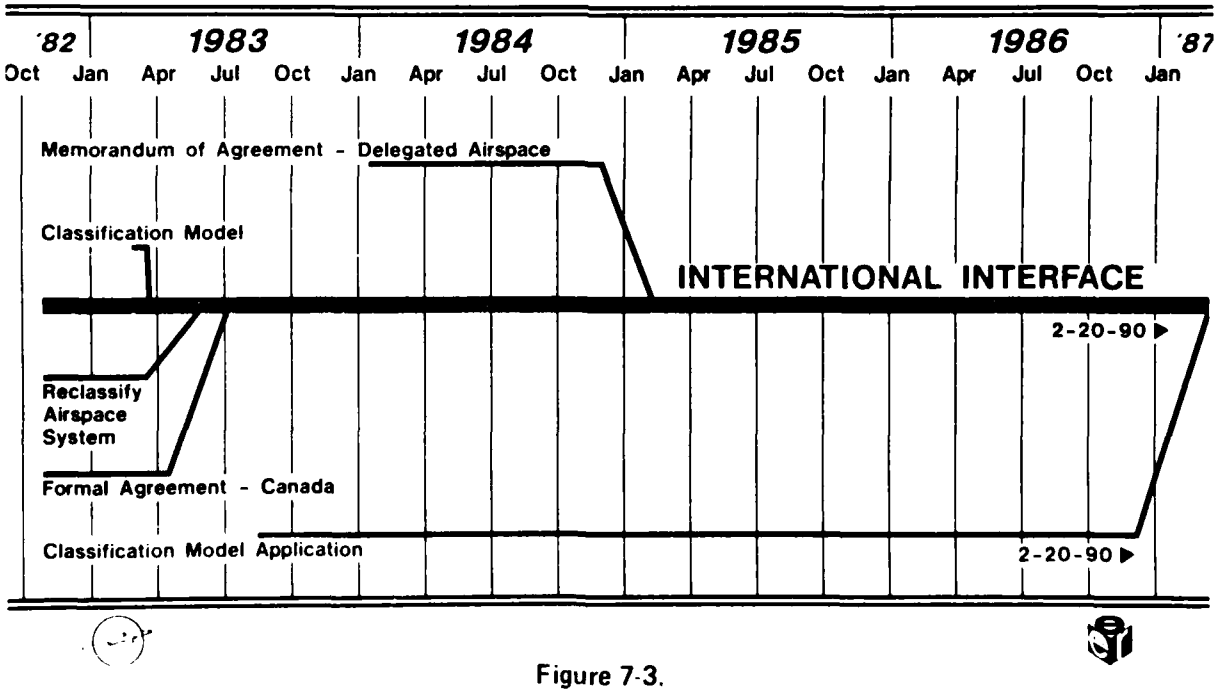


Figure 7-3.

763 Airspace for Special Use Enhancement Area

→ The Airspace for Special Use Enhancement Area depicted in Figure 7-4 represents 43 recommendations that stress the need for greater pilot awareness/education, improved utilization of all types of special use airspace, specific information to be contained in Letters of Agreement (LOAs) and procedures, improved procedures for handling non-routine/short notice DOD requirements for Military Operations Areas (MOAs), and improvements to dissemination of information by Flight Service Stations. Airspace for Special Use implementation begins by the Second Quarter of 1986 for the majority of recommendations, but extends to the Fourth Quarter of 1988 to complete action on all recommendations in this area. Implementation may begin earlier for some recommendations in this set, as indicated by the depicted milestones.

763.1 Limited/Partial and Modified Recommendations

NAR 1-1.2.21, entitled User Meetings, recommended scheduling local/regional user meetings to provide a forum for resolving operational problems and to facilitate cooperative relationships for this problem solving, in full recognition that this type of interface frequently resolves issues before they become major obstacles. Paragraphs 420-423 of Section 2 of the Facility Operation and Administration Handbook (7210.3F), however, prescribe and require specific procedures for scheduling user conferences to resolve and clarify facility operational matters. As it was felt that this partly covered the intent of the recommendation, it will be further modified before it is implemented.

NAR 1-1.2.11 (Paragraph A), entitled Pilot Education on Special Use Airspace, recommended that FAA reinforce to civilian flight

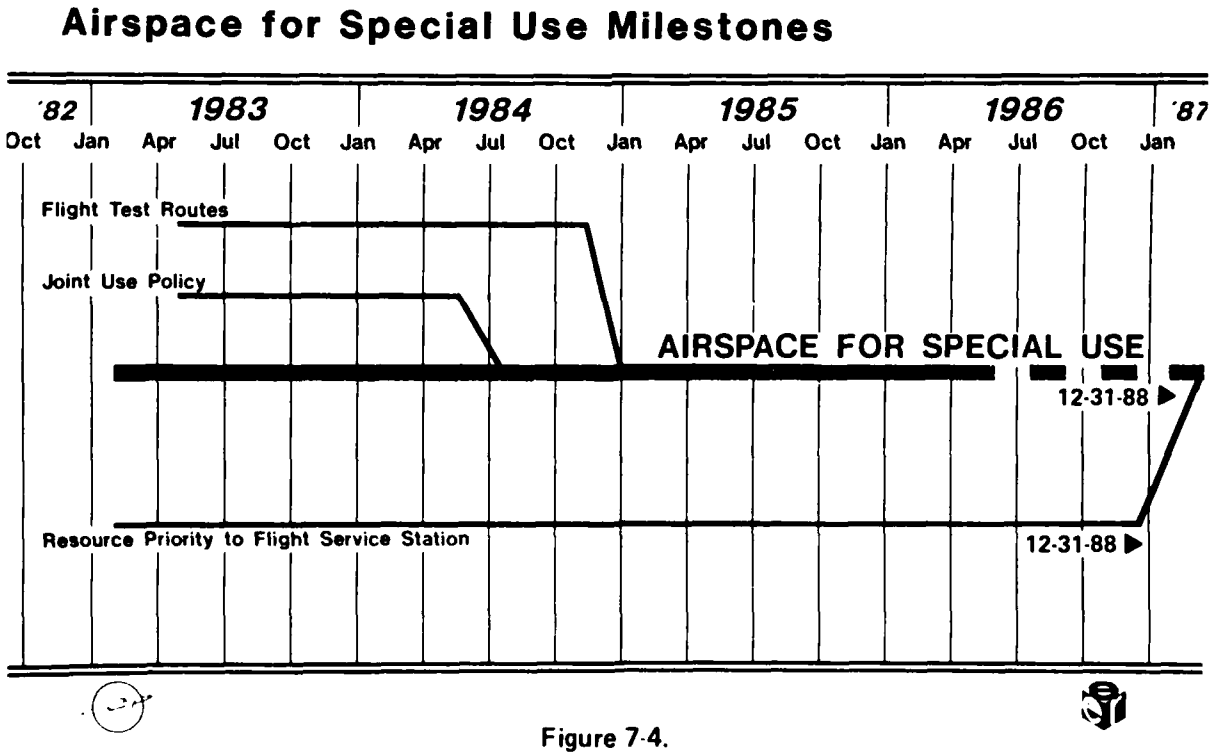


Figure 7-4.

instructors, through flight instructor refresher courses, information and requirements concerning special use airspace. There are 48 organizations currently approved by the FAA to conduct flight instructor refresher clinics. Each has an FAA curriculum that has been approved for that organization. In areas where special use airspace problems exist, they are included in the curriculum. By letter dated March 14, 1983, all organizations were advised to place emphasis on special use airspace.

763.2 Non-Adopted Recommendations

→ There are currently nine recommendations in this Enhancement Area that will not be adopted.

NAR 1-1.2.7, entitled Publication of Information Concerning Temporary Military Operations Area (MOA), recommended that action be initiated to publish a regularly scheduled bulletin to pilots similar in nature to the FAA air traffic service bulletin. This publication would remind pilots, as close to real-time as possible, of current problem areas. It was believed, however, that adoption of this proposal would create a duplication of effort in the establishment and scheduling of temporary MOAs as there are several currently established methods for providing this information to all pilots. It was decided, therefore, that this recommendation will not be adopted.

NAR 1-1.2.11 (Paragraph B), entitled Pilot Education on Special Use Airspace, recommended that questions concerning special use airspace and questions concerning military operations be included on the private, commercial, instructors, and air transport pilot's written examinations. It was determined that there are questions concerning MTRs on pilot written examinations and that, as new material on the subject is developed, new questions will be added to the examinations. Therefore this recommendation will not be adopted.

→ In NAR 1-1.2.13, entitled Air Traffic Control Assigned Airspace Floor, Task Group 1-1 recommended that FAA Handbook 7610.4F, Special Military Operations, Part 5, be modified to include a paragraph 566 which would state that ATC assigned airspace (ATCAAs) shall not be established below flight level (FL) 180 over land. The FAA notes, however, that there appears to be a misunderstanding that the designation of ATCAAs is restricted to the military. ATCAAs may be established for any user having a need to segregate from IFR traffic at any altitude. If adopted, there would be no provision for an airspace assignment by ATC below FL 180 for a non-military user; therefore, this recommendation will not be adopted.

NAR 1-1.2.19(C), entitled Spill-In/Spill-Out Procedures, recommended that FAA Order 8020.11, "Aircraft Accident and Incident Notification, Investigation, and Reporting" be amended to include a definition for "emergency" in Paragraph 501(j) and changes to Paragraph 508(c) in FAAH 7210.3F. FAA Order 8020.11 identifies the types of incidents/accidents that the FAA will investigate and prescribes the procedures that will be used to report and investigate these incidents/accidents. It was noted that Part C of NAR 1-1.2.19 is no longer relevant due to Change 8 to the Order, which became effective January 25, 1983, and that the word "emergency" in the Order is used only to refer to an emergency evacuation.

→ In NAR 1-1.2.20, entitled Non-Hazardous Activity within Special Use Airspace, Task Group 1-1 recommended that FAR Part 73.3, Special Use Airspace, be amended to reflect the conduct of non-hazardous activity in restricted airspace designated for the conduct of hazardous activity under certain conditions, based on the fact that access to restricted area airspace should be permissible and would allow for dual designation and more efficient airspace usage. The FAA maintains, however, that restricted area airspace is inappropriate for non-hazardous activity. The alternative of colocating MOAs with restricted areas to accommodate the

military's need for additional airspace for nonhazardous activity will be explored. In addition, because of the military's need to accomplish multimission training in a given flight sortie, the FAA will support restricted area activity when a portion of the sortie involves hazardous activity. The recommendation, however, will not be adopted.

- In NAR 1-1.3.2, entitled Restricted Area Floors, Task Group 1-1 recommended that Paragraph 7303 of proposed FAA Handbook 7400.2C, Procedures for Handling Airspace Matters, be amended to state that restricted area floors, when practicable, will not be designated lower than 1,200 feet above the surface. It was determined, however, that the recommended terminology did not improve upon the conveyance of the policy. The term "when practicable" connotes that which can be done or put into practice, and its use in the context of what should not be done does not represent improvement. The recommendation, therefore, will not be adopted.

- In NAR 1-1.3.8, entitled Military Liaison Representatives, Task Group 1-1 recommended that separate military sections be established at FAA headquarters, regions, and ARTCCs with significant military operations. In addition, liaison officers should be provided for all military commands, and the major command and the FAA should jointly identify the FAA/ military liaison positions that need to be filled below the major command level. A network designated for the coordination of military affairs and operational matters and activities of interest to FAA is already well established. There are currently 116 air traffic service positions dedicated to military liaison activities. Increases in existing staffing levels should be requested through normal channels in the budgetary process. There is therefore no requirement to further institutionalize an organizational structure already in existence. This recommendation will not be adopted.

NAR 1-1.3.13, entitled Military Radar Units and Separation Services, recommended that FAA Handbook 7610.4F, Special Military Operations, Paragraph 561a be amended to read that the military radar units (MRU) keep aircraft clear of the airspace boundary. MRU personnel are trained in control techniques and separation criteria and are qualified to separate participating aircraft in accordance with military regulations. Additionally, military joint manual 55-200 requires pilots to comply with instructions received from weapons controllers unless there is a safety of flight consideration. Adoption of the recommendation would require revising the separation standards in FAAH 7110.65C. For these reasons, the recommendation will not be adopted.

In NAR 1-1.3.14, a recommendation was made to amend Paragraph 585, Separation between Participating and Nonparticipating Aircraft, of FAA Handbook 7610.4F, Special Military Operations to read that separation shall be accomplished by coordination with the MRU prior to the air traffic control assigned airspace (ATCAA)/military operations area (MOA) boundary penetration, rather than 5 minutes prior to the penetration. Military aircraft operating within ATCAA/ MOAs are performing at high speeds and it is not uncommon for them to change altitude or direction without coordinating with an MRU. Deleting the time requirement, therefore, may lead to attempts for last minute coordination which an MRU cannot accommodate and result in a delay to the participant until the MRU can accommodate the request. The 5-minute notification time is reasonable and desirable, in the sense that it permits an MRU time to complete an engagement and clear the required airspace for nonparticipating traffic. This recommendation therefore will not be adopted.

764 Military Training Route (MTR) Enhancement Area

→The MTR Enhancement Area depicted in Figure 7-5 represents 41 recommendations that address the need for improved pilot education and awareness of military flight activity on MTRs, methods of disseminating real-time information concerning this activity, modifications to MTR development criteria, and establishment of policy concerning high speed operations. MTR implementation begins in the Fourth Quarter of 1985 for the majority of recommendations, but extends to the Fourth Quarter of 1988 to complete action on all recommendations in this area. Implementation may begin earlier for some recommendations in this set, as indicated by the milestones depicted.

764.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

764.2 Non-Adopted Recommendations

→There are currently seven recommendations in this Enhancement Area that will not be adopted. NAR 1-1.1.6 A/B, entitled Revision Concerning IR/VR Scheduling, recommended that FAA Handbook 7610.4F, Part 9, Chapter 27, Section 1, Paragraph 1256b, second sentence, and Paragraph 1356B, second sentence, be amended to read "unless otherwise agreed, such scheduling shall be accomplished at least two hours prior to use and shall include the route designator and time period" and that "should" be substituted for "will normally" in the third sentence. The recommendations were circulated to industry, military, FAA regions and Headquarters staff. Comments received, however, indicated that the change proposed in the recommendation would not make any significant difference concerning IR/VR scheduling. The recommendation will not be adopted.

→In NAR 1-1.1.11, entitled Revisions Concerning MTR Route Width, TG 1-1 recommended that FAA Handbook 7610.4F, Paragraphs

Military Training Route (MTR) Milestones

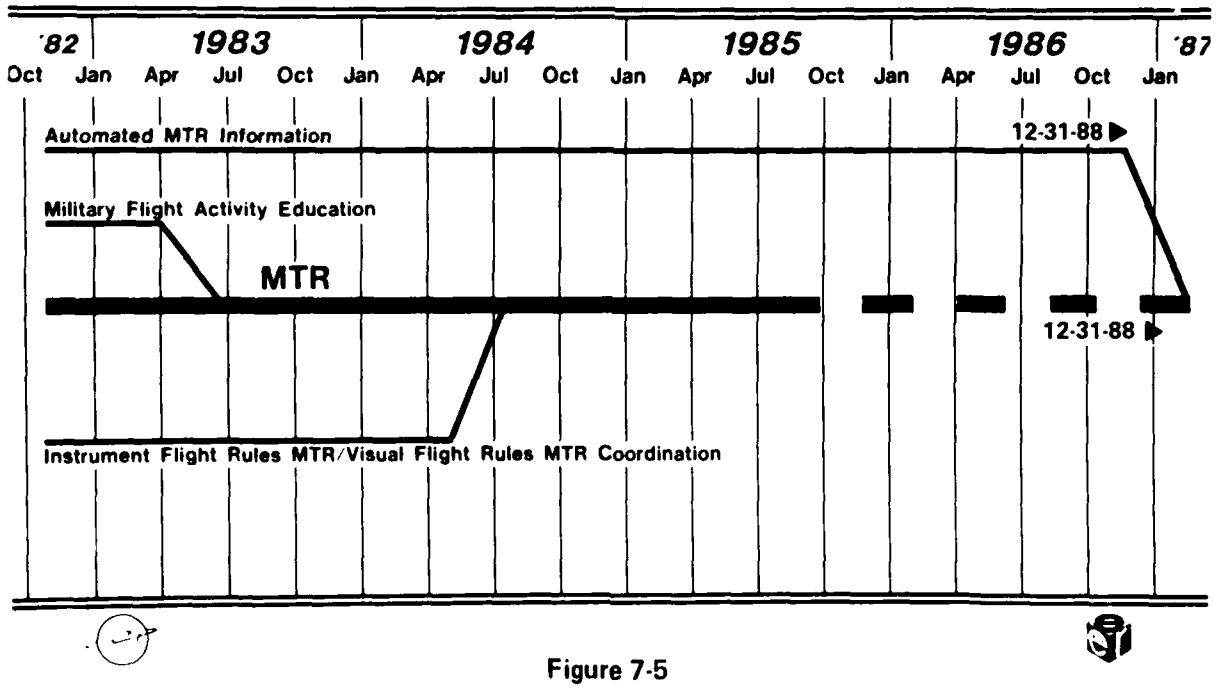


Figure 7-5

1210 and 1310, be amended to reflect that the standard MTR route is 10 nautical miles wide, excluding presently established routes. MTRs may be established greater than 10 nautical miles wide if required for mission accomplishment. If the mission cannot be accomplished in other designated airspace, this should be justified, and special operating procedures should be established. Based on the circularization of the recommendation to industry, DOD, and FAA representatives, there was an indication that the recommendation would not accomplish the desired objective of improving the ability of the VFR pilot to recognize and avoid MTRs. In some cases, the size of MTR routes would be increased unnecessarily. The recommendation will not be implemented.

NAR 1-1.1.12, entitled Avoidance of Charted Airports by VR MTRs, recommends that FAA Handbook 7610.4F, Part 10, Chapter 29, Section 2, Paragraph 1311, be amended to include the following criteria: VR MTRs, unless otherwise approved by the appropriate FAA authority, shall be designated to allow aircraft to avoid charted public use airports by 3 nautical miles and/or 1,500 feet AGL, charted public heliports by 1 nautical mile and 1,000 feet AGL, and to allow aircraft to avoid control zones, airport traffic areas, and terminal control areas. Although the recommendation was circulated among industry and military users as well as among FAA regional and Headquarters staff members, based on the analysis performed and the comments received, it was determined that the recommendation will not resolve existing problems. A revised proposal will be circulated, however, that requires route avoidance of airport traffic areas, and aircraft avoidance of uncontrolled airports and charted public use heliports.

NAR 1-1.1.20, entitled MTR Information on Alaskan Charts, recommended that a note be placed on sectional charts for Alaska advising pilots that MTR activity can be avoided by remaining above 1,500 feet AGL. Altitudes on MTRs may be established commensurate with mission requirements which may be from 10,000 MSL and below. Restricting MTRs in Alaska to 1,500 feet and below is not envisioned, therefore, the recommendation will not be adopted.

NAR 1-1.1.22 (Paragraph D), entitled Pilot Education Programs, recommended that FAA mail information annually concerning military operations to each certified pilot listed in the Aviation Directory at Oklahoma City. The cost of a one-time mailing to each certificated pilot is approximately $112,000. Normally, because of change of address, death, etc., 60,000 are returned as undeliverable. Discussions during safety meetings and clinics plus counselling by one of the more than 3,700 counselors is much more profitable.

→ In NAR 1-1.1.25A, entitled Preflight Knowledge of Available MTR Information, Task Group 1-1 recommended that FAR Part 91.5, Preflight Action, be amended to include information on MTRs within MOAs, etc. As written, however, FAR 91.5 currently requires that each pilot, before beginning a flight, be familiar with all available information concerning that flight. All available information should include NOTAMs and information relative to MTRs, MOAs, etc., that are applicable to the flight. Specificity within the rule to identify each item of flight information that might be needed or required for a given flight is not possible or practical. The recommendation will not therefore be adopted.

800

REGULATIONS/STANDARDS

810 INTRODUCTION

The thrust of NAR efforts in the area of regulations and standards is to simplify or eliminate regulatory rules, to develop essential standards affecting future operations, and to modify ATC separation standards and policy orders in support of other recommendations.

820 BACKGROUND

One of the NAR Program objectives is to review and eliminate, wherever possible, governmental restraints to system efficiency levied by FARs and FAA Handbooks with an aim towards reducing complexity and simplifying the ATC system. Through their ongoing work, the NAR task groups have developed numerous recommendations in this area and have added aviation standards (including ATC separation) to basic regulations as an area of concern.

830 IMPLEMENTATION STUDIES

An implementation study related to FAA Handbooks and aeronautical publications is already being undertaken in this System Area. It is described more fully in the following section.

In addition, it is envisioned that two other implementation studies concerning terminal helicopter separation and the two-mile radar separation standard may be potentially needed before related NAR recommendations can be implemented.

831 FAA Handbook and Aeronautical Publications Study

The FAA is currently conducting a special implementation study of selected FAA Handbooks and aeronautical publications to develop guidelines for improving their format, content, production techniques, distribution and publication schedules. The guidelines are expected to encourage commonality among the publications and improve format, text, style, graphics usage, packaging and distribution. This is especially timely considering the many handbook changes being recommended by the NAR. In conjunction with this study, a review of regulations and user requirements pertaining to the publications is being conducted.

A final report describing results of the study has been completed and is under review.

840 VALIDATIONS

During the review undertaken in this System Area, many recommendations have been generated which identify potential improvements to regulations and standards. In addition, several existing standards and regulations have been revalidated in keeping with the third objective of the NAR, which is to revalidate airspace system structure, standards, and procedures in view of state-of-the-art and future technological improvements. These validations are grouped in the areas of uncontrolled airports; helicopter separation standards; traffic segregation by categories; special VFR (SVFR) separation; parachute, glider, and ultralight operations; and FAR Part 73 and are discussed in the following sections. The task group associated with each validation is listed following each discussion. More detailed information concerning individual validations can be found in the minutes and staff studies associated with the task group cited.

841 Uncontrolled Airports

In the area of uncontrolled airports, traffic pattern procedures for various aircraft and whether different types of aircraft should be segregated by altitude in the traffic pattern were discussed. After considerable discussion,

however, agreement was reached that the present procedures appearing in Advisory Circular (AC) 90-66 and Paragraph 223 of the Airman's Information Manual (AIM) were adequate and did not require modification. Also in relation to traffic patterns, some consideration was given to eliminating straight-in approaches; after thorough discussion, however, it was agreed that the present operating procedure was safe and should be retained. (TG 1-2.5B)

En route aircraft operating procedures appearing in AC 90-66 were reviewed. Discussion concerned traffic pattern avoidance and whether en route aircraft should announce when they pass through or near a traffic pattern. It was agreed that the procedures recommended in Paragraphs 223-230 of the AIM were adequate and that no changes were necessary. (TG 1-2.5B)

Frequency change-over procedures at uncontrolled airports and requirements for direct communication were discussed. It was agreed that the current policy and procedures appearing in Paragraph 390 of FAAH 7110.65C should be retained. In addition, concerns were raised about whether more common traffic advisory frequencies (CTAF) were needed and whether additional CTAF monitoring should be performed where no tower is available. In regard to the number of CTAF frequencies provided, it was determined that the FAA is planning to add more frequencies and that no further action would be necessary. In addition, since information regarding CTAF monitoring already appears in Paragraph 157 of the AIM, further action was not taken. (TG 1-2.5B)

842 Helicopter Separation

In the area of helicopter separation, one proposal discussed was reduced vertical separation requirements for radar altimeter-equipped IFR helicopters operating over water. It was felt, however, that this specialized local case did not warrant system-wide standardization. Another area concerned helicopter separation from special use and ATC-assigned airspace. Once it was noted that the intent of the standard was to safely separate a helicopter in one ATC-controlled airspace from an aircraft in another airspace under different ATC control and not to penalize non-participating aircraft, it was agreed that no further action was necessary. (TG 2-4.1)

IFR longitudinal separation minima reductions were suggested for helicopter operations. Recommendations were not made due to concerns about the application of the reduced minima in non-radar coverage areas and doubts about the ability of RNAV-equipped aircraft to accurately maintain separation if the minima were reduced. A suggestion to exempt helicopters from the closed/unsafe runway information standard due to its unique maneuvering and hovering capabilities was withdrawn once it was determined that the decision to close or declare a runway unsafe is made by the airport manager. ATC is simply relaying the information to local helicopter operators. (TG 2-4.1)

A proposal to eliminate the SVFR helicopter category and allow for simultaneous VFR helicopter operations in an SVFR/IFR arrival operation was also discussed in detail. If adopted, the proposal would have allowed helicopters to depart without applying the same separation standards that would otherwise be applied to IFR traffic. Based on this, it was suggested that an increase in capacity might be realized. Current standards, however, require ATC to provide clearance to SVFR and IFR aircraft under reduced weather conditions. No recommendation resulted from this proposal. (TG 2-4.1)

Based on other recommendations formulated to reduce helicopter separation minima, another area discussed was helicopter takeoffs into the wind near wake turbulence buffer zones. It was decided, however, that the problems associated with this type of operation were more a matter of pilot education, and a suggestion to further clarify existing guidelines was deemed unnecessary. (TG 2-4.1)

843 Traffic Segregation by Categories

In the area of traffic segregation by categories, a major review was undertaken to determine whether additional segregation concepts could be devised to improve airport capacity. Considerable attention was devoted to the concept of segregation versus separation as well as its application. Although several operations involving broader use of aircraft segregation by type were identified and examined, a general concensus was reached that the current segregation of aircraft by categories employed by ATC for certain operations or at certain locations was as good as could presently be achieved. (TG 2-2.2)

844 Special VFR (SVFR) Separation

In the area of SVFR separation, a review of FAR 91.107, which prescribes the special weather minimums and operational requirements under which pilots can conduct nighttime SVFR operations in control zones, was undertaken to determine whether any further limitations or restrictions should be placed on such operations. A Notice of Proposed Rulemaking (ANPRM) on VFR Weather Minimums currently under consideration proposes standardizing VFR weather minimums for all airspace, controlled or uncontrolled, at night, using the ceiling, visibility, and distance requirements that presently apply to controlled airspace under FAR 91.105, with no change to SVFR operating rules. In recommending application of the more stringent VFR weather minimums in uncontrolled airspace, emphasis is placed on the risks associated with flying under reduced visibility and ceilings, as well as the advantages of avoiding marginal VFR weather conditions. After detailed reviews of FARs 91.105 and 91.107 and a briefing on the proposed rule, there was general agreement that nighttime SVFR operations could continue under the requirements prescribed by FAR 91.107. (TG 2-2.3)

A review of FAR 93.113, Control Zones within which Special VFR Minimums are not Authorized, was also undertaken. FAR 93.113 was established to identify Control Zones within which SVFR weather minimums are not prescribed. The baseline criteria for the elimination or restoration of SVFR operations in a control zone appears in FAA Order 7400.3, which stipulates that SVFR operations may continue in excess of the baseline criteria provided they do not interrupt the orderly movement of IFR operations. Individual regions conduct periodic reviews of terminal areas to determine if SVFR operations should be eliminated or restored at various locations, based on the provisions of the order. Lengthy discussion concerning whether such operations should be eliminated in all control zones was held. Although there was certain concern about locations where the number of operations is high enough to justify their review for inclusion under the rule using the baseline criteria, the general view was that the rule was adequate as currently written. (TG 2-2.3)

A proposal to extend nighttime SVFR requirements to daytime SVFR operations was discussed in reference to Amendment 91-99, Special VFR Weather Minimums. The general view held, however, was that the proposal would effectively eliminate SVFR operations since pilots, if required to be instrument-rated and fly aircraft so equipped, would probably elect to fly IFR. The proposal was therefore withdrawn. A proposal to eliminate nighttime SVFR operations was briefly considered; however, after agreement was reached to support the continuation of such operations under the provisions prescribed by FARs 91.105 and 91.107, it was also withdrawn. (TG 2-2.3)

Restricting SVFR procedures to either departures or arrivals to lessen the stress around terminal areas was considered. A suggestion to restrict SVFR operations to arrivals would lessen the stress and provide a method to safely land VFR aircraft in deteriorating weather. Pilots viewed the proposal to allow SVFR arrivals while restricting departures as more hazardous, suggesting as an example that several

SVFR aircraft might be circling an airport attempting to land amidst heavy IFR traffic; they believed that the proposal should be restricted to departures to emphasize to the pilot the importance of ensuring that en route weather is better than departure weather. After further discussion, however, the general view shared was that the procedures should not be restricted to either operation. (TG 2-2.3)

Subparagraph 477(d) of FAAH 7110.65C, which authorizes air carrier aircraft in the United States to conduct operations if ground visibility is not less than 1/2 statute mile, was reviewed for possible deletion or movement to another section of the handbook. There was agreement that the subparagraph should be retained as written, however, after it was determined that the procedure relates to local surface conditions, which, under FAR Part 121.649, refers to such restrictions to visibility as smoke, sand, dust, etc. (TG 2-2.3)

A proposal to relax separation standards between SVFR aircraft under Paragraphs 180 and 473 of FAAH 7110.65C was discussed. Some non-radar approach control towers are becoming VFR towers and IFR separation is increasingly being provided by facilities at great distances from some airports. In many cases where separation is being provided by these facilities, it entails keeping one SVFR aircraft on the ground until another SVFR aircraft is clear of the control zone. Due to the recent tendency to restrict SVFR operations within control zones, e.g., the prohibition restricting nighttime SVFR operations, the placement of airports under the provisions of FAR 93.113, etc., there was a belief that methods other than providing standard separation between SVFR aircraft should be established. A proposal to delete Subparagraph 473(a) in the hopes that some relaxation of the standard separation requirement would result in less opposition to the designation of control zones under which the operations are restricted as well as provide a way to further expedite traffic was formulated. The general view shared, however, was that the standard separation needs to be applied because the SVFR weather criteria, although adequate to operate an aircraft, are not adequate to apply the "see-and-be-seen" separation necessary for the safe conduct of such operations. The provision was retained as currently written. (TG 2-2.3).

→ 845 Parachute, Glider, and Ultralight Operations

In the area of parachute operations, one item discussed concerned extending the requirement for ATC authorization of jump activities to all controlled airspace areas. Under FAR Subpart 105.14(a)(1)(ii), no parachute jump may be allowed in or into controlled airspace unless radio communications have been established between the jump aircraft and the nearest air traffic control (ATC) facility or flight service station (FSS) at least 5 minutes prior to the jump activity. In addition, under FAR Subpart 105.23(a), no parachute jump may be allowed in or into airspace not covered by FAR Subparts 105.15, 105.17, 105.19, unless the nearest ATC facility or FSS has been notified of the jump activity at least 1 hour before the jump is to be made. There are situations, however, where parachute jumps can be performed in controlled airspace without real-time contact with ATC. Under FAR Subpart 105.14(b), jumping activity may be conducted in the event of communications system failure if the system aboard the jump aircraft becomes inoperative in flight after the aircraft has received a required ATC authorization. Under FAR Subpart 105.23(b), ATC may also accept from a jumping organization a written notification of a scheduled series of jumps to be made over a stated period of time not longer than 12 calendar months.

In many locations, communications can only be established with FSSs, which receive information and forward it under the guidelines prescribed in Paragraph 691, Prejump Radio Communications, of Section 8, Nonemergency Parachute Jumping, of the FSS Manual (FAAH 7110.10B). Concerns were expressed that many

	TG 1-3.4 Route System Concept	TG 1-3.5 Part 75 Review
Chairman, Federal Aviation Administration (FAA)	Gil Bilodeau Atlanta ARTCC	Harold Downey Southwest Region
Project Management Staff (PMS) Representative	John Watterson	John Watterson
National Airspace Review Advisory Committee (NARAC) Members		
Federal Aviation Administration (FAA)	George Weimar Southern Region	William Davis Airspace-Rules and Aeronautical Information
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Lt. Col. Grant Hachmann, USAF	Lt. Col. Grant Hachmann, USAF
Air Transport Association (ATA)	Gary Church	Gary Church
National Business Aircraft Association (NBAA)	Gilbert Quinby	Gilbert Quinby
Regional Airline Association (RAA)	Martin Macy	Martin Macy
Experimental Aircraft Association (EAA)		
Helicopter Association International (HAI)	Glenn Leister	
Air Traffic Control Association, Inc. (ATCA)		
Soaring Society of America (SSA)		
National Ocean Service (NOS)		
Aircraft Owners and Pilots Association (AOPA)	Edward Malo	Edward Malo
United States Parachute Association (USPA)		
Transport Canada (ATPI)		
General Aviation Manufacturers Association (GAMA)		
National Association of State Aviation Officials (NASAO)		
Airline Pilots Association (ALPA)	Edward Krupinski	Edward Krupinski
American Association of Airport Executives (AAAE)		
Airport Operators Council International, Inc. (AOCI)		
American Institute of Aeronautics and Astronautics (AIAA)		
Allied Pilots Association (APA)		
National Air Transportation Association (NATA)		
Aerospace Industries Association (AIA)		Joseph Snodgrass
International Air Transport Association (IATA)		
National Weather Service (NWS)		
American Helicopter Society, Incorporated (AHSI)		
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)		
Participants/Other Attendees		
FAA (Headquarters) (Field)	1 1	3 1
DOD (USAF) (USN) (USA)	– – –	– 1 –
Other NARAC	–	–
Other	–	–
Total	2	5

	TG 1-3.1 Random Routes	TG 1-3.2 Airway, Route Structure Evaluation	TG 1-3.3 Routes Infrastructure
Chairman, Federal Aviation Administration (FAA)	Wayne Minnick Procedures	Wayne Minnick Procedures	Wayne Minnick Procedures
Project Management Staff (PMS) Representative	John Watterson	John Watterson	John Watterson
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	Lewis Still Airspace and Air Traffic Rules	Lewis Still Airspace and Air Traffic Rules	George Weimar Southern Region
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Lt. Col. Grant Hachmann, USAF	Lt. Col. Grant Hachmann, USAF	Lt. Col. Grant Hachmann, USAF
Air Transport Association (ATA)	Gary Church	Gary Church	Gary Church
National Business Aircraft Association (NBAA)	Myron Collier	William Horn	Gilbert Quinby
Regional Airline Association (RAA)	Martin Macy	Martin Macy	Martin Macy
Experimental Aircraft Association (EAA)			
Helicopter Association International (HAI)	Glenn Leister	Glenn Leister	Donovan Harvey
Air Traffic Control Association, Inc. (ATCA)			
Soaring Society of America (SSA)			
National Ocean Service (NOS)			
Aircraft Owners and Pilots Association (AOPA)	Edward Malo	Edward Malo	Edward Malo
United States Parachute Association (USPA)			
Transport Canada (ATPI)			
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)			
Airline Pilots Association (ALPA)	Richard Schultz	Richard Schultz	Richard Schultz
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOCI)			
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)			
National Air Transportation Association (NATA)			
Aerospace Industries Association (AIA)			
International Air Transport Association (IATA)			
National Weather Service (NWS)			
American Helicopter Society Incorporated (AHSI)			
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	–	–	1
(Field)	3	2	2
DOD (USAF)	1	1	–
(USN)	–	–	–
(USA)	1	1	1
Other NARAC	4	4	–
Other	–	–	–
Total	9	8	4

	TG1-2.4 Basic, Stage I-II Service	TG 1-2.5 Additional Services	TG 1-2.58 Uncontrolled Airports
Chairman, Federal Aviation Administration (FAA)	Paul Strybing En Route/Terminal Requirements	Paul Strybing En Route/Terminal Requirements	Harold Becker Airspace and Air Traffic Rules
Project Management Staff (PMS) Representative	Anthony Borden	Anthony Borden	Stephen Harless
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	Timothy Halpin Terminal Procedures	Timothy Halpin Terminal Procedures	Burton Chandler Airspace and Air Traffic Rules
Department of Defense (DOD) U.S. Air Force (USAF)	Lt. Col. Robert Bartanowicz, USAF	Lt. Col. Robert Bartanowicz, USAF	Lt. Col. Robert Bartanowicz, USAF
U.S. Navy (USN) U.S. Army (USA)			
Air Transport Association (ATA)	Gary Church	Gary Church	Gary Church
National Business Aircraft Association (NBAA)	William Horn	Gilbert Quinby	William Horn
Regional Airline Association (RAA)	Martin Macy	Martin Macy	Martin Macy
Experimental Aircraft Association (EAA)	Andrew Procop	Andrew Procop	Andrew Procop
Helicopter Association International (HAI)	Glenn Leister	Vernice Robichaud	Glenn Leister
Air Traffic Control Association, Inc. (ATCA)			
Soaring Society of America (SSA)			
National Ocean Service (NOS)			
Aircraft Owners and Pilots Association (AOPA)	Edward Malo	Edward Malo	Dennis Wright
United States Parachute Association (USPA)			
Transport Canada (ATPI)			
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)	James Gray	James Gray	James Gray
Airline Pilots Association (ALPA)	Thomas Kreamer	Thomas Kreamer	Elwyn Fretwell
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOCI)			
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)			
National Air Transportation Association (NATA)			
Aerospace Industries Association (AIA)			
International Air Transport Association (IATA)			
National Weather Service (NWS)			
American Helicopter Society, Incorporated (AHSI)			
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	1	1	4
(Field)	–	–	–
DOD (USAF)	2	1	–
(USN)	1	1	1
(USA)	1	1	1
Other NARAC	2	2	7
Other	–	–	–
Total	7	6	13

	TG 1-2.1 Terminal Control Areas/ Mandatory Communications Area	TG 1-2.2 Terminal Radar Service Area	TG 1-2.3 Control Zones, Airport Traffic Areas, and Transition Areas
Chairman, Federal Aviation Administration (FAA)	Walter Mitchell Terminal Procedures	Paul Strybing En Route/Terminal Requirements	Paul Strybing En Route/Terminal Requirements
Project Management Staff (PMS) Representative	Anthony Borden	Anthony Borden	Anthony Borden
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	Timothy Halpin Terminal Procedures	Timothy Halpin Terminal Procedures	Benjamin Driggs Airspace and Air Traffic Rules
Department of Defense (DOD) U.S. Air Force (USAF)	Lt. Col. Robert Bartanowicz USAF	Lt. Col. Robert Bartanowicz USAF	Lt. Col. Robert Bartanowicz USAF
U.S. Navy (USN) U.S. ARMY (USA)			
Air Transport Association (ATA)	Gary Church	Gary Church	Gary Church
National Business Aircraft Association (NBAA)	Byron Reed	Jack Doswell	William Flener
Regional Airline Association (RAA)		Martin Macy	Martin Macy
Experimental Aircraft Association (EAA)	David Scott	Roger Boggs	James Eggleston
Helicopter Association International (HAI)	John Thompson	Catherine Nickolaisen	Glenn Leister
Air Traffic Control Association, Inc. (ATCA)			
Soaring Society of America (SSA)			
National Ocean Service (NOS)			
Aircraft Owners and Pilots Association (AOPA)	Edward Malo	Edward Malo	Edward Malo
United States Parachute Association (USPA)			
Transport Canada (ATPI)			
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)	James Gray	James Gray	James Gray
Airline Pilots Association (ALPA)	Thomas Kreamer	Thomas Kreamer	Thomas Kreamer
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOCI)			
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)			
National Air Transportation Association (NATA)			
Aerospace Industries Association (AIA)			
International Air Transport Association (IATA)			
National Weather Service (NWS)			
American Helicopter Society, Incorporated (AHSI)			
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	1	1	1
(Field)	–	–	–
DOD (USAF)	–	–	–
(USN)	1	1	1
(USA)	1	1	1
Other NARAC	–	1	–
Other	–	–	–
Total	3	4	3

	TG 1-1.4 Flight Test Areas/ National Security Areas	TG 1-1.5 Part 73 Review
Chairman, Federal Aviation Administration (FAA)	Drexley Barksdale Southern Region	Stanley Ensley Southern Region
Project Management Staff (PMS) Representative	Stephen Harless	Stephen Harless
National Airspace Review Advisory Committee (NARAC) Members		
Federal Aviation Administration (FAA)	Stanley Ensley Jacksonville ARTCC	Gordon Reynolds Jacksonville ARTCC
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Cdr. Thomas Brown, USN	Lt. Col. James Crook, USAF
Air Transport Association (ATA)	Raymond Hilton	Raymond Hilton
National Business Aircraft Association (NBAA)		
Regional Airline Association (RAA)		
Experimental Aircraft Association (EAA)	George Lutz	George Lutz
Helicopter Association International (HAI)	Glenn Leister	Glen Leister
Air Traffic Control Association, Inc. (ATCA)		
Soaring Society of America (SSA)		
National Ocean Service (NOS)		
Aircraft Owners and Pilots Association (AOPA)	Edward Malo	Edward Malo
United States Parachute Association (USPA)		
Transport Canada (ATPI)		
General Aviation Manufacturers Association (GAMA)		
National Association of State Aviation Officials (NASAO)	Catherine Nickolaisen	Robert Babis
Airline Pilots Association (ALPA)	Ward Baker	Ward Baker
American Association of Airport Executives (AAAE)		
Airport Operators Council International, Inc. (AOCI)		
American Institute of Aeronautics and Astronautics (AIAA)		
Allied Pilots Association (APA)		
National Air Transportation Association (NATA)		
Aerospace Industries Association (AIA)	Kenneth Holt	Kenneth Holt
International Air Transport Association (IATA)		
National Weather Service (NWS)		
American Helicopter Society, Incorporated (AHSI)		
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)		
Participants/Other Attendees		
FAA (Headquarters)	2	4
(Field)	2	1
DOD (USAF)	4	4
(USN)	1	1
(USA)	1	1
Other NARAC	1	2
Other	–	1
Total	11	14

	TG-1-1.1 Military Training Routes	TG 1-1.2 Temporary Special Use Airspace/Real-Time Joint Use of Special Use Airspace	TG 1-1.3 Special Use Airspace Requirements Review/ Separation from Special Use Airspace
Chairman, Federal Aviation Administration (FAA)	Drexley Barksdale Southern Region	Drexley Barksdale Southern Region	Drexley Barksdale Southern Region
Project Management Staff (PMS) Representative	Ronald Haggerty	Ronald Haggerty	L. Jack Overman
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	Stanley Ensley Jacksonville ARTCC	Stanley Ensley Jacksonville ARTCC	Stanley Ensley Jacksonville ARTCC
Department of Defense (DOD) U S Air Force (USAF) U S Navy (USN) U S Army (USA)	Cdr. William P. Cochran, USN	Cdr. William P. Cochran, USN	Cdr. William Cochran, USN
Air Transport Association (ATA)		Raymond Hilton	Raymond Hilton
National Business Aircraft Association (NBAA)			
Regional Airline Association (RAA)			
Experimental Aircraft Association (EAA)	George Lutz	George Lutz	George Lutz
Helicopter Association International (HAI)	William Jones	Glenn Leister	Glenn Leister
Air Traffic Control Association, Inc. (ATCA)			
Soaring Society of America (SSA)			
National Ocean Service (NOS)			
Aircraft Owners and Pilots Association (AOPA)	Dennis Wright	Dennis Wright	Dennis Wright
United States Parachute Association (USPA)			
Transport Canada (ATPI)			
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)		Catherine Nickolaisen	Catherine Nickolaisen
Airline Pilots Association (ALPA)		Ward Baker	Ward Baker
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOC)			
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)			
National Air Transportation Association (NATA)			
Aerospace Industries Association (AIA)	Kenneth Holt	Kenneth Holt	Kenneth Holt
International Air Transport Association (IATA)			
National Weather Service (NWS)			
American Helicopter Society, Incorporated (AHSI)			
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	2	2	2
(Field)	1	2	2
DOD (USAF)	–	1	1
(USN)	1	–	–
(USA)	1	1	1
Other NARAC	–	–	–
Other	–	–	–
Total	5	6	6

APPENDIX A

TASK GROUP MEMBERSHIP

864 Separation Enhancement Area

→ The Separation Enhancement Area depicted in Figure 8-5 represents 63 recommendations that address various modifications to current ATC separation standards. Separation implementation begins in the Fourth Quarter of 1985 for the majority of recommendations, but extends to the Second Quarter of 1988 to complete action on all recommendations in this area. Implementation may begin earlier for some recommendations in this set, as indicated by the depicted milestones.

864.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

864.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

Separation Milestones

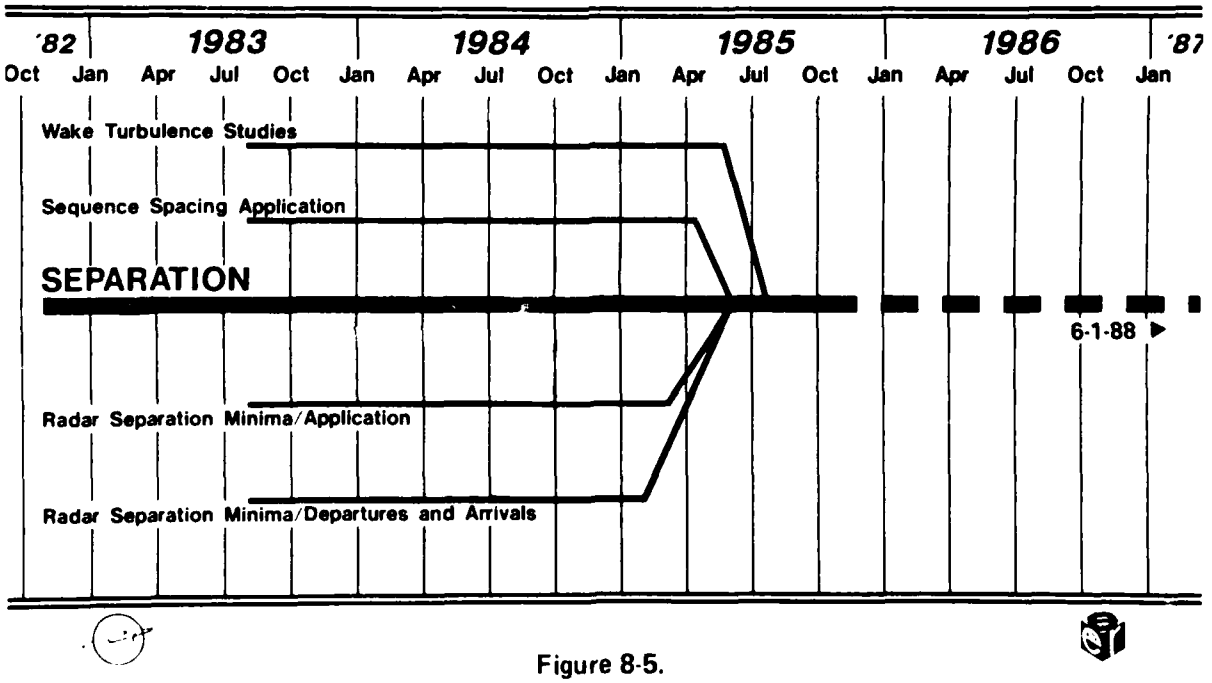


Figure 8-5.

863 Regulatory Elimination Enhancement Area

The Regulatory Elimination Enhancement Area depicted in Figure 8-4 represents 5 recommendations that address elimination of certain airways/routes from the rulemaking process. Several additional recommendations are expected to be included in this Enhancement Area from future NAR task groups. Regulatory Elimination implementation currently begins by the Second Quarter of 1984 and continues to the Second Quarter of 1986 to complete action on all recommendations in this area.

863.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

863.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

Regulatory Elimination Milestones

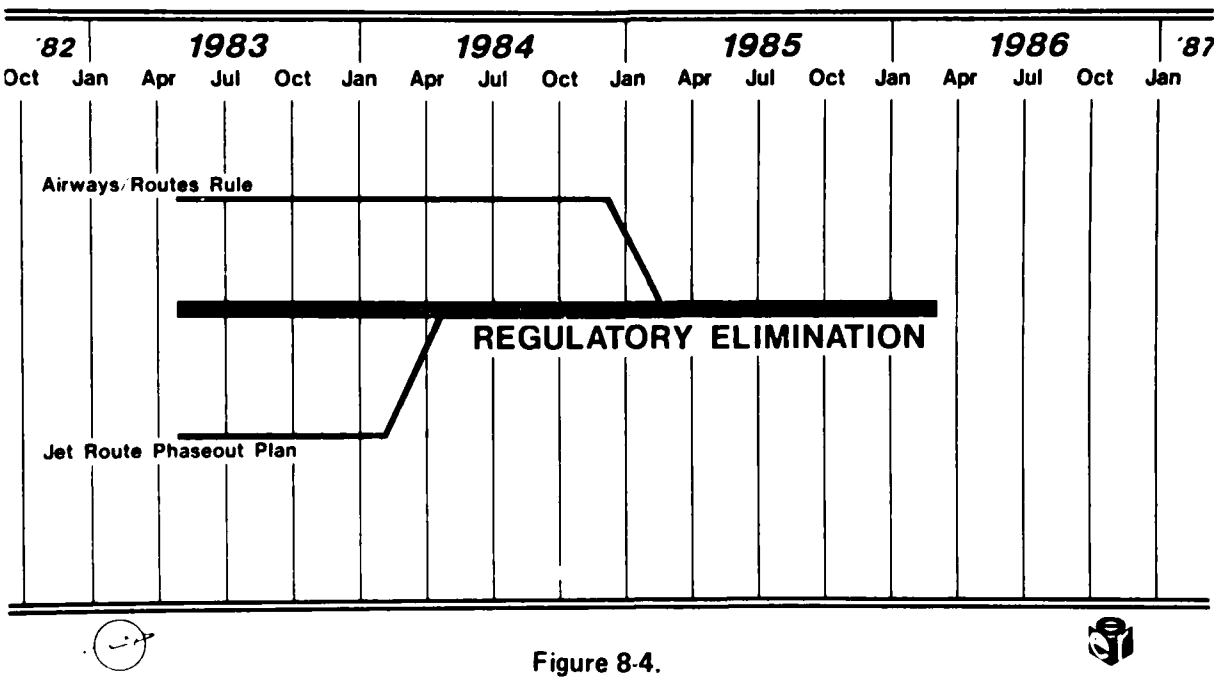


Figure 8-4.

862 Regulatory Simplification Enhancement Area

The Regulatory Simplification Enhancement Area depicted in Figure 8-3 represents 35 recommendations that address modification of TCA classifications to one type, changing control zone dimensions to nautical miles, replacing Airport Traffic Area with Control Tower Area using the same basic dimensions as control zones, proceeding to direct rule when Restricted Area changes have no aeronautical impact, elimination of rulemaking action for certain airways/routes, and concluding that Flight Sensitive Areas do not need to be established by rule. Regulatory Simplification implementation begins in the First Quarter of 1986 for the majority of recommendations, but extends to the First Quarter of 1990 to complete action on all recommendations in this area. Implementation may begin earlier for some recommendations in this set, as indicated by the milestones depicted.

862.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

862.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

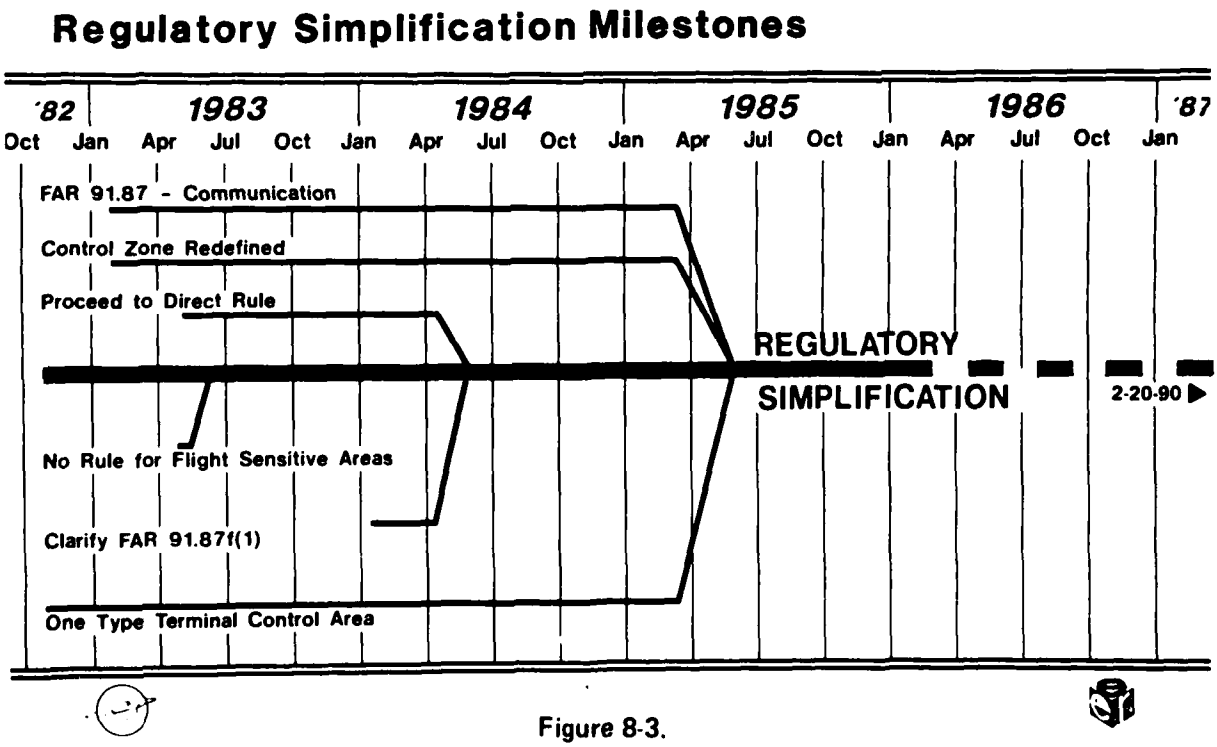


Figure 8-3.

861 Standards Development Enhancement Area

The Standards Development Enhancement Area depicted in Figure 8-2 represents 94 recommendations that address airborne and ATC ground equipment standards development for RNAV operations regardless of ground radar coverage, design standards for ARSA airspace/control zones/control tower areas, change to standard radar services provided VFR aircraft, standard RNAV route width development, changes to VORTAC standard service volumes, and development of new standards that address dependent surveillance systems in the future for helicopter operations in terminal airspace and other areas, such as the Northeast Corridor. Standards Development implementation begins in the Fourth Quarter of 1986 for the majority of these recommendations, but extends to the Fourth Quarter of 1992 to complete action on all recommendations in this area. Implementation may begin earlier for some recommendations in this set, as indicated by the depicted milestones.

861.1 Limited/Partial and Modified Recommendations

There are currently no recommendations in this Enhancement Area that are either being partially implemented, or modified and then implemented.

861.2 Non-Adopted Recommendations

There are currently no recommendations in this Enhancement Area that are not being adopted.

Standards Development Milestones

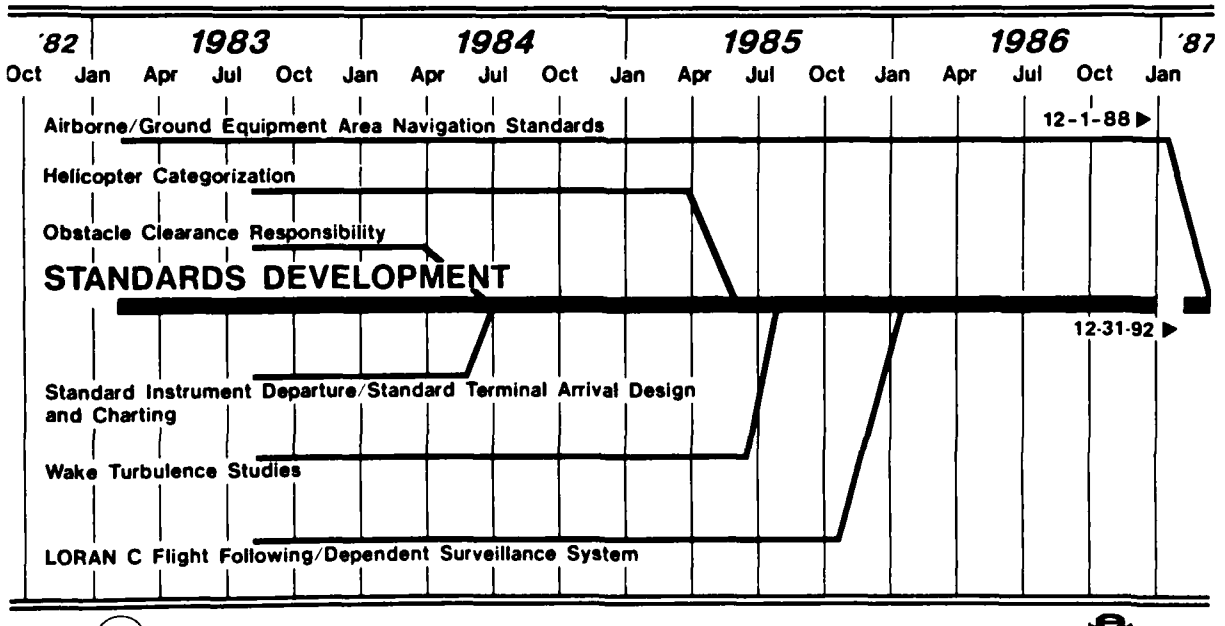


Figure 8-2.

860 REGULATIONS/STANDARDS ENHANCEMENTS IMPLEMENTATION PLAN

Recommendations identified as Regulations/Standards Enhancements are concerned with the simplification or elimination of regulatory rules, development of essential standards affecting future operations, modification to ATC separation standards, and numerous modifications to policy orders in support of other recommendations. Recommendations identified as Regulations/Standards improvement actions currently fall into four Enhancement Areas.

- Standards Development
- Regulatory Simplification
- Regulatory Elimination
- Separation

The Regulations/Standards System Area and each of the foregoing Enhancement Areas are depicted in Figure 8-1. As indicated, Handbooks is expected to be added as another Enhancement Area in a future revision. The central thick line in Figure 8-1 represents 222 recommendations that relate to Regulations/Standards with projected implementation predominantly complete by the Fourth Quarter of 1986, but extending to the Fourth Quarter of 1992 to complete action on all recommendations.

Implementation milestones for the Enhancement Areas currently identified for Regulations/Standards are more fully described in the following sections. Each section includes a figure that identifies recommendation milestones selected and depicted to represent specific events along the path to achieving overall enhancement in each Enhancement Area. Recommendations that are being either modified and then implemented, partially implemented, or not adopted are discussed in separate sections within each Enhancement Area.

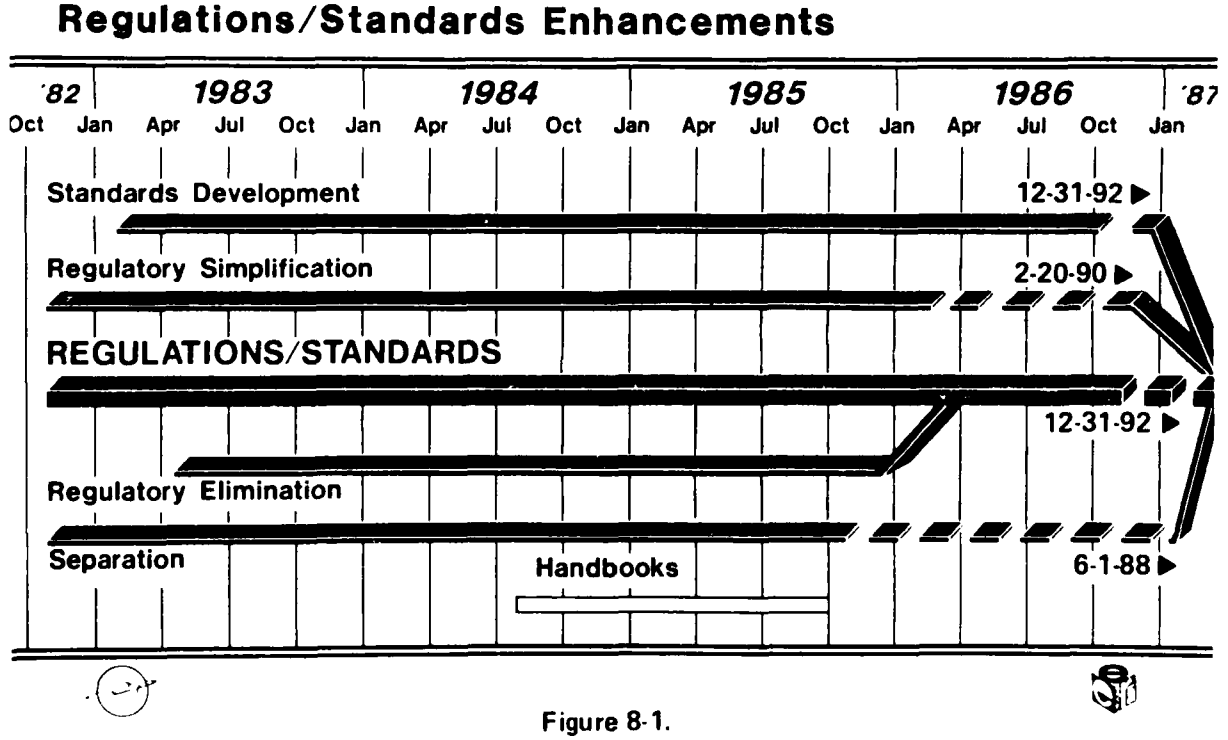


Figure 8-1.

problems. The proposal would impose a data gathering burden on ATC facilities; it was also suggested that the resulting data might be misleading since most ultralight activities occur at locations without an ATC facility. The difficulties associated with gathering data on unregistered vehicles was again stressed. Comments from FAA regional personnel in an informal FAA air traffic survey revealed no significant operational safety problems. The proposal was therefore withdrawn. (TG 2-2.4)

846 FAR Part 73

With regard to FAR Part 73, discussion in relation to the title of the FAR (Special Use Airspace) was undertaken. Because the term is commonly used to describe both regulatory categories of airspace and those which do not come under the regulatory process (i.e., military operations areas, controlled firing areas, and alert areas), there was discussion about changing the title of Part 73 to more clearly reflect that its provisions are restricted to prohibited and restricted areas only. Proponents of the change believed that, although clarifying the terminology might have little impact upon pilots, it might enhance current and future efforts to improve the management of and policy-making activities related to special use airspace areas. Others believed, however, that such action would probably not effect positive results, and, in addition, would impose a burden on the FAA to change all handbook and FIP references where special use airspace refers only to restricted areas and prohibited areas. The title of the FAR was therefore retained. (TG 1-1.5)

The definitions of participating and nonparticipating aircraft as those terms relate to special use airspace were also addressed. The fact that participating aircraft are only those aircraft that are engaged in, and are a part of, the activity being conducted within the special use airspace was unanimously affirmed. Subjective interpretations of the term participating aircraft by either the civil or military community were rejected. (TG 1-1.5)

A recommendation to limit the ceiling of restricted areas to the base of the PCA was considered. Flight activity now contained in restricted areas above FL 180 would be controlled by using ATC-assigned airspace (ATCAA). Due to legal and operational uncertainties, however, the proposal was not supported. (TG 1-1.5)

Part 73.13, Restrictions, was also discussed. One proponent believed the subparagraph to be superfluous since Part 91.95 imposes the same restrictions. Opponents did not share this view, nor did they agree that its deletion would further clarify Part 73. The subparagraph was retained. (TG 1-1.5)

The use of the term using agency in Part 73.15 was discussed. A suggestion to use the term proponent to further delineate the term and thereby minimize confusion involving its use was not supported, however. The term was retained. (TG 1-1.5)

The flexible aspects of special use airspace are supported by the broad, non-specific Part 73 text. There was some discussion, however, that non-specific text may lead to subjective interpretations and conflicting points of view in relation to both DOD and FAA requirements and priorities. Examples discussed included the areas of activities hazardous to nonparticipating aircraft, activities determined to be suitable for MOAs, priorities within ATCAAs, and the comprehensive scheduling and adequate designation of all special use airspace. Although these topics were examined, changes were not proposed, since there was a shared understanding that each situation was unique and must be addressed by the FAA/DOD interface at the regional levels. (TG 1-1.5)

850 FUTURE NAR ENHANCEMENTS TO REGULATIONS/STANDARDS

Further regulatory simplification is expected to result from the study of FAR Part 75 which addresses fixed routes from FL 180 through FL 450. The studies of FAR 91 (Subpart B), FAR 77, and Holding Pattern Criteria are also expected to yield several recommendations in this System Area.

controlling ATC facilities are not being informed about jump activities occurring on the extended centerlines of final approach courses, near congested areas, or near transition areas, where the implications for safety are most critical. If unable to provide advisory information to either the jump aircraft or to nonparticipating aircraft transitting the areas, by extending the requirement for authorization to other controlled airspace areas, ATC would not only be able to provide the necessary advisory information to jump aircraft, but would also be assured of receiving information that needs to be disseminated to nonparticipating aircraft under its control.

Doubts were raised about the expediency of requiring the authorization in these areas, however. Expanding the ATC role would create additional workload for both controllers and jump aircraft pilots. The fact that the activities are being conducted in VFR conditions in two-way radio communication with ATC was stressed. Furthermore, there was a widespread belief that operational delays might result in areas where other traffic is either not a major factor or is virtually nonexistent. (TG 2-2.4).

Another proposal concerned revising Section 5 of Chapter 7 of FAAH 7110.65C to note that ATC should provide separation to all aircraft under its control from the airspace authorized for the parachute jumping activity. Separation would be provided wherever ATC provides authorization to conduct parachute activities or wherever notification to a controlling ATC facility is provided by a parachute operator. The purpose of this proposal would be to extend the provision of separation services currently provided in positive control areas (PCAs) to control zones and other controlled airspace areas.

Since the activities are being conducted in VFR conditions, however, the responsibility for separation should remain with the nonparticipating aircraft, the jump aircraft, and the parachutists. Furthermore, ATC should not be burdened with the responsibility of separating nonparticipating aircraft under its control from the jump aircraft when other unknown VFR aircraft may be transitting the area. There was general agreement that the procedures appearing in Paragraph 1493 of FAAH 7110.65C should cover any situation that might occur. (TG 2-2.4).

In the area of glider operations, a proposal to develop an advisory circular (AC) to emphasize the need for pilots involved in such operations to coordinate their activities with ATC in terminal areas was considered. The general concensus, however, was that applicable FARs and supporting ACs are already adequate as written. (TG 2-2.4)

Consideration was given to the possible deletion of FAR Subpart 91.17(a)(4), which stipulates that a Flight Service Station (FSS) be notified of a glider towing operation in a control zone in the absence of an operating control tower. The applicability of the regulation in today's ATC environment was questioned. The general concensus was, however, that since the regulation emphasizes the need to inform the appropriate local control authority about such operations, it should be retained as written. (TG 2-2.4)

In the area of ultralight operations, one item discussed concerned the problems associated with gathering and maintaining adequate statistics on ultralight incidents and operational problems in controlled airspace. Existing data on incidents and violations may be misleading because many go unreported. Since the vehicles are not marked and radio communication is not maintained with ATC, violations cannot be issued until the vehicles have landed and operators have been identified. Examples were provided where incursions into control zones and airport traffic areas have gone unreported due to these reasons.

A suggestion that FAA acquire and maintain statistics on ultralight incidents and operational problems in controlled airspace was considered. The data could then be used to determine whether ultralight operations are creating safety

	TG 1-4.1 Weather Programs
Chairman, Federal Aviation Administration (FAA)	Joseph Strobel Central Region
Project Management Staff (PMS) Representative	Ronald Haggerty
National Airspace Review Advisory Committee (NARAC) Members	
Federal Aviation Administration (FAA)	Eugene Wygal Procedures
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Lt. Col. Richard Gramzow, USA
Air Transport Association (ATA)	Edward Abbot
National Business Aircraft Association (NBAA)	William Horn
Regional Airline Association (RAA)	
Experimental Aircraft Association (EAA)	
Helicopter Association International (HAI)	
Air Traffic Control Association, Inc. (ATCA)	
Soaring Society of America (SSA)	
National Ocean Service (NOS)	
Aircraft Owners and Pilots Association (AOPA)	Thomas Oneto
United States Parachute Association (USPA)	
Transport Canada (ATPI)	
General Aviation Manufacturers Association (GAMA)	
National Association of State Aviation Officials (NASAO)	
Airline Pilots Association (ALPA)	
American Association of Airport Executives (AAAE)	
Airport Operators Council International, Inc. (AOCI)	
American Institute of Aeronautics and Astronautics (AIAA)	
Allied Pilots Association (APA)	James Hopper
National Air Transportation Association (NATA)	
Aerospace Industries Association (AIA)	
International Air Transport Association (IATA)	
National Weather Service (NWS)	John Blasic
American Helicopter Society, Incorporated (AHSI)	
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)	
Participants/Other Attendees	
FAA (Headquarters) (Field) DOD (USAF) (USN) (USA) Other NARAC Other	1 2 – – – – –
Total	3

	TG 1-5.1 Facility Shutdown Agreement	TG 1-5.2 Canadian Airspace Redefinition	TG 1-5.3 Common Airspace and Procedures Integration
Chairman, Federal Aviation Administration (FAA)	Shelomo Wugalter Airspace and Air Traffic Rules	Shelomo Wugalter Airspace and Air Traffic Rules	Lewis Butler Procedures
Project Management Staff (PMS) Representative	L. Jack Overman	L. Jack Overman	Jimmie Walker
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	Lewis Butler Procedures	Lewis Butler Procedures	Edward Forsythe Procedures
Department of Defense (DOD)			
U.S. Air Force (USAF)		Lt. Col. James Crook, USAF	Lt. Col. James Crook, USAF
U.S. Navy (USN)	Cdr. Thomas Brown, USN		
U.S. Army (USA)			
Air Transport Association (ATA)			
National Business Aircraft Association (NBAA)			
Regional Airline Association (RAA)			
Experimental Aircraft Association (EAA)			
Helicopter Association International (HAI)			
Air Traffic Control Association, Inc. (ATCA)			
Soaring Society of America (SSA)			
National Ocean Service (NOS)			
Aircraft Owners and Pilots Association (AOPA)			
United States Parachute Association (USPA)			
Transport Canada (ATPI)	Donald Forsland	Donald Forsland	Donald Forsland
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)			
Airline Pilots Association (ALPA)			
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOCI)			
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)			
National Air Transportation Association (NATA)			
Aerospace Industries Association (AIA)			
International Air Transport Association (IATA)			
National Weather Service (NWS)			
American Helicopter Society, Incorporated (AHSI)			
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	2	1	2
(Field)	5	5	5
DOD (USAF)	–	–	1
(USN)	–	–	1
(USA)	–	–	–
Other NARAC	1	1	1
Other	–	–	–
Total	8	7	10

	TG 1-6.1 VFR Charting	TG 1-6.2 RF Charts	TG 1-6.3 Instrument Approach Procedures and Charted Visual Flight Procedures Charts
Chairman, Federal Aviation Administration (FAA)	James Burns Airspace and Air Traffic Rules	James Burns Airspace and Air Traffic Rules	James Burns Airspace and Air Traffic Rules
Project Management Staff (PMS) Representative	Major Mike Ball, USAF	Major Mike Ball USAF	Major Mike Ball, USAF
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	Paul Best Aircraft Programs	Donald Funai Aircraft Programs	Donald Funai Aircraft Programs
Department of Defense (DOD) U.S. Air Force (USAF)	Major James Sullivan, USAF	Major James Sullivan, USAF	
U.S. Navy (USN) U.S. Army (USA)			Dennis Newport, USA
Air Transport Association (ATA)		Gary Church	Lawrence Gillespie
National Business Aircraft Association (NBAA)		Donald Barber	William Horn
Regional Airline Association (RAA)			
Experimental Aircraft Association (EAA)	David Scott	Eugene Brown	Eugene Brown
Helicopter Association International (HAI)	Glenn Leister		
Air Traffic Control Association, Inc. (ATCA)			
Soaring Society of America (SSA)			
National Ocean Service (NOS)	Frank Maloney	Gerald Saladin	Ronald Bolton
Aircraft Owners and Pilots Association (AOPA)	Dennis Wright	Dennis Wright	Dennis Wright
United States Parachute Association (USPA)			
Transport Canada (ATPI)			
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)	John Scott	John Scott	John Scott
Airline Pilots Association (ALPA)		Edwin Friend	James Forgas
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOCI)			
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)	Robert LeFevre	Robert LeFevre	Robert LeFevre
National Air Transportation Association (NATA)			
Acrospace Industries Association (AIA)			
International Air Transport Association (IATA)			
National Weather Service (NWS)			
American Helicopter Society, Incorporated (AHSI)			
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	–	1	3
(Field)	2	2	3
DOD (USAF)	–	1	1
(USN)	–	2	2
(USA)	1	3	1
Other NARAC	–	5	5
Other	–	–	1
Total	3	14	16

	TG 1-6.4 SID and STAR Charts and the Airport Facility Directory
Chairman, Federal Aviation Administration (FAA)	James Burns Airspace-Rules and Aeronautical Information
Project Management Staff (PMS) Representative	Lt. Col. Mike Ball USAF
National Airspace Review Advisory Committee (NARAC) Members	
Federal Aviation Administration (FAA)	William Crawford Southern Region
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Col. Carl Armstrong, USN
Air Transport Association (ATA)	Gary Church
National Business Aircraft Association (NBAA)	William Horn Elmer Haupt
Regional Airline Association (RAA)	
Experimental Aircraft Association (EAA)	George Lutz
Helicopter Association International (HAI)	
Air Traffic Control Association, Inc. (ATCA)	
Soaring Society of America (SSA)	
National Ocean Service (NOS)	Lcdr. Bradford Meyers
Aircraft Owners and Pilots Association (AOPA)	Dennis Wright
United States Parachute Association (USPA)	
Transport Canada (ATPI)	
General Aviation Manufacturers Association (GAMA)	
National Association of State Aviation Officials (NASAO)	Jack Thompson Richard Ware
Airline Pilots Association (ALPA)	Edwin Friend
American Association of Airport Executives (AAAE)	
Airport Operators Council International, Inc. (AOCI)	
American Institute of Aeronautics and Astronautics (AIAA)	
Allied Pilots Association (APA)	Robert LeFevre
National Air Transportation Association (NATA)	
Aerospace Industries Association (AIA)	
International Air Transport Association (IATA)	
National Weather Service (NWS)	
American Helicopter Society, Incorporated (AHSI)	
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)	
Participants/Other Attendees	
FAA (Headquarters) (Field) DOD (USAF) (USN) (USA) Other NARAC Other	10 2 2 2 2 10 1
Total	29

	TG 1-7.1 U.S. Airspace Classification	TG 1-7.2 Airspace Application	TG 1-7.3 Pilot Requirements
Chairman, Federal Aviation Administration (FAA)	Shelomo Wugalter Airspace and Air Traffic Rules	Shelomo Wugalter Airspace and Air Traffic Rules	Arthur Jones General Aviation and Commercial
Project Management Staff (PMS) Representative	Jimmie Walker	Jimmie Walker	Jimmie Walker
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	Billy Hill Airspace and Air Traffic Rules	Billy Hill Airspace and Air Traffic Rules	James Byers General Aviation and Commercial
Department of Defense (DOD) U.S. Air Force (USAF)	Lt. Col. Joseph Warfel, USAF	Lt. Col. Robert Bertanowicz, USAF	Lt. Col. Joseph Warfel, USAF
U.S. Navy (USN) U.S. Army (USA)			
Air Transport Association (ATA)	Gary Church	Gary Church	Gary Church
National Business Aircraft Association (NBAA)	William Fiener	William Horn	Gilbert Quinby
Regional Airline Association (RAA)	Martin Macy	Martin Macy	Martin Macy
Experimental Aircraft Association (EAA)	James Eggleston	James Eggleston	James Eggleston
Helicopter Association International (HAI)	Glenn Leister	Glenn Leister	Glenn Leister
Air Traffic Control Association, Inc. (ATCA)			
Soaring Society of America (SSA)			
National Ocean Service (NOS)			
Aircraft Owners and Pilots Association (AOPA)	Victor Kayne	Victor Kayne	John Sheehan
United States Parachute Association (USPA)			
Transport Canada (ATPI)	Donald Forsland	Donald Forsland	Donald Forsland
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)			
Airline Pilots Association (ALPA)	Edward Krupinski	Edward Krupinski	Thomas Kreamer
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOCI)			
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)			
National Air Transportation Association (NATA)			
Aerospace Industries Association (AIA)			
International Air Transport Association (IATA)			
National Weather Service (NWS)			
American Helicopter Society, Incorporated (AHSI)			
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	1	5	4
(Field)	2	2	–
DOD (USAF)	1	9	–
(USN)	1	1	1
(USA)	2	2	2
Other NARAC	5	8	4
Other	–	2	1
Total	12	29	12

	TG 2-1.1 Severe Weather Avoidance Plan	TG 2-1.2 Flow Management
Chairman, Federal Aviation Administration (FAA)	Samuel Rosenzweig Traffic Flow Management	Dan Creedon Operations Division
Project Management Staff (PMS) Representative	Stephen Harless	Stephen Harless
National Airspace Review Advisory Committee (NARAC) Members		
Federal Aviation Administration (FAA)	Donald Dacey New York ARTCC	Samuel Rosenzweig Traffic Flow Management
Department of Defense (DOD) U.S. Air Force (USAF)		Lt. Col. James Brown, USAF
U.S. Navy (USN)	Lt. Col. James Calhoun, USN	
U.S. Army (USA)		
Air Transport Association (ATA)	Gary Church	Gary Church
National Business Aircraft Association (NBAA)	William Horn	Anthony Foster
Regional Airline Association (RAA)	Martin Macy	Martin Macy
Experimental Aircraft Association (EAA)		
Helicopter Association International (HAI)		
Air Traffic Control Association, Inc. (ATCA)		
Soaring Society of America (SSA)		
National Ocean Service (NOS)		
Aircraft Owners and Pilots Association (AOPA)		
United States Parachute Association (USPA)		
Transport Canada (ATPI)		
General Aviation Manufacturers Association (GAMA)	Ronald Swenda	Ronald Swenda
National Association of State Aviation Officials (NASAO)		
Airline Pilots Association (ALPA)	Richard Vitale	Edward Krupinski
American Association of Airport Executives (AAAE)		
Airport Operators Council International, Inc. (AOCI)		
American Institute of Aeronautics and Astronautics (AIAA)		
Allied Pilots Association (APA)		
National Air Transportation Association (NATA)		
Aerospace Industries Association (AIA)	Kenneth Holt	Kenneth Holt
International Air Transport Association (IATA)		
National Weather Service (NWS)		
American Helicopter Society, Incorporated (AHSI)		
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)		
Participants/Other Attendees		
FAA (Headquarters)	–	5
(Field)	4	6
DOD (USAF)	2	7
(USN)	2	–
(USA)	1	2
Other NARAC	3	4
Other	5	1
Total	17	25

	TG 2-2.1 Separation Review (General)	TG 2-2.2 Traffic Segregation by Categories/IFR Departure Procedures	TG 2-2.3 SVFR Procedures
Chairman, Federal Aviation Administration (FAA)	Gerald Linton Detroit ATCT	John Gorman San Antonio ATCT	Robert Botcher Minneapolis ATCT
Project Management Staff (PMS)	Anthony Borden	Anthony Borden	T. James Clark, Jr.
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	Ronald Nichol, Terminal Procedures	Michael Unverfurth, En Route Procedures Ronald Nichol, Terminal Procedures	Robert Dye, Procedures
Department of Defense (DOD) U.S. Air Force (USAF)	Lt. Col. Robert Bertanowicz, USAF	Lt. Col. Robert Bertanowicz, USAF Lt. Col. Grant Hachmann, USAF	
U.S. Navy (USN) U.S. Army (USA)			Accm. Fred Jackson, USN
Air Transport Association (ATA)	Gary Church	Gary Church	Robert Wylie
National Business Aircraft Association (NBAA)			Dennis Wright
Regional Airline Association (RAA)	Martin Macy	Martin Macy	Gary Church
Experimental Aircraft Association (EAA)			
Helicopter Association International (HAI)	Glenn Leister	Glenn Leister	Glenn Leister
Air Traffic Control Association, Inc. (ATCA)	Donald Francke	Donald Francke	Donald Francke
Soaring Society of America (SSA)			
National Ocean Service (NOS)			
Aircraft Owners and Pilots Association (AOPA)	Edward Malo	Edward Malo	Edward Malo
United States Parachute Association (USPA)			
Transport Canada (ATPI)			
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)			
Airline Pilots Association (ALPA)	Edward Krupinski	Edward Krupinski	Edward Krupinski
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOCI)			
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)	Robert LeFevre	Robert LeFevre	Robert LeFevre
National Air Transportation Association (NATA)			
Aerospace Industries Association (AIA)	Kenneth Holt	Kenneth Holt	
International Air Transport Association (IATA)			
National Weather Service (NWS)			
American Helicopter Society, Incorporated (AHSI)			
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	5	5	2
(Field)	4	3	3
DOD (USAF)	5	1	1
(USN)	2	1	1
(USA)	2	4	1
Other NARAC	4	7	1
Other	2	–	–
Total	24	21	9

	TQ 2-2.4 Parachute, Glider, and Ultralight Operations
Chairman, Federal Aviation Administration (FAA)	Robert Botcher Minneapolis ATCT
Project Management Staff (PMS) Representative	T. James Clark, Jr.
National Airspace Review Advisory Committee (NARAC) Members	
Federal Aviation Administration (FAA)	Paul Johnston, Procedures
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Major Richard Perry, USAF
Air Transport Association (ATA)	Gary Church
National Business Aircraft Association (NBAA)	Dennis Wright
Regional Airline Association (RAA)	
Experimental Aircraft Association (EAA)	Charles Schuck
Helicopter Association International (HAI)	
Air Traffic Control Association, Inc. (ATCA)	Donald Francke
Soaring Society of America (SSA)	Albert Blackburn
National Ocean Service (NOS)	
Aircraft Owners and Pilots Association (AOPA)	Edward Maio
United States Parachute Association (USPA)	Alan King
Transport Canada (ATPI)	
General Aviation Manufacturers Association (GAMA)	
National Association of State Aviation Officials (NASAO)	
Airline Pilots Association (ALPA)	Edward Krupinski
American Association of Airport Executives (AAAE)	
Airport Operators Council International, Inc. (AOCI)	
American Institute of Aeronautics and Astronautics (AIAA)	
Allied Pilots Association (APA)	Robert LeFevre
National Air Transportation Association (NATA)	
Aerospace Industries Association (AIA)	Kenneth Holt
International Air Transport Association (IATA)	
National Weather Service (NWS)	
American Helicopter Society, Incorporated (AHSI)	
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)	
Participants/Other Attendees	
FAA (Headquarters) (Field) DOD (USAF) (USN) (USA) Other NARAC Other	3 3 1 – 2 5 –
Total	14

	TG 2-3.1 Subpart B Evaluation	TG 2-3.2 Part 77 Rewrite	TG 2-3.4 Medium Attitude Communication Area
Chairman, Federal Aviation Administration (FAA)	Burton Chandler Airspace Rules and Aeronautical Information Division	Sid Wugalter Airspace Rules and Aeronautical Information Division	Loyd Duncan Minneapolis ARTCC
Project Management Staff (PMS)	John Watterson	John Watterson	John Watterson
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	Bill Winnett Wichita ATCT	Clair Billington Southwest Region	Walter Cronkhite Procedures Division
Department of Defense (DOD) U.S. Air Force (USAF)			Lt. Col. Grant Hachmann
U.S. Navy (USN) U.S. Army (USA)	CDR Roger Ryon	CDR James S. Hardie	
Air Transport Association (ATA)	Lawrence E. Gillespie	Lawrence E. Gillespie	William Canty
National Business Aircraft Association (NBAA)	Dennis C. Wright	Dennis C. Wright	Dennis C. Wright
Regional Airline Association (RAA)	Gary Church	Gary Church	Gary Church
Experimental Aircraft Association (EAA)			Charles Schuck
Helicopter Association International (HAI)	Lou Bertolotta	Glenn A. Leister	
Air Traffic Control Association, Inc. (ATCA)			
Soaring Society of America (SSA)			
National Ocean Service (NOS)			
Aircraft Owners and Pilots Association (AOPA)	Peter C. McHugh	Ed Scott	Edward J. Malo
United States Parachute Association (USPA)			
Transport Canada (ATPI)			Floyd Kelly
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)	Richard M. Ware	Herb Brown	
Airline Pilots Association (ALPA)	Ward J. Baker	Wood Lockhart Michael Moore	Edward Krupinski
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOCI)		Leo Duggan	
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)	Robert C. LeFevre		Robert C. LeFevre
National Air Transportation Association (NATA)	B.D. "Bev" Draughon	B.D. "Bev" Draughon	B.D. "Bev" Draughon
Aerospace Industries Association (AIA)			
International Air Transport Association (IATA)			
National Weather Service (NWS)			
American Helicopter Society, Incorporated (AHSI)			
Servicios a la navegacion en el Espacio Aero Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	1	6	2
(Field)	–	–	–
DOD (USAF)	1	2	–
(USN)	–	1	–
(USA)	1	–	–
Other NARAC	–	–	1
Other	–	–	–
Total	3	9	3

	TG 2-4.1 Helicopter Separation	TG 2-4.2 Helicopter Routes	TG 2-4.3 Helicopter Charts
Chairman, Federal Aviation Administration (FAA)	Capt. Bobby Wilks ATC Procedures	Capt. Bobby Wilks ATC Procedures	Capt. Bobby Wilks ATC Procedures
Project Management Staff (PMS) Representative	Major Michael Ball, USAF	Major Michael Ball, USAF	Major Michael Ball, USAF
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	Michael Unverfurth Procedures	Lt. John Grant Procedures	Lt. John Cozart Procedures
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	CW_4 Peter McHugh USA	CW_4 Peter McHugh USA	CW_4 Peter McHugh USA
Air Transport Association (ATA)			
National Business Aircraft Association (NBAA)	Elmer Haupt	Elmer Haupt	Elmer Haupt
Regional Airline Association (RAA)			
Experimental Aircraft Association (EAA)			George Lutz
Helicopter Association International (HAI)	Glenn Leister	Glenn Leister	Glenn Leister
Air Traffic Control Association, Inc. (ATCA)			
Soaring Society of America (SSA)			
National Ocean Service (NOS)		Ledr. Bradford Mevers	Ledr. Bradford Mevers
Aircraft Owners and Pilots Association (AOPA)			
United States Parachute Association (USPA)			
Transport Canada (ATPI)			
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)	Michael McCullough	Michael McCullough	
Airline Pilots Association (ALPA)			
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOCI)			
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)			
National Air Transportation Association (NATA)	Beverly Draughon	Beverly Draughon	Beverly Draughon
Aerospace Industries Association (AIA)			
International Air Transport Association (IATA)			
National Weather Service (NWS)			
American Helicopter Society, Incorporated (AHSI)	John Zugschwert	John Zugschwert	
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	5	3	2
(Field)	3	4	4
DOD (USAF)	2	2	–
(USN)	1	1	–
(USA)	1	1	–
Other NARAC	2	1	3
Other	2	6	2
Total	16	18	11

	TG 2-4.4 Helicopter Instrument Approach Procedures
Chairman, Federal Aviation Administration (FAA)	Capt. Bobby C. Wilks FAA, ATC Procedures
Project Ma lagement Staff (PMS) Representative	Lt. Col. Mike Ball
National Airspace Review Advisory Committee (NARAC) Members	
Federal Aviation Administration (FAA)	Lt. Col. Robert Vandel Procedures
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Forrest Helfenberger
Air Transport Association (ATA)	
National Business Aircraft Association (NBAA)	Elmer H. "Moe" Haupt
Regional Airline Association (RAA)	
Experimental Aircraft Association (EAA)	
Helicopter Association International (HAI)	Glenn A. Leister
Air Traffic Control Association, Inc. (ATCA)	
Soaring Society of America (SSA)	
National Ocean Service (NOS)	Michael Kuck
Aircraft Owners and Pilots Association (AOPA)	Peter C. McHugh
United States Parachute Association (USPA)	
Transport Canada (ATPI)	
General Aviation Manufacturers Association (GAMA)	
National Association of State Aviation Officials (NASAO)	Rick Wray
Airline Pilots Association (ALPA)	Michael Moore
American Association of Airport Executives (AAAE)	
Airport Operators Council International, Inc. (AOCI)	
American Institute of Aeronautics and Astronautics (AIAA)	
Allied Pilots Association (APA)	
National Air Transportation Association (NATA)	
Aerospace Industries Association (AIA)	
International Air Transport Association (IATA)	
National Weather Service (NWS)	
American Helicopter Society, Incorporated (AHSI)	
Servicios a la navagacion en el Espacio Aero Mexicano (SENEAM)	
Participants/Other Attendees	
FAA (Headquarters) (Field) DOD (USAF) (USN) (USA) Other NARAC Other Total	11 4 1 2 2 7 – 27

	TG 2-5.1 National Beacon Code Allocation Plan
Chairman, Federal Aviation Administration (FAA)	Edward Forsythe Air Traffic Service
Project Management Staff (PMS) Representative	John Watterson
National Airspace Review Advisory Committee (NARAC) Members	
Federal Aviation Administration (FAA)	Peter Sweers Central Region
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Cdr. Rowlett Bruce, USN
Air Transport Association (ATA)	
National Business Aircraft Association (NBAA)	
Regional Airline Association (RAA)	
Experimental Aircraft Association (EAA)	
Helicopter Association International (HAI)	
Air Traffic Control Association, Inc. (ATCA)	
Soaring Society of America (SSA)	
National Ocean Service (NOS)	
Aircraft Owners and Pilots Association (AOPA)	
United States Parachute Association (USPA)	
Transport Canada (ATPI)	
General Aviation Manufacturers Association (GAMA)	
National Association of State Aviation Officials (NASAO)	
Airline Pilots Association (ALPA)	
American Association of Airport Executives (AAAE)	
Airport Operators Council International, Inc. (AOCI)	
American Institute of Aeronautics and Astronautics (AIAA)	
Allied Pilots Association (APA)	
National Air Transportation Association (NATA)	
Aerospace Industries Association (AIA)	
International Air Transport Association (IATA)	
National Weather Service (NWS)	
American Helicopter Society, Incorporated (AHSI)	
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)	
Participants/Other Attendees	
FAA (Headquarters) (Field)	1 2
DOD (USAF) (USN) (USA)	1 – –
Other NARAC	–
Other	–
Total	4

	TG 3-1.1 NOTAM Evaluation/Flight Data Dissemination	TG 3-1.2 Flight Plan Format	TG 3-1.3 Airman's Information Manual
Chairman, Federal Aviation Administration (FAA)	Willis Nelson FSS Procedures	Willis Nelson FSS Procedures	James Bassett Airspace-Rules and Aeronautical Information Division
Project Management Staff (PMS) Representative	Stephen Herless	Stephen Herless	Joe Stephens
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	Trent Cummings Ketchikan FSS	Neil Saunders Airspace-Rules and Aeronautical Information	Lawrence Even Great Lakes Region
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Robert Lesperance, USN		Lt. Col. James Brown
Air Transport Association (ATA)	Gary Church	Gary Church	Lawrence E. Gillespie
National Business Aircraft Association (NBAA)		William Stine II	Dennis C. Wright
Regional Airline Association (RAA)	Martin Macy	Martin Macy	Gary Church
Experimental Aircraft Association (EAA)			
Helicopter Association International (HAI)	Glenn Leister	Glenn Leister	Glenn A. Leister
Air Traffic Control Association, Inc. (ATCA)			
Soaring Society of America (SSA)			
National Ocean Service (NOS)	Arthur Dodds		
Aircraft Owners and Pilots Association (AOPA)	Dennis Wright	Dennis Wright	Peter C. McHugh
United States Parachute Association (USPA)			
Transport Canada (ATP)			
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)			
Airline Pilots Association (ALPA)	Ward Baker	Edward Krupinski	Edward Krupinski
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOCI)			
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)			
National Air Transportation Association (NATA)			B.D. "Bev" Draughon
Aerospace Industries Association (AIA)		Kenneth Holt	
International Air Transport Association (IATA)	Lincoln Lee		
National Weather Service (NWS)			
American Helicopter Society, Incorporated (AHSI)			
Servicios a la navegacion en el Espacio Aero Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	10	5	7
(Field)	3	3	1
DOD (USAF)	2	1	–
(USN)	–	1	1
(USA)	2	1	2
Other NARAC	8	2	–
Other	–	1	1
Total	25	14	12

	TG 3-1.4 Airport Information Service	TG 3-1.5 Airman's Information Manual-Organization	TG 3-1.6 Airport Operations/ Runway Surface Conditions
Chairman, Federal Aviation Administration (FAA)	Timothy E. Halpin Detroit ATCT	Lawrence Even Great Lakes Region	Robert R. Botcher Great Lakes Region
Project Management Staff (PMS) Representative	Steve Harless	Joe Stephens	Jim Clark
National Airspace Review Advisory Committee (NARAC) Members			
Federal Aviation Administration (FAA)	James S. Rood Procedures	Bill Meyers Procedures	Carl Steins Safety & Compliance
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Major Walter "Skip" Fisher	Adam Degutis Jr.	Maj. James F. Kolonoski
Air Transport Association (ATA)	Robert M. Wylie	William Canty	Raymond Hilton
National Business Aircraft Association (NBAA)	Elmer "Mo" Haupt		
Regional Airline Association (RAA)	Gary Church	Gary Church	Gary Church
Experimental Aircraft Association (EAA)			
Helicopter Association International (HAI)	Glenn A. Leister	Glenn A. Leister	
Air Traffic Control Association, Inc. (ATCA)			
Soaring Society of America (SSA)			
National Ocean Service (NOS)			
Aircraft Owners and Pilots Association (AOPA)	Edward J. Malo	Peter C. McHugh	Douglas Lundgren
United States Parachute Association (USPA)			
Transport Canada (ATPI)			
General Aviation Manufacturers Association (GAMA)			
National Association of State Aviation Officials (NASAO)			
Airline Pilots Association (ALPA)	Edward Krupinski	Edward Krupinski	David Haase
American Association of Airport Executives (AAAE)			
Airport Operators Council International, Inc. (AOCI)			Leo Duggan
American Institute of Aeronautics and Astronautics (AIAA)			
Allied Pilots Association (APA)	James Lorenzini		Edward Halpin
National Air Transportation Association (NATA)	B.D. "Bev" Draughon	B.D. "Bev" Draughon	B.D. "Bev" Draughon
Aerospace Industries Association (AIA)			
International Air Transport Association (IATA)			
National Weather Service (NWS)			
American Helicopter Society Incorporated (AHS)			
Servicios a la navegacion en el Espacio Aero Mexicano (SENEAM)			
Participants/Other Attendees			
FAA (Headquarters)	2	2	10
(Field)	2	1	6
DOD (USAF)	–	–	1
(USN)	–	1	1
(USA)	1	1	–
Other NARAC	1	–	5
Other	–	1	12
Total	6	6	35

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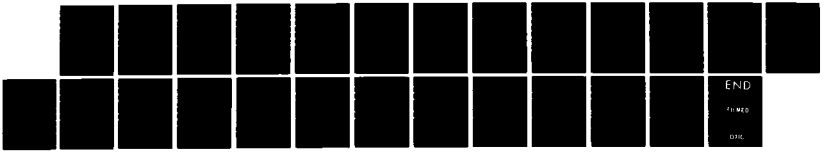

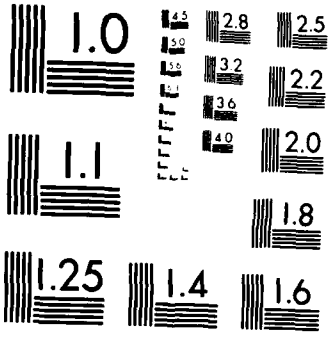

	TG 3-1.7 Airman's Information Manual-Content
Chairman, Federal Aviation Administration (FAA)	Lawrence Even Great Lakes Region
Project Management Staff (PMS) Representative	Joe Stephens
National Airspace Review Advisory Committee (NARAC) Members	
Federal Aviation Administration (FAA)	Dennis Davis, Procedures et. al (3 FAA Members)
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Adam Degutis Jr.
Air Transport Association (ATA)	William Canty
National Business Aircraft Association (NBAA)	
Regional Airline Association (RAA)	
Experimental Aircraft Association (EAA)	
Helicopter Association International (HAI)	Glenn A. Leister
Air Traffic Control Association, Inc. (ATCA)	Rocky Gannon
Soaring Society of America (SSA)	
National Ocean Service (NOS)	
Aircraft Owners and Pilots Association (AOPA)	Peter C. McHugh
United States Parachute Association (USPA)	
Transport Canada (ATPI)	
General Aviation Manufacturers Association (GAMA)	
National Association of State Aviation Officials (NASAO)	
Airline Pilots Association (ALPA)	Edward Krupinski
American Association of Airport Executives (AAAE)	
Airport Operators Council International, Inc. (AOCI)	
American Institute of Aeronautics and Astronautics (AIAA)	
Allied Pilots Association (APA)	
National Air Transportation Association (NATA)	B.D. "Bev" Draughon
Aerospace Industries Association (AIA)	
International Air Transport Association (IATA)	
National Weather Service (NWS)	
American Helicopter Society, Incorporated (AHSI)	
Servicios a la navegacion en el Espacio Aero Mexicano (SENEAM)	
Participants/Other Attendees	
FAA (Headquarters) (Field) DOD (USAF) (USN) (USA) Other NARAC Other	2 – – – 2 – –
Total	4

	TG 3-2.1 International Delegated Airspace
Chairman, Federal Aviation Administration (FAA)	*Drexley Barksdale* Southern Region
Project Management Staff (PMS) Representative	Herman Hudson
National Airspace Review Advisory Committee (NARAC) Members	
Federal Aviation Administration (FAA)	George Hussey Airspace-Rules and Aeronautical Information
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Cdr. Rowlett Bruce, USN
Air Transport Association (ATA)	Gary Church
National Business Aircraft Association (NBAA)	William Stine, II
Regional Airline Association (RAA)	
Experimental Aircraft Association (EAA)	
Helicopter Association International (HAI)	Glenn Leister
Air Traffic Control Association, Inc. (ATCA)	
Soaring Society of America (SSA)	
National Ocean Service (NOS)	
Aircraft Owners and Pilots Association (AOPA)	
United States Parachute Association (USPA)	
Transport Canada (ATPI)	
General Aviation Manufacturers *Association* (GAMA)	
National Association of State Aviation Officials (NASAO)	
Airline Pilots Association (ALPA)	
American Association of Airport Executives (AAAE)	
Airport Operators Council International, Inc. (AOCI)	
American Institute of Aeronautics and Astronautics (AIAA)	
Allied Pilots Association (APA)	
National Air Transportation *Association* (NATA)	Beverly Draughon
Aerospace Industries Association (AIA)	Joseph Snodgrass
International Air Transport Association (IATA)	
National Weather Service (NWS)	
American Helicopter Society, Incorporated (AHSI)	
Servicios a la Navegacion en el Espacio Aereo Mexicano (SENEAM)	
Participants/Other Attendees	
FAA (Headquarters) (Field) DOD (USAF) (USN) (USA) Other NARAC Other	2 3 3 – 1 1 –
Total	10

	TG 3-3.1 Membership
Chairman, Federal Aviation Administration (FAA)	Willis Nelson Procedures Division
Project Management Staff (PMS) Representative	Robert Morton
National Airspace Review Advisory Committee (NARAC) Members	
Federal Aviation Administration (FAA)	Cathy Carroll, Airspace-Rules/ Aero Info Div et. al. (5 FAA members)
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	 SMSgt James Norris George Brooks
Air Transport Association (ATA)	
National Business Aircraft Association (NBAA)	
Regional Airline Association (RAA)	
Experimental Aircraft Association (EAA)	
Helicopter Association International (HAI)	
Air Traffic Control Association, Inc. (ATCA)	
Soaring Society of America (SSA)	
National Ocean Service (NOS)	
Aircraft Owners and Pilots Association (AOPA)	
United States Parachute Association (USPA)	
Transport Canada (ATPI)	
General Aviation Manufacturers Association (GAMA)	
National Association of State Aviation Officials (NASAO)	
Airline Pilots Association (ALPA)	
American Association of Airport Executives (AAAE)	
Airport Operators Council International, Inc. (AOCI)	
American Institute of Aeronautics and Astronautics (AIAA)	
Allied Pilots Association (APA)	
National Air Transportation Association (NATA)	
Aerospace Industries Association (AIA)	
International Air Transport Association (IATA)	
National Weather Service (NWS)	
American Helicopter Society, Incorporated (AHSI)	
Servicios a la navegacion en el Espacio Aero Mexicano (SENEAM)	
Participants-Other Attendees	
FAA (Headquarters) (Field) DOD (USAF) (USN) (USA) Other NARAC Other Total	1 4 – – – – – 5

	TG 3-4.3 Membership	G 3-4.4 Flow Control Procedures
Chairman, Federal Aviation Administration (FAA)	Stanley Ensley Southern Region	William Peery, Operations
Project Management Staff (PMS) Representative	Lt. Col. Michael Ball	Stephen Harless
National Airspace Review Advisory Committee (NARAC) Members		
Federal Aviation Administration (FAA)	Lou McCaughey Procedures	James Honde, Procedures et. al. (6 FAA members)
Department of Defense (DOD) U.S. Air Force (USAF) U.S. Navy (USN) U.S. Army (USA)	Lt. Col. James L. Crook	Lt. Col. James Brown, USAF Lingiem Odema, USA
Air Transport Association (ATA)		
National Business Aircraft Association (NBAA)		
Regional Airline Association (RAA)		
Experimental Aircraft Association (EAA)		
Helicopter Association International (HAI)		
Air Traffic Control Association, Inc. (ATCA)		
Soaring Society of America (SSA)		
National Ocean Service (NOS)		
Aircraft Owners and Pilots Association (AOPA)		
United States Parachute Association (USPA)		
Transport Canada (ATPI)		
General Aviation Manufacturers Association (GAMA)		
National Association of State Aviation Officials (NASAO)		
Airline Pilots Association (ALPA)		
American Association of Airport Executives (AAAE)		
Airport Operators Council International, Inc. (AOCI)		
American Institute of Aeronautics and Astronautics (AIAA)		
Allied Pilots Association (APA)		
National Air Transportation Association (NATA)		
Aerospace Industries Association (AIA)		
International Air Transport Association (IATA)		
National Weather Service (NWS)		
American Helicopter Society, Incorporated (AHSI)		
Servicios a la navegacion en el Especio Aero Mexicano (SENEAM)		
Participants/Other Attendees		
FAA (Headquarters)	6	7
(Field)	2	3
DOD (USAF)	11	1
(USN)	1	–
(USA)	2	–
Other NARAC	–	–
Other	–	1
Total	22	12

APPENDIX B

NAR SCOPE

TABLE B-1. NAR SCOPE
(As Published in the Federal Register in April 1982)

TASK GROUP 11
AIRSPACE FOR SPECIAL USE

- 11.1 Military Training Routes
- 11.2 Temporary Special Use Airspace/Real Time Joint Use Airspace
- 11.3 Special Use Airspace Requirement Review/Separation from Special Use Airspace
- 11.4 National Security Areas/Flight Test Areas
- 11.5 Part 73 (FARs) Review

TASK GROUP 12
TERMINAL AIRSPACE

- 12.1 Terminal Control Areas/Mandatory Communication Areas
- 12.2 Terminal Radar Service Area Evaluation
- 12.3 Control Zones, Transition Areas, Airport Traffic Area Evaluation
- 12.4 Stage II/III Services Evaluation
- 12.5 Additional Services IFR/VFR
- 12.6 VFR Terminal Routes/Traffic Patterns (Altitude Size)
- 12.7 Part 93 - Review
- 12.8 Part 1 - Review

TASK GROUP 13
ROUTES

- 13.1 Random Routes
- 13.2 Alternate Airway Reduction and Reidentification/Airway Realignment
- 13.3 Fixed Routes (RNAV) Evaluation
- 13.4 SID/STAR Evaluation; Preferential Arrival/Departure Routes; Jet Routes/Airway Modeling
- 13.5 Part 75 Elimination
- 13.6 Part 71 - Reduction

TASK GROUP 14
WEATHER PROGRAMS

- 14.1 Weather Dissemination

TASK GROUP 15
US/CANADA/MEXICO INTERFACE
(Government Participation Only)

- 15.1 Facility Shutdown Agreement
- 15.2 Canadian Airspace Category Redefinition
- 15.3 Common Airspace and Procedures Integration

TASK GROUP 16
CHARTS

- 16.1 VFR Charting
- 16.2 Radio Facility Charts
- 16.3 Profile Descent Chart Elimination
- 16.4 Visual Approach Charts
- 16.5 RNAV Chart Elimination

TASK GROUP 21
TRAFFIC FLOW MANAGEMENT

- 21.1 En Route Metering (ERM)
- 21.2 Terminal Sequencing and Spacing
- 21.3 System Delay Information Dissemination/Severe Weather Avoidance Plan Evaluation

TASK GROUP 22
SEPARATION STANDARDS

- 22.1 IFR Separation Review
- 22.2 Special VFR/Special IFR Separation Review
- 22.3 Wake Turbulence Criteria
- 22.4 Simultaneous ILS Approach Criteria Evaluation
- 22.5 Traffic Segregation by Category
- 22.6 Parachute and Glider Operations

TASK GROUP 23
FAR SIMPLIFICATION AND REDUCTION

- 23.1 Part 189 - Elimination
- 23.2 Part 77 - Rewrite
- 23.3 Part 91 - Reorganization
- 23.4 Part 91 - Subpart B Evaluation
- 23.5 Waivers/Exemption Process Review

TASK GROUP 24
HELICOPTER OPERATIONS

- 24.1 Helicopter Separation
- 24.2 Helicopter Routes
- 24.3 Helicopter Charts
- 24.4 Helicopter Instrument Approach Procedures

TASK GROUP 25
ARTCC BOUNDARY EVALUATION
(Government Participation Only)

- 25.1 ARTCC Boundary Review
- 25.2 National Beacon Code Allocation Plan (NBCAP)

TASK GROUP 31
NATIONAL FLIGHT DATA SYSTEM

- 31.1 NOTAM Evaluation
- 31.2 Flight Plan Format
- 31.3 Flight Data Dissemination
- 31.4 Airman's Information Manual
- 31.5 Airport Information Service

TASK GROUP 32
OCEANIC

- 32.1 International Delegated Airspace
- 32.2 Consolidation of US Oceanic ATC Control Centers
- 32.3 Continental Airspace Expansion

TASK GROUP 33
HANDBOOK REORGANIZATION (FLIGHT SERVICES)
(Government Participation Only)

- 33.1 FAAH 7110.10 Flight Services
- 33.2 FAAH 7930.2 NOTAM System
- 33.3 FAAH 7110.60 Data Communications

TASK GROUP 34
HANDBOOK REORGANIZATION (PROCEDURES)
(Government Participation Only)

- 34.1 FAAH 7210.3 Facility Operations and Administration
- 34.2 FAAH 7110.65 Air Traffic Control
- 34.3 FAAH 7610.4 Special Military Operations
- 34.4 FAAH 7110.83 Oceanic Air Traffic Control
- 34.5 FAAH 7210.7 Flow Control Procedures

TASK GROUP 35
HANDBOOK REORGANIZATION (AIRSPACE)
(Government Participation Only)

- 35.1 FAAH 7130.3 Holding Pattern Criteria
- 35.2 FAAH 7400.2 Airspace Matters

TABLE B-2. NAR SCOPE
(As Published in the Federal Register in February 1983)

TASK GROUP 1 1
AIRSPACE FOR SPECIAL USE

1 1 1 Military Training Routes
1 1 2 Temporary Special Use Airspace/Real Time Joint Use Airspace
1 1 3 Special Use Airspace Requirement Review/Separation from Special Use Airspace
1 1 4 National Security Areas/Flight Test Areas
1 1 5 Part 73 (FARs) Review

TASK GROUP 1 2
TERMINAL AIRSPACE

1 2 1 Terminal Control Areas
1 2 2 Mandatory Communication Areas/Terminal Radar Service Areas
1 2 3 Control Zones, Transition Areas, Airport Traffic Area Evaluation
1 2 4 Stage II/III Services Evaluation
1 2 5 Additional Services IFR/VFR
1 2 6 VFR Terminal Routes/Traffic Patterns (Attitude Size)
1 2 7 Part 93 – Review

TASK GROUP 1 3
ROUTES

1 3 1 Random Routes
1 3 2 Alternate Airway Reduction and Reidentification/Airway Realignment/Fixed Routes (RNAV) Evaluation
1 3 3 SID/STAR Evaluation; Preferential Arrival/Departure Routes; Jet Routes/Airway Modeling
1 3 4 Part 75 Elimination

TASK GROUP 1 4
WEATHER PROGRAMS

1 4 1 Weather Dissemination

TASK GROUP 1 5
US/CANADA/MEXICO INTERFACE
(Government Participation Only)

1 5 1 Facility Shutdown Agreement
1 5 2 Canadian Airspace Category Redefinition
1 5 3 Common Airspace and Procedures Integration

TASK GROUP 1 6
CHARTS

1 6 1 VFR Charting
1 6 2 Radio Facility Charts
1 6 3 Instrument Approach Procedure Charts/Charted Visual Flight Procedures

TASK GROUP 1 7
US AIRSPACE RECLASSIFICATION

1 7 1 Airspace Classification
1 7 2 Airspace Application
1 7 3 Pilot Requirements

TASK GROUP 2 1
TRAFFIC FLOW MANAGEMENT

2 1 1 Severe Weather Avoidance Plan Evaluation
2 1 2 Flow Management

TASK GROUP 2 2
SEPARATION STANDARDS

2 2 1 Separation Review
2 2 2 Traffic Segregation by Category
2 2 3 Special VFR Separation Review
2 2 4 Parachute, Glider, and Ultralights Operations

TASK GROUP 2 3
FAR SIMPLIFICATION AND REDUCTION

2 3 1 Part 91 – Subpart B Evaluation
2 3 2 Part 99 – Rewrite
2 3 3 Part 1 – Review

TASK GROUP 2 4
HELICOPTER OPERATIONS

2 4 1 Helicopter Separation
2 4 2 Helicopter Routes
2 4 3 Helicopter Charts
2 4 4 Helicopter Instrument Approach Procedures

TASK GROUP 2 5
ARTCC INFRASTRUCTURE
(Government Participation Only)

2 5 1 National Beacon Code Allocation Plan (NBCAP)
2 5 2 Consolidation of US Oceanic ATC Control Centers
2 5 3 Airspace Jurisdiction and Responsibilities

TASK GROUP 3 1
NATIONAL FLIGHT DATA SYSTEM

3 1 1 NOTAM Evaluation/Flight Data Dissemination
3 1 2 Flight Plan Format
3 1 3 Airmen's Information Manual

TASK GROUP 3 2
OCEANIC

3 2 1 International Delegated Airspace
3 2 2 Continental Airspace Expansion

TASK GROUP 3 3
HANDBOOK REORGANIZATION
(Government Participation Only)

3 3 1 FAAH 7110.10 – Flight Services/FAAH 7110.80 – Data Communications
3 3 2 FAAH 7130.3 – Holding Pattern Criteria
3 3 3 FAAH 7400.2 – Airspace Matters

TASK GROUP 3 4
HANDBOOK REORGANIZATION
(Procedures)

3 4 1 FAAH 7210.3 – Facility Operations and Administration
3 4 2 FAAH 7110.65 – Air Traffic Control
3 4 3 FAAH 7610.4 – Special Military Operations
3 4 4 FAAH 7210.7 – Flow Control Procedures
3 4 5 FAAH 7110.83 – Oceanic Air Traffic Control

TABLE B-3, NAR SCHEDULE ADJUSTMENTS

	CANCELLED	ADDED	COMBINED WITH	RESCHEDULED TO EARLIER TIME SLOT	RESCHEDULED TO LATER TIME SLOT	SEPARATED INTO DISCRETE STUDY TOPIC	RENUMBERED	RENAMED	REMARKS
	NAR SCHEDULE ADJUSTMENTS ANNOUNCED AT EXCOM X								
3-1.8		Notes 2 & 7							Documenting Traffic Count
	NAR SCHEDULE ADJUSTMENTS ANNOUNCED AT EXCOM IX								
3-1.5		Notes 2 & 3							Airman's Information Manual – Content
3-1.6		Notes 2, 3, & 7							Airport Operations/ Runway Surface Conditions
3-1.7		Notes 2, 3, & 7							Airman's Information Manual – Content
	NAR SCHEDULE ADJUSTMENTS ANNOUNCED AT EXCOM VII								
2-3.3	Note 1								
2-4.4					Note 4				
3-3.3				Note 4					
3-4.5				X					
	NAR SCHEDULE ADJUSTMENTS ANNOUNCED AT EXCOM VI								
1-2.6	Note 1								
1-2.7	Note 1								
2-5.3	Note 1								
3-2.1			3-2.2 Note 4						
3-2.2			3-2.1 Note 4				3-2.1 Note 5		
3-2.3							3-2.2 Note 6		
3-3.1			3-3.3 Note 4						
3-3.2	Note 1							Note 6	Replaced with 3-5.1 (FAAH 7130.3 Holding Pattern Criteria)
3-3.3			3-3.1 Note 4				3-3.1 Note 5	Note 6	Replaced with 3-5.2 (FAAH 7400.2 Airspace Matters)
3-4.4					3-4.5 Note 4				
3-4.5				3-4.4 Note 4					
3-5.1				X			3-3.2 Note 4		
3-5.2				X			3-3.3 Note 4		
	NAR SCHEDULE ADJUSTMENTS ANNOUNCED AT EXCOM V								
1-6.4		Notes 2 & 3							SID and STAR Charts and the *Airport/Facility Directory*
2-5.2	Note 1								
	NAR SCHEDULED ADJUSTMENTS ANNOUNCED AT EXCOM IV								
1-2.5B		Notes 2 & 3							Uncontrolled Airports
1-3.4		Notes 2 & 3							Route System Concept
2-3.2	Note 1	Note 6							Part 99–Rewrite
2-3.3	Note 1								Replaced by 1-2.8 (Part 1–Review)
2-3.4							2-3.1 Note 6		
2-3.5	Note 1								
2-5.1			2-5.3 Note 4				2-5.3 Note 5		

NOTES

1 Study in process or planned by group other than the NAR, or

2 Identified as worthy of separate task group session attention

3 A direct result of an earlier task group session deliberation

4 Placement of session judged to be more logical with regard to sessions preceding and succeeding it

5 Maintain sequence of task group session numbering

6 Replacement for a rescheduled or deleted task group session

7 In response to a user/FAA identified need for task group session deliberation

TABLE B-3, NAR SCHEDULE ADJUSTMENTS (Cont.)

	CANCELLED	ADDED	COMBINED WITH	RESCHEDULED TO EARLIER TIME SLOT	RESCHEDULED TO LATER TIME SLOT	SEPARATED INTO DISCRETE STUDY TOPIC	RENUMBERED	RENAMED	REMARKS
2-5.2							2-5.1 Note 5		Replaced by 3-2.2 (Consolidation of U.S. Oceanic ATC Control Centers)
2-5.3		Note 7						X	Airspace Jurisdiction and Responsibilities
3-1.1			3-1.3 Note 4						
3-1.3			3-1.1 Note 4				3-1.1 Note 5		
3-1.4							3-1.3 Note 6		
3-1.5	Note 1								
3-2.2							2-5.2 Note 4		
1-7.2		Note 7							
1-7.3		Note 7							
2-1.1	Note 1								
2-1.2	Note 1								
2-1.3						Note 2	2-1.1 & 2-1.2 Note 5		
2-2.1			2-2.2 Note 4					X	Separation Review
2-2.2			2-2.1 Note 4				2-2.1 Note 5		
2-2.3	Note 1								
2-2.4	Note 1								
2-2.5							2-2.2 Note 6		
2-2.6							2-2.4 Note 6	X	Add Ultralights
2-3.1	Note 1								
	NAR SCHEDULE ADJUSTMENTS FROM APRIL 1982 TO FEBRUARY 1983								
1-2.1						Note 2			Terminal Control Areas
1-2.2		1-2.1 Note 4							Mandatory Communication Areas/Terminal Radar Service Areas
1-2.8							2-3.3 Note 4		
1-3.2		1-3.3 Note 4							
1-3.3		1-3.2 Note 4					1-3.2 Note 5		
1-3.4							1-3.3 Note 5		
1-3.6	Note 1								
1-6.3		1-6.4 Note 4							
1-6.4		1-6.3 Note 4							
1-6.5	Note 1								
1-7.1		Note 7							

NOTES

1. Study in process or planned by group other than the NAR, or
2. Identified as worthy of separate task group session attention
3. A direct result of an earlier task group session deliberation
4. Placement of session judged to be more logical with regard to sessions preceding and succeeding it
5. Maintain sequence of task group session numbering
6. Replacement for a rescheduled or deleted task group session
7. In response to a user/FAA identified need for task group session deliberation

GOVERNMENT PRINTING OFFICE: 1985-461-816/10295

APPENDIX C

PMS STANDARD REPORTS

NATIONAL AIRSPACE REVIEW QUARTERLY STATUS UPDATE

REPORT DATE 4/ 5/1984 - COVER SHEET - OPI AAT-300

- SUMMARY OF RECOMMENDATION ASSIGNMENTS -

153 RECOMMENDATION(S) IN PROCESSING (PREVIOUSLY ASSIGNED + NEWLY ASSIGNED).

135 PREVIOUSLY ASSIGNED

18 NEWLY ASSIGNED

27 RECOMMENDATION(S) WITH PROCESSING COMPLETE (IMPLEMENTED, LIMITED/PARTIAL IMPLEMENTATION, MODIFIED IMPLEMENTATION OR NON-ADOPTED RECOMMENDATIONS).

180 TOTAL

- REQUESTED ACTION -

CATEGORY	ACTION	PAGE(S)
RECOMMENDATIONS IN PROCESSING		
- PREVIOUSLY ASSIGNED	PLEASE REVIEW, INDICATE STATUS CHANGES AND RETURN.	PAGES 1.01 THROUGH 1.16
- NEWLY ASSIGNED	PLEASE MAKE INITIAL STATUS ENTRIES AND RETURN.	PAGES 2.01 THROUGH 2.03
RECOMMENDATIONS WITH PROCESSING COMPLETE.	FOR YOUR INFORMATION - RETURN ONLY IF STATUS CHANGES HAVE OCCURRED.	PAGES 3.01 THROUGH 3.04

ENGINEERING & ECONOMICS RESEARCH, INC
QSR-DC-00

NATIONAL AIRSPACE REVIEW QUARTERLY STATUS UPDATE

REPORT DATE 4/ 5/1984 - RECOMMENDATIONS IN PROCESSING PREVIOUSLY ASSIGNED - OPI AAT-300

NAR REC NO	CLEARED FOR ACTION	GOV'T COORD (CODE SET 1)	BEGIN COMMENTS	CLOSE COMMENTS	DECISION DATE	PROJECTED IMPLEMENTATION DATE	DEC'SN (CODE SET 2)	IMPLEMENTATION DATE	REMARKS (CODE SET 3)
1-1 1 04A	10/29/82	R,D,_	EST 2/ 1/83	EST 4/ 1/83	EST 6/10/83	6/ 5/84	I	EST 6/ 5/84	P,N,_,_,_
		_,_,_	ACT 2/10/83	ACT 4/24/83	ACT 11/ 1/83			ACT __/__/__	(_____)
1-1 1 04B	10/29/82	R,D,_	EST 2/ 1/83	EST 4/ 1/83	EST 6/10/83	6/ 5/84	I	EST 6/ 5/84	P,N,_,_,_
		_,_,_	ACT 2/10/83	ACT 4/24/83	ACT __/__/__			ACT __/__/__	(_____)
!1-1 1 05A	10/29/82	R,D,_	EST 2/ 1/83	EST 4/ 1/83	EST 6/10/83	__/__/__	P	EST __/__/__	P,O,N,_,_
		_,_,_	ACT 2/10/83	ACT 4/ 8/83	ACT 7/29/83			ACT __/__/__	(_____)

CODE SET 1
TITLE "GOV'T COORD" (MANDATORY GOVERNMENT COORDINATION)

INSTRUCTIONS
LIST ONE TO SIX OF THE ALPHABETIC CODES BELOW TO INDICATE THE GOVERNMENT ENTITIES WHICH MUST BE COORDINATED TO EFFECT IMPLEMENTATION OF THIS RECOMMENDATION.

B=OFFICE OF MANAGEMENT & BUDGET
C=DEPARTMENT OF COMMERCE
D=DEPARTMENT OF DEFENSE
E=COUNCIL ON ENVIRONMENTAL QUALITY
F=FAA HEADQUARTERS
G=INTERAGENCY GROUP ON INT'L AVIATION
I=INTERAGENCY AIR CARTOGRAPHIC COMMISSION
M=FEDERAL COORDINATOR FOR METEOROLOGY
O=NATIONAL OCEAN SURVEY
R=FAA REGIONS AND FIELD
S=DEPARTMENT OF STATE
T=DEPARTMENT OF TRANSPORTATION
W=NATIONAL WEATHER SERVICE
Z=OTHER

CODE SET 2
TITLE "DEC'SN" (DISPOSITION DECISION)

INSTRUCTIONS
LIST ANY ONE ALPHABETIC CODE BELOW TO INDICATE WHAT DECISION HAS BEEN MADE ON THE RECOMMENDATION

I=IMPLEMENT
D=DELAY
P=PENDING

THIS FIELD SHOULD BE LEFT BLANK UNTIL THE DECISION HAS BEEN MADE

CODE SET 3
TITLE "REMARKS"

INSTRUCTIONS
LIST ONE TO FIVE OF THE ALPHABETIC CODES BELOW TO SHOW SPECIAL CONDITIONS IMPACTING RECOMMENDATION

B=BUDGETARY IMPACT - BUDGET ACTION REQUIRED TO IMPLEMENT RECOMMENDATION
L=LEGISLATIVE IMPACT - CHANGED MISSION AREA REQUIRES CONGRESSIONAL APPROVAL
M=MANPOWER IMPACT - ADDITIONAL NEW MANPOWER SLOTS REQUIRED
P=MAJOR POLICY DECISION INVOLVED
R=REGULATORY ACTION REQUIRED
N=NONREGULATORY ACTION REQUIRED
T=TEST, MODELING OR OPERATIONAL CONFIRMATION REQ'D
W=WAITING FOR DECISION ON ANOTHER RECOMMENDATION BEFORE FURTHER ACTION - CITE NAR REC NUMBER
O=OTHER (EXPLAIN BY MEMORANDUM)

"!" = ERROR CONDITION; SEE "ERROR CONDITION" LIST FOR DETAILS

NATIONAL AIRSPACE REVIEW QUARTERLY STATUS REPORT
TASK GROUP 1-1: AIRSPACE FOR SPECIAL USE

- VALID FOR -
THIRD QUARTER CY 1984
FOURTH QUARTER FY 1984

REPORT DATE: 7/26/1984

NAR REC NO.	OPI	GOV'T COORD (CODE SET 1)	BEGIN COMMENTS	CLOSE COMMENTS	DECISION DATE	PROJECTED IMPLEMENTATION DATE	DEC'SN (CODE SET 2)	IMPLEMENTATION DATE	REMARKS (CODE SET 3)
1-1.1.01A	AAT-300	R,D	EST: 2/ 1/83	EST: 4/ 1/83	EST: 6/10/83	11/24/83	I	EST: 11/24/83	B,N
			ACT: 3/15/83	ACT: 4/21/83	ACT: 7/26/83			ACT: 11/24/83	
1-1.1.01B	AAT-300	R,D	EST: 2/ 1/83	EST: 4/ 1/83	EST: 6/10/83	11/24/83	I	EST: 11/24/83	B,N
			ACT: 3/15/83	ACT: 4/21/83	ACT: 7/26/83			ACT: 11/24/83	
1-1.1.01C	AAT-300	R,D	EST: 2/ 1/83	EST: 4/ 1/83	EST: 6/10/83	11/23/83	I	EST: 11/23/83	N
			ACT: 3/15/83	ACT: 4/21/83	ACT: 7/26/83			ACT: 11/23/83	

C-3

CODE SET 1
TITLE: "GOV'T COORD" (MANDATORY GOVERNMENT COORDINATION)

INSTRUCTIONS:
LIST ONE TO SIX OF THE ALPHABETIC CODES BELOW TO INDICATE THE GOVERNMENT ENTITIES WHICH MUST BE COORDINATED TO EFFECT IMPLEMENTATION OF THIS RECOMMENDATION.

B=OFFICE OF MANAGEMENT & BUDGET
C=DEPARTMENT OF COMMERCE
D=DEPARTMENT OF DEFENSE
E=COUNCIL ON ENVIRONMENTAL QUALITY
F=FAA HEADQUARTERS
G=INTERAGENCY GROUP ON INT'L AVIATION
I=INTERAGENCY AIR CARTOGRAPHIC COMMISSION
M=FEDERAL COORDINATOR FOR METEOROLOGY
O=NATIONAL OCEAN SURVEY
R=FAA REGIONS AND FIELD
S=DEPARTMENT OF STATE
T=DEPARTMENT OF TRANSPORTATION
W=NATIONAL WEATHER SERVICE
Z=OTHER

CODE SET 2
TITLE: "DEC'SN" (DISPOSITION DECISION)

INSTRUCTIONS:
LIST ANY ONE ALPHABETIC CODE BELOW TO INDICATE WHAT DECISION HAS BEEN MADE ON THE RECOMMENDATION.

I=IMPLEMENT
L=LIMITED/PARTIAL IMPLEMENTATION
M=MODIFIED IMPLEMENTATION
D=DELAY
P=PENDING
N=NON-ADOPTED

THIS FIELD SHOULD BE LEFT BLANK UNTIL THE DECISION HAS BEEN MADE.

CODE SET 3
TITLE: "REMARKS"

INSTRUCTIONS:
LIST ONE TO FIVE OF THE ALPHABETIC CODES BELOW TO SHOW SPECIAL CONDITIONS IMPACTING RECOMMENDATION.

B=BUDGETARY IMPACT - BUDGET ACTION REQUIRED TO IMPLEMENT RECOMMENDATION.
L=LEGISLATIVE IMPACT - CHANGED MISSION AREA REQUIRES CONGRESSIONAL APPROVAL.
M=MANPOWER IMPACT - ADDITIONAL NEW MANPOWER SLOTS REQUIRED.
P=MAJOR POLICY DECISION INVOLVED.
R=REGULATORY ACTION REQUIRED.
N=NONREGULATORY ACTION REQUIRED.
T=TEST, MODELING OR OPERATIONAL CONFIRMATION REQ'D.
W=WAITING FOR DECISION ON ANOTHER RECOMMENDATION BEFORE FURTHER ACTION.
O=OTHER (EXPLAIN BY MEMORANDUM).

NATIONAL AIRSPACE REVIEW RECOMMENDATION CLASSIFICATION

ENHANCEMENT AREAS

"x" = INCLUDED.
"X" = PRIMARY AREA.
"m" = INCLUDED AND A MILESTONE.
"M" = PRIMARY AREA AND A MILESTONE.

	TERMINAL SYSTEM			EN RTE SYSTEM			FLIGHT SERVICE SYS				AIRSPACE SYS. STRUCTURE				REGS & STANDARDS			
	TCA	ARSA	RDR SERVCS	RNAV	AIRWAY/RTE	FLOW MNGMNT	AERO CHRTS	WEATHER	FLIGHT INFO	FSS	SUA	MTR	INTL INTRFC	INFRASTRUCT	REG SIMPLI	REG ELIM	STDS DEV	SEPARATION
1. 1-1.1.01A MANDATORY YEARLY MTR REVIEW												X						
2. 1-1.1.01B MANDATORY YEARLY MTR REVIEW												X						
3. 1-1.1.01C MANDATORY YEARLY MTR REVIEW												X						
4. 1-1.1.01D MANDATORY YEARLY MTR REVIEW												X						
5. 1-1.1.02A REVISION CONCERNING SEGMENTS OF MTRS ABOVE 10												X						
6. 1-1.1.02B REVISION CONCERNING SEGMENTS OF MTRS ABOVE 10												X						
7. 1-1.1.03 IR/VR COMMON ROUTE DESCRIPTION												X						
8. 1-1.1.04A REVISION CONCERNING IR/VR PROPOSAL/REVISION												M						
9. 1-1.1.04B REVISION CONCERNING IR/VR PROPOSAL/REVISION												M						
10. 1-1.1.05A COURSE REVERSAL WITHIN AN IR/VR MTR												X						
11. 1-1.1.05B COURSE REVERSAL WITHIN AN IR/VR MTR												X						
12. 1-1.1.06A REV CONCERNING IR/VR SCHED												X						
13. 1-1.1.06B REV CONCERNING IR/VR SCHED												X						
14. 1-1.1.07 (REVISED) BARON TACTICS												X						

NATIONAL AIRSPACE REVIEW RECOMMENDATION CLASSIFICATION

SYSTEM AREAS

TGM 1-1.1.

47 RECOMMENDATION ASSIGNMENTS.

	TERMINAL SYSTEM					EN ROUTE SYSTEM					FLIGHT SERVICE SYSTEM						A/S SYS STRUC		REGS & STNDRDS	
	OPS	PROCS	SERV	AIRSP	RULES	OPS	PROCS	SERV	AIRSP	RULES	TERM	ENRTE	FSS	WX	CHART	ED/TRA	TERM	ENRTE	OPS	PROCS
1. 1-1.1.01A. MANDATORY YEARLY MTR REVIEW																			X	
2. 1-1.1.01B. MANDATORY YEARLY MTR REVIEW																			X	
3. 1-1.1.01C. MANDATORY YEARLY MTR REVIEW																				X
4. 1-1.1.01D. MANDATORY YEARLY MTR REVIEW																				X
5. 1-1.1.02A. REVISION CONCERNING SEGMENTS OF MTRS ABOVE 10																				X
6. 1-1.1.02B. REVISION CONCERNING SEGMENTS OF MTRS ABOVE 10																				X
7. 1-1.1.03 IR/VR COMMON ROUTE DESCRIPTION															X					
8. 1-1.1.04A. REVISION CONCERNING IR/VR PROPOSAL/REVISION																				X
9. 1-1.1.04B. REVISION CONCERNING IR/VR PROPOSAL/REVISION																				X
10. 1-1.1.05A. COURSE REVERSAL WITHIN AN IR/VR MTR																				X
11. 1-1.1.05B. COURSE REVERSAL WITHIN AN IR/VR MTR																				X
12. 1-1.1.06A. REV CONCERNING IR/VR SCHED																				X
13. 1-1.1.06B. REV CONCERNING IR/VR SCHED																				X
14. 1-1.1.07 (REVISED) BARON TACTICS																				X
15. 1-1.1.08A. SPEEDS ON MTRS																				X
16. 1-1.1.08B. SPEEDS ON MTRS																			X	
17. 1-1.1.09A. CHARTING & AVOIDANCE PROCS FOR MTRS & VFR FLYWAYS															X					

NATIONAL AIRSPACE REVIEW RECOMMENDATION CLASSIFICATION

RECOMMENDATIONS/SPECIAL-INTERESTS

TGM 1-1.1.

47 RECOMMENDATION ASSIGNMENTS.

	MIL	GENAV	REG	HELO	LIGHT	UNION	STATE	INDUS	WX	NOS	FORGN
1. 1-1.1.01A. MANDATORY YEARLY MTR REVIEW	X										
2. 1-1.1.01B. MANDATORY YEARLY MTR REVIEW	X										
3. 1-1.1.01C. MANDATORY YEARLY MTR REVIEW	X										
4. 1-1.1.01D. MANDATORY YEARLY MTR REVIEW	X										
5. 1-1.1.02A. REVISION CONCERNING SEGMENTS OF MTRS ABOVE 10	X	X	X								
6. 1-1.1.02B. REVISION CONCERNING SEGMENTS OF MTRS ABOVE 10	X	X	X								
7. 1-1.1.03 IR/VR COMMON ROUTE DESCRIPTION	X										
8. 1-1.1.04A. REVISION CONCERNING IR/VR PROPOSAL/REVISION	X										
9. 1-1.1.04B. REVISION CONCERNING IR/VR PROPOSAL/REVISION	X										
10. 1-1.1.05A. COURSE REVERSAL WITHIN AN IR/VR MTR	X										
11. 1-1.1.05B. COURSE REVERSAL WITHIN AN IR/VR MTR	X										
12. 1-1.1.06A. REV CONCERNING IR/VR SCHED	X										
13. 1-1.1.06B. REV CONCERNING IR/VR SCHED	X										
14. 1-1.1.07 (REVISED) BARON TACTICS	X	X	X								
15. 1-1.1.08A. SPEEDS ON MTRS	X	X	X			X		X			
16. 1-1.1.08B. SPEEDS ON MTRS	X	X	X			X		X			
17. 1-1.1.09A. CHARTING & AVOIDANCE PROCS FOR MTRS & VFR FLYWAYS		X									
18. 1-1.1.09B. CHARTING & AVOIDANCE PROCS FOR MTRS & VFR FLYWAYS		X									
19. 1-1.1.10 (DELETED) FAA APPROVAL OF VR MTRS: REASON FOR DELETION	X										
20. 1-1.1.11 REVISIONS CONCERNING MTR ROUTE WIDTH	X										

FORGN = ATPI/MEXICO

GENAV = AOPA, EAA, NATA, NBAA

HELO = AHSI, HAI

INDUS = AIA, GAMA

LIGHT = SSA, USPA

MIL = DOD

NOS = NOS

REG = ATA, IATA, RAA

STATE = NASAO

UNION = ALPA, APA

WX = NWS

C-9

NATIONAL AIRSPACE REVIEW RECOMMENDATION CLASSIFICATION

NAR OBJECTIVES

TGM 1-1.1.

47 RECOMMENDATION ASSIGNMENTS.

	OBJECTIVE ONE						OBJECTIVE TWO						OBJECTIVE THREE					
	PRIMARY		SEC'DRY		TER'TRY		PRIMARY		SEC'DRY		TER'TRY		PRIMARY		SEC'DRY		TER'TRY	
	PROP	IMPL	PROP	IMPL	PROP	IMPL	PROP	IMPL	PROP	IMPL	PROP	IMPL	PROP	IMPL	PROP	IMPL	PROP	IMPL
1. 1-1.1.01A.				X				X										
MANDATORY YEARLY MTR REVIEW																		
2. 1-1.1.01B.				X				X										
MANDATORY YEARLY MTR REVIEW																		
3. 1-1.1.01C.				X				X										
MANDATORY YEARLY MTR REVIEW																		
4. 1-1.1.01D.				X				X										
MANDATORY YEARLY MTR REVIEW																		
5. 1-1.1.02A.								X										
REVISION CONCERNING SEGMENTS OF MTRS ABOVE 10																		
6. 1-1.1.02B.								X										
REVISION CONCERNING SEGMENTS OF MTRS ABOVE 10																		
7. 1-1.1.03				X				X										
IR/VR COMMON ROUTE DESCRIPTION																		
8. 1-1.1.04A.				X				X										
REVISION CONCERNING IR/VR PROPOSAL/REVISION																		
9. 1-1.1.04B.				X				X										
REVISION CONCERNING IR/VR PROPOSAL/REVISION																		
10. 1-1.1.05A.			X				X											
COURSE REVERSAL WITHIN AN IR/VR MTR																		
11. 1-1.1.05B.			X				X											
COURSE REVERSAL WITHIN AN IR/VR MTR																		
12. 1-1.1.06A.			X				X											
REV CONCERNING IR/VR SCHED																		
13. 1-1.1.06B.			X				X											
REV CONCERNING IR/VR SCHED																		
14. 1-1.1.07 (REVISED)								X										
BARON TACTICS																		
15. 1-1.1.08A.			X				X											
SPEEDS ON MTRS																		
16. 1-1.1.08B.			X										X					
SPEEDS ON MTRS																		

APPENDIX D

ARSA CONCEPT

TABLE D-1. TCA/TRSA/ARSA COMPARISON

	TCA	TRSA	ARSA
AIRSPACE	• Regulatory • Nonstandard Design	• Nonregulatory • Nonstandard Design	• Regulatory • Basic Standard Design – Minor Adjustments for Site Sensitivity
EQUIPMENT REQUIREMENTS	• 4096 Transponder (Mode C in Group I) • 2-Way Radio • VOR	• 2-Way Radio of landing at towered airport within the TRSA	• 2-Way Radio within the Core
PILOT REQUIREMENTS	• Group I Private Pilot or better to land at Primary Airport • Group II Student Pilot Certificates	• Student Pilots – OK	• Student Pilots – OK
PARTICIPATION	• Mandatory within TCA	• Voluntary	• Mandatory within Core Voluntary outside of Core
SERVICE	• Stage III Separation between all fixed-wing aircraft and between fixed-wing and helicopters • Sequencing	• ~~State III~~ STAGE III Same as TCA between all participating aircraft	• Within the Core – Sequencing of all arriving aircraft – Std IFR separation between IFR aircraft – Between IFR and VFR aircraft – Traffic Advisories and conflict resolution so that targets do not merge at the same altitude. – Between VFR Aircraft – Traffic Advisories • Outside of Core Same as above to all participating aircraft which establish 2-way communications and radar contact within the approach controls delegated airspace

APPENDIX E
LISTING OF LEVEL III, IV, AND V FACILITIES

LEVEL III, IV, AND V TERMINAL RADAR FACILITIES PRESENTLY HAVING A TRSA

STATE	CITY
ALABAMA	Birmingham, Huntsville, Mobile, Montgomery
ALASKA	Anchorage
ARIZONA	Phoenix, Tucson
ARKANSAS	Ft. Smith, Little Rock
CALIFORNIA	Burbank, Castle AFB (Merced), Monterey, Oakland, Ontario, Palm Springs, Sacramento, San Diego, Santa Ana
COLORADO	Colorado Springs
CONNECTICUT	Windsor Locks (Bradley)
FLORIDA	Daytona Beach, Ft. Lauderdale, Jacksonville, Orlando, Pensacola, Tallahassee, Tampa, West Palm Beach
GEORGIA	Augusta, Columbus, Macon, Savannah
HAWAII	Kahului
IDAHO	Boise
ILLINOIS	Champaign, Moline, Peoria, Rockford, Springfield
INDIANA	Evansville, Ft. Wayne, Indianapolis, South Bend
IOWA	Cedar Rapids, Des Moines
KANSAS	Wichita
KENTUCKY	Cincinnati (Covington), Lexington, Louisville
LOUISIANA	Baton Rouge, Lafayette, Lake Charles, Monroe, Shreveport
MAINE	Bangor, Portland
MARYLAND	Baltimore
MICHIGAN	Flint, Grand Rapids, Kalamazoo, Lansing, Muskegon, Saginaw
MINNESOTA	Duluth, Rochester
MISSISSIPPI	Columbus AFB, Gulfport, Jackson
MONTANA	Billings, Great Falls
NEBRASKA	Lincoln, Omaha
NEVADA	Reno
NEW JERSEY	Atlantic City
NEW MEXICO	Albuquerque
NEW YORK	Albany, Binghamton, Buffalo, Islip, Rochester, Rome, Syracuse
NORTH CAROLINA	Asheville, Charlotte, Fayetteville, Greensboro, Raleigh-Durham, Wilmington
NORTH DAKOTA	Fargo
OHIO	Akron-Canton, Columbus, Dayton, Toledo, Youngstown
OKLAHOMA	Altus, Oklahoma City, Tulsa
OREGON	Portland
PENNSYLVANIA	Allentown, Erie, Harrisburg, Wilkes-Barre
PUERTO RICO	San Juan
RHODE ISLAND	Providence

STATE	CITY
SOUTH CAROLINA.....	Charleston, Columbia, Greer, Shaw AFB (Sumter)
SOUTH DAKOTA.....	Sioux Falls
TENNESSEE.....	Bristol, Chattanooga, Knoxville, Memphis, Nashville
TEXAS.....	Amarillo, Abilene, Austin, Beaumont, Corpus Christi, Del Rio (Laughlin AFB), El Paso, Longview, Lubbock, Midland, San Antonio
UTAH.....	Salt Lake City
VERMONT.....	Burlington
VIRGINIA	Dulles, Norfolk, Richmond, Roanoke
WASHINGTON.....	Spokane, Tacoma, NAS Whidbey Island
WEST VIRGINIA	Charleston, Huntington
WISCONSIN	Green Bay, Madison, Milwaukee

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