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Advanced Technologies and Oceanic Procedures (ATOP) Results Report : Oceanic Controller Job/Task Analysis (J/TA), Year 2000 Revisions

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This document contains recommendations and conclusions developed by Crown Consulting, Inc. These are not to be regarded as statements of official Government policy, nor as a commitment on the part of the Government to implement the recommendations or to concur with the conclusions as described herein.

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ATOP Oceanic Controller J/TA Results Report
Year 2000 Revisions

Table of Contents:

1 Executive Summary 1
2 Acronyms 2
3 Introduction 4
3.1 Background 4
3.1.1 1993-1994 Oceanic Controller J/TA Studies 4
3.1.2 Year 2000 Revisions 5
3.2 Purpose 6
3.3 Scope 7
4 Methodology 7
4.1 Composition of the Facility J/TA Study Teams 7
4.2 Facility Visits, Data Review, and Revision Procedures 8
5 J/TA Results 9
5.1 Oceanic ATC Events 9
5.2 Composition graphs 11
5.3 Oceanic Controller Activities / Subactivities / Tasks 11
5.3.1 J/TA Task Numbering and Descriptive Schema 11
5.3.2 Task List Data Elements 12
5.3.3 Updated ZAN, ZNY, and ZOA Task Lists 13
5.3.4 Summary of Task Updates / Revisions 14
5.3.5 Access Rates for Various Interaction Media and Interactive Associates 15
5.3.6 Most Frequent, Critical, and Difficult Controller Tasks at ZAN, ZNY, and ZOA 18
6 Potential uses of Updated J/TA data within ATOPS 33
APPENDIX A. 1
APPENDIX B. 1
APPENDIX C. 1

1 EXECUTIVE SUMMARY

This report describes and documents an effort undertaken to revise and update certain Oceanic Controller Job / Task Analysis data that were originally developed in the 1993-1994 time frame. The purpose in updating these controller task descriptions and supporting data was to develop a set of baseline descriptions that would accurately reflect Year 2000 controller operations and conditions at each of the FAA's three Oceanic ATC facilities -- Anchorage (ZAN), New York (ZNY), and Oakland (ZOA). This baseline information, in turn will be used in a variety of ways in support of the acquisition and implementation processes associated with the FAA's new Advanced Technologies and Oceanic Procedures (ATOP) program.

The report briefly reprises the earlier Oceanic Controller J/TA effort, and identifies those limited portions of the earlier data products (the facility-specific controller Task List databases, in particular) that are being reviewed and upgraded under the current effort. The methodology employed involved the synergistic combination of the efforts of two Human Factors and Ergonomics (HFE) experts, provided by Crown Consulting, Inc. (AUA-600's HFE support contractor), and pairs of Oceanic ATC Subject Matter Experts (SMEs) identified and provided by each of the three targeted Oceanic ATC facilities. The operational SMEs were designated by each facility to represent both the bargaining unit and management components of that facility's ATOP Site Product Team (SPT). Of particular note is that the identification, descriptions, assessments, and ratings of the controller tasks documented in this report were based exclusively on the inputs provided by the facility-designated SMEs. The HFE experts served only to collect, organize, assemble, and present these operationally accurate data.

Three sets of approximately 200-300 controller tasks were identified through analyses conducted at each of the facilities. These data sets contain accurate and fairly comprehensive descriptions of the sets of tasks carried out by Oceanic Controllers at each such facility. In addition to identifying and cataloguing these task sets, the J/TA team developed descriptive information about each of these tasks. These descriptors included information about what systems or media were used by the controllers in carrying out the task, and what other individuals or organizations the controller interacted with in performing the task. In addition, certain task parameter information items were also developed. These task parameters documented how frequently the task is performed, the level of criticality or importance associated with carrying out the task, and the level of controller effort or difficulty associated with completing the task.

These detailed task data are presented in a series of tables contained in appendices to the report, along with certain descriptive excerpts that help to summarize this information. These results are presented, implications discussed, and recommendations offered as to how these results could most effectively be employed by various members and groups within the ATOP system acquisition program. Of particular note is the recommendation that the baseline controller task information contained in this report also be made available to the candidate vendors hoping to provide the ATOP system to the FAA.

2 ACRONYMS

A/C	Aircraft
ACARS	Airborne Collision Avoidance Radar System
ACC	Area Control Center
ADCF	Air Defense Control Facility
AF	Airways Facilities
ALTRV	Altitude Reservation
AM	Area Manager
AMIS	Aircraft Movement Information Services
ARC	ARINC
ARINC	Aeronautical Radio Incorporated
ARP	FAA Office of Airports
ARP	ARINC Printer
ARP	Airport Reference Point
ATRCC	Air Route Traffic Control Center
AS	Area Supervisor
AT	Air Traffic
ATC	Air Traffic Control
ATS	Air Traffic Service
AUA	FAA Office of Air Traffic Development
CPDLC	Controller-Pilot Data Link Communication
CTA	Calculated Time of Arrival
CWSU	Center Weather Service Unit
DME	Distance Measuring Equipment
DOM	Other Domestic Sector
ETA	Estimated Time of Arrival
FAA	Federal Aviation Administration
FDA	Flight Data Communication Specialist
FDI	Flight Data Input
FDIO	Flight Data Input/output
FIC	Flight Service
FIR	Flight Information Region
FLT	Flight Time
FS	Flight Strips
FS	Flight Service
GCCS	Global Command & Control System
HF	High Frequency
HF	Human Factors
ICAO	International Civil Aviation Organization
ID	Identification
IFR	Instrument Flight Rules
IP	Interphone/Phone
ISD	Instructional System Development

J/TA	Job/Task Analysis
MACH	Mach Number (Speed Ratio to Speed of Sound)
MARSA	Military Assumes Responsibility for Separation of Aircraft
MC	Mission Coordinator
MI	Military Operation Specialist
MIS	Meteorological Impact Statement
MT	Meteorologist
NADIN	National Airspace Data Interchange Network
NAVID	Navigation Aid
NOPAC	Northern Pacific Area Analysis
NOPAR	Do Not Pass To Radar
NORAD	North American Aerospace Defense Command
OCS	Oceanic Computer System
ODAPS	Oceanic Display and Planning System
ODF	ODAPS Facilitator
ODL	Oceanic Data Link
OPS	Operations
PIREP	Pilot report
PLT	Pilot
PVD	Plan View Display
SCT	Other Oceanic Sector
SE	System Engineer
SIA	Status Information Area
SIGMET	Significant Meteorological Information
SOP	Standard Operating Procedures
TM	Traffic Management
TP	Telecommunication Processor
UHF	Ultra High Frequency
USAF	United States Air Force
VFR	Visual Flight Rules
VHF	Very High Frequency
WAFDOF	Wrong Altitude for Direction of Flight
ZAN	Anchorage ARTCC
ZNY	New York ARTCC
ZOA	Oakland ARTCC

3 INTRODUCTION

This document is intended to present and discuss the results of an effort undertaken to update a set of Oceanic Controller Job / Task Analysis (J/TA) data originally developed in the 1993-1994 time frame. These Year 2000 J/TA data reflect current Oceanic ATC operations as conducted at the FAA's three Oceanic ATC facilities -- at the Anchorage (ZAN), New York (ZNY), and Oakland (ZOA), Air Route Traffic Control Centers (ARTCCs). These revised data provide a baseline description of current Oceanic Controller activities and tasks for use in conjunction with the Advanced Technologies and Oceanic Procedures (ATOP) program.

3.1 BACKGROUND

The ATOP program is the means by which the FAA plans to acquire modernized oceanic automation to support the established mission need for oceanic Air Traffic Control (ATC) operations at the ZOA, ZAN, and ZNY Air Route Traffic Control Centers (ARTCCs).

3.1.1 1993-1994 Oceanic Controller J/TA Studies

About seven years ago the FAA's Automation Requirements Division (ARD-20) requested that a comprehensive analysis be performed of the activities and tasks that Oceanic air traffic controllers carry out in the performance of their ATC jobs. The results of that effort were documented in a four-volume set of reports -- one volume for each of the three Oceanic ATC facilities, and one volume that summarized the overall results of the study and drew comparisons between the three facilities. The type of analysis performed captured and presented the J/TA information via the use of several different types of constructs. The first of these consisted of the set of ATC **events** – i.e., the (mostly) external stimuli[1] that cause the controller to react or respond. The other types of constructs consisted of the hierarchical set of **activities**, **sub-activities**, and **tasks** that the controllers would undertake in response to those event stimuli.

The set of events -- which were essentially the same for all three facilities -- were maintained as a simple list. The response items -- which differed somewhat across the facilities -- were maintained as a tabular matrix or database of task descriptions and associated task parameters, as well as in the form of "composition graphs". These composition graphs were flowchart-like depictions of the sequences and conditional branching flows that reflected how the various tasks related to each other.

[1] Most ATC events are stimuli that occur outside of the controller's immediate environment -- e.g., a pilot reporting his/her aircraft's position, or requesting an altitude change. However, some events happen periodically as a function of the passage of time -- e.g., the relieving of one outgoing controller by an incoming, replacement controller. Others happen almost continuously -- e.g., a controller's scanning, evaluating, arranging, and maintaining his/her bays of flight strips. And yet others are discrete events initiated by the controller him/herself -- e.g., acting on a decision to issue a clearance to an A/C in order to prevent a future problem, or to facilitate part of his/her strategic plan for managing that sector's traffic flow.

Between the event list and the corresponding database of task-based information, the original set of J/TA reports provided a very comprehensive picture of:

- what controllers did
- when they did it
- what caused them to do it
- what input information they received and where it came from
- what they did with that information
- what output information they created and where they sent it
- what systems (equipment, reference documents, displays, etc.) they used
- what other personnel and/or organizations they interfaced with

In addition to capturing and conveying this very detailed and descriptive information, the J/TA report also analyzed the ways in which Oceanic ATC operations differed across the three FAA facilities, and provided insights into what kinds of factors contributed to those differences. Specifically, five factors were identified as being most influential in determining how a given facility conducts its Oceanic ATC operations. These included:

- The nature, size and structure of the Flight Information Region (FIR) airspace assigned to the facility -- including interfaces with adjacent FIRs
- The volume, flow, and complexity of the air traffic that traverses the airspace
- The automation system – including hardware, software, workstation layout and equipment, etc. -- that is available for use in controlling the traffic
- Personnel factors -- including the number of personnel, mix of experience levels, familiarity with all relevant (primarily new) equipment systems, makeup of crews, allocation of personnel to area subdivisions, etc.
- Procedural issues -- including operating rules, policies, available separation standards, letters of agreement, etc.

It was determined that the weightings and values of various of these factors were different in each of the facilities, and it seemed that those differences directly contributed to differences in how ATC operations were carried out.

3.1.2 Year 2000 Revisions

During the six or seven year period following the completion of the original Oceanic controller J/TA studies, numerous changes occurred at each of the three Oceanic ATC facilities. Some of the more significant of these changes included the installation of new controller workstations, new flight data processing systems, restructuring of FIR airspaces, new controller-pilot communications capabilities, new separation standards, new procedures, and increased flexibility in adapting and dynamically partitioning or combining sectors in response to changes in air traffic conditions. Thus, it was deemed necessary to revisit some of the earlier J/TA data, and to update or revise the relevant portions of that information. This will ensure that the data will accurately reflect baseline Oceanic ATC operations in each of the facilities at the start of the ATOP program era.

There was no intention to entirely replicate the original J/TA study, nor to completely revise or update all of the different types of data items contained in those original results reports. Rather, the intention was to focus energies on revising the task parameter information contained in the tabular database known as the Task List. The Task List was a matrix whose rows consisted of the individual controller tasks that had been identified for a given facility, and whose columns contained identifying and descriptive parameter information about those tasks. Briefly, the latter information included an identifying **task number**, **task description statement**, the various **interactive media** that the controller would use in carrying out the task, and the set of **interactive associates** (other individuals or organizations) with whom the controller might collaborate in carrying out the designated task.

3.2 PURPOSE

As with any J/TA study, there are many plausible reasons for undertaking such an Oceanic Controller J/TA effort, and many potential applications to which the resulting data could be put within the context of the ATOP program. Chief among these are the needs to:

- Enumerate and define all current baseline functionalities and controller interaction capabilities. This should be done in order to provide a traceability mechanism – one that could ensure that all such baseline capabilities are also supported, or otherwise accounted for (e.g., some could be replaced or modified by automation features) within the new system environment. The type of product that will be developed for this purpose is a set of operational functionality checklists – one per facility – that will provide evaluators a means to assess and document the functional completeness of the proposed system designs.
- Assist in the development and definition of realistic and representative operational scenarios – scenarios that will be used in Human-in-the-Loop (HITL) simulation testing exercises. This would entail identifying and prioritizing the controller activities and task strings that should be incorporated into such scenarios. By ensuring that all of the most frequently performed, critically important, and/or difficult-to-perform tasks from the baseline system are incorporated into these testing scenarios, one can be confident that the new system will receive the appropriate kind of operational scrutiny and testing evaluation.
- Comprehensively and effectively communicate to the vendor candidates the range of ATC tasks and activities the new system will need to support – or at least to identify the kinds of support capabilities the operational system evaluators will be looking for and expecting to see. Again, the new system will either need to demonstrate support for each and every one of these capabilities, or will have to demonstrate that the new system provides an effective and operationally suitable alternative method for accomplishing those same functions. There is much to be said for effectively communicating this kind of user expectation and evaluation criterion information to the vendor candidates as early in the overall evaluation and selection process as possible. It helps to reduce the risks associated with controller acceptance of the new system. Additionally, it helps vendors to better understand and anticipate any gaps that might exist between their current system design and a modified version of that

system that would be deemed by the FAA to be operationally suitable and acceptable within the ATOP environment.

The purpose of this document is to present the results of the Oceanic Controller J/TA data revision effort, and to further discuss how those specific results might be most effectively incorporated and factored into the upcoming stages of the ATOP program.

3.3 SCOPE

As stated earlier, the intent of this effort is not to replicate or perform a new or expanded J/TA, but rather to merely update portions of the J/TA data set from the earlier effort so as to reflect current Oceanic ATC baseline operations. Further, the focus of this effort is to develop revisions for one particular type of product – the task parameter data contained in the Task List database. Although other types of J/TA products (e.g., the Oceanic ATC Event List, and/or the task flow Composition Graphs) may be referenced or used as interim work products during this task review and updating process, no specific attempt will be made to make edits or corrections to those products, or to republish updated versions of these items.

4 METHODOLOGY

As was the case with the earlier Oceanic Controller J/TA effort, the source of the input data for the current analysis was descriptive information provided by facility-designated, experienced users (line controllers and managers) of the current Oceanic ATC systems. The Human Factors and Ergonomics specialists (HFEs) who collected, organized, structured, and presented these revised J/TA data items were not involved in independently observing, recording, interpreting, assessing, and analyzing the on-the-job activities and tasks of Oceanic Controllers. Instead, what these HFE analysts did was provide a framework and structure within which to capture the inputs, assessments, ratings, and judgements of Oceanic ATC operational experts. That is, the HFEs did not independently develop or create these J/TA data, but rather facilitated the capture of relevant job/task descriptive information provided by qualified representatives of the people who perform these functions on a daily basis.

4.1 COMPOSITION OF THE FACILITY J/TA STUDY TEAMS

The Oceanic controllers designated as Subject Matter Experts (SMEs) for participation in this J/TA review and revision exercise, were drawn from the membership of the ATOP AT Site Product Teams (SPTs) which have been established at each of the target Oceanic ATC facilities. Each of these SPTs was formed so as to constitute a set of capable and experienced representatives of both the Oceanic ATC management and bargaining unit (NATCA) personnel working within that given facility. Thus, the SMEs selected for participation in this effort are completely knowledgeable about facility Oceanic ATC operations, are totally cognizant about the purposes and objectives of the ATOP program.

Thus the SMEs were highly motivated to ensure that the new ATOP system effectively meets the operational needs of that particular facility.

At each of the three Oceanic ATC facilities – ZAN, ZNY, and ZOA – the facility ATOP SPT manager selected two volunteer participants to serve as SMEs for this J/TA exercise. In all cases, at least one of the pair of SMEs was a bargaining unit representative. The ZNY SME contingent included two such representatives, while the ZAN and ZOA SME teams also included a management representative. At the ZOA facility, the management representative member of the SME team also happened to have served as an SME during the original J/TA effort, conducted some seven years ago (although, at that time, this individual served as a bargaining unit representative).

The ATOP HFE support contractor provided two HFE analysts to work with each of these pairs of facility-designated SMEs in conducting the J/TA analysis update. Thus, at each of the facilities, the J/TA analyses team consisted of four people – two facility-designated SMEs, and two HFE analysts. The same pair of HFE analysts (one of whom had also participated as the lead HFE in the previous Oceanic Controller J/TA study), carried out the J/TA analysis activities at each of the facility sites.

4.2 FACILITY VISITS, DATA REVIEW, AND REVISION PROCEDURES

The same general procedures were followed and the same basic sequence of activities took place at each of the facilities. These consisted of the following:

- Initial coordination activities (requests for facility support, agreements to participate in the study, designation of SME participants, site logistical arrangements, etc.) were carried out between appropriate personnel within the Oceanic and Offshore IPT Office (AUA-600), the Oceanic ATC section within the specified facility, that facility's associated Regional Office, and the Crown J/TA Team personnel.
- An advance packet of materials (introductory items explaining the nature and purpose of the J/TA process, providing relevant sample materials from the previous J/TA conducted at that facility, etc.) were sent to the facility's SPT lead, and to each of the designated SME participants.
- The Crown J/TA Team (i.e., HFE analysts) traveled to the facility site for three days of technical interchange sessions, working with the designated SMEs. These sessions included the following (prototypical) sequence of activities:
  - Introductions
  - Briefing on J/TA Approach / Updates **[Crown]**
    - Scope
    - Purpose
    - Products / Results
    - Tie-in with ATOPS Evaluations (Show-Me, FLOT, SLOT)
  - Overview Description of Facility Changes Since Initial ('93-'94) J/TA **[SMEs]**
    - Airspace Structure / Organization
    - Air Traffic (volume / mix / cycles)

  - HW / SW Systems
  - Personnel Changes (Area Reorganizations / Team Structures)
  - Procedures, LOAs, Adjacent FIRs
- Overview Tour of Oceanic ATC Ops Area **[SMEs]**
  - Floor Organization / Area Subdivisions
  - Brief Observation of On-going Oceanic ATC Operations (60-90 minutes; opportunity for brief plug-in monitoring session)
- Working J/TA Data Development Sessions -- Review / Update of:
  - Event List
  - Activities / Subactivities / Tasks Hierarchy
  - Standardized Verbs
  - Composition Graphs
  - Task List
    - Interactive Media
    - Interactive Associates
    - Task Parameters

This general procedure was followed at each of the three Oceanic facilities -- ZAN in 01/00, ZOA in 02/00, and ZNY in 03/00. The SME-provided J/TA input data sets were either completed during the course of the three days of working sessions on-site (in the cases of ZOA and ZNY), or were subsequently completed and delivered to the Crown J/TA analysts during a side-bar meeting at the ATOP Show Me demonstrations at the WJHTC in New Jersey (in the case of ZAN). These data set products consisted of one revised version of the J/TA Task List for each of the three facilities.

5 J/TA RESULTS

As stated earlier in this report, the J/TA approach taken in the current effort (as was also the case in the 1993-1994 studies), characterizes the gamut of Oceanic Controller actions in terms of a set of independent **Events**, each of which can trigger a series of ATC actions, and a hierarchical set of **Activities**, **Sub-activities**, and **Tasks** that Oceanic Controllers carry out in response to those events. Although the primary focus of the current effort was on updating and revising the data elements of those lower-level task descriptions, some notice must be taken of the set of triggering ATC Events, as well as the Activities and Sub-activities that provide the context or frame of reference within which those tasks must fall.

5.1 OCEANIC ATC EVENTS

One of the first J/TA data components reviewed by the facility-designated SMEs was the collection of controller stimulus items -- occurrences that trigger some corresponding set of controller response actions. In the previous (1993-1994) J/TA analyses, there was a single set of ATC Events that was identified and agreed upon as being appropriate by the

SMEs who participated in that effort. The SMEs for the current study reviewed that same set and determined it to be equally applicable and representative of today's Oceanic ATC operations. That Event List is presented below in Table 5-1.

Table 5-1. Categorized Oceanic ATC Event List -- Events Judged Applicable for All Three Oceanic ATC Facilities (ZAN, ZNY, and ZOA).

CLEARANCE	*MILITARY / OTHER SPECIAL OPERATIONS*
Amended Flight Plan	Aerial Refueling
Clearance Delivery	Aircraft Above FL 600
Clearance Request	Balloon
FLIGHT STATUS	Bomb Threat
ADIZ Penetration	Experimental Flight
Aircraft Not Responsive to ATC Direction	Fuel Dumping, Jettison
Airspace Intrusion	Hazardous Cargo
Arrival Message Receipt	Hijack
Celestial Navigation Advisory	Interceptor Flight
Departure Time Receipt	Law Enforcement
Entering/Leaving Airborne Hold	Major Civil Event
Filed Flight Plan	Medical Emergency
Flight Plan Deviation	Medical Mission
Initial Contact	Military Exercises
Overdue Aircraft	Military Training Route
Pilot Request	SAFI Flight Check
Position Report Receipt	Special Interest Flight
Radar Data Update	Suspect Aircraft
CONFLICT	*TRAFFIC MANAGEMENT*
Aircraft-Aircraft Conflict	Change Traffic Pattern
Airspace/ALTRV Reservation	Runway Closure
Airspace/Movement Area Restriction	Sequencing Required
Flight Plan Conflict	Track Advisory
General Unsafe Condition	Track Generation
Impending Special Use Airspace Conflict	Traffic Management
Special Use Airspace	*SYSTEM FAILURE/DEGRADATION*
Traffic Congestion	Communication Failure
Traffic Management Impact	Equipment Maintenance Need
TRANSFER OF CONTROL	Flight Data Processing Failure
Aircraft Approaching Sector Boundary	NAVAID Failure
Airspace Release	ODAPS Failure
Facility Closure	*POSITION MANAGEMENT*
Facility Reopening	Combine/Decombine Position
Oceanic Release	Controller Overload
Transfer of Control Receipt	Overdue Aircraft Alert
AIRCRAFT ANOMALIES	Position Relief
Aircraft Emergency – Airborne	Sector Management
No Radio	*WEATHER*
Operational Incident	PIREP
	Severe Weather
	SIGMET/MIS
	COORDINATION
	Transfer of Flight Data

Attached Appendix A provides an expanded definition for each of the events named in Table 5-1.

5.2 COMPOSITION GRAPHS

As was stated above, composition graphs are flow-chart-like depictions of how the various controller activities, sub-activities, and tasks relate to each other. Complete sets of Oceanic Controller composition graphs were developed for ZOA, ZNY, and ZAN during the 1993-1994 J/TA studies. They were published in the final reports for that study (Volumes I, II, and III, respectively).

The SMEs for the current J/TA effort used those original composition graphs as reference materials -- in order to better visualize the flow between tasks, and to better understand the context for the various activity and sub-activity sequences. However, no attempt was made to update the composition graphs to have them reflect current Oceanic ATC operations. Thus, since they weren't changed or modified, the composition graphs have not been reproduced in this report. The interested reader is referred the original set of J/TA reports if there is any further interest in those graphical products.

5.3 OCEANIC CONTROLLER ACTIVITIES / SUBACTIVITIES / TASKS

This section discusses the J/TA Activity, Sub-activity, and Task data developed in the current study. In order to keep this results report a manageable size, a decision was made to provide explanatory and summarized information only in the body of this report, include first-level supplementary materials as attached appendices to the report, and provide the more basic (and voluminous) data as separate detached appendices, published under separate cover. It was felt that this approach would convey the most relevant information to the majority of readers in an efficient manner, but at the same time would make additional information available to other readers who might be interested in a greater level of detail.

5.3.1 J/TA Task Numbering and Descriptive Schema

Within the J/TA structure, controller response actions to the various ATC Events are reflected in hierarchies of controller activities, subactivities, and tasks. For identification purposes, each member of these hierarchies has been assigned an identifying coded number -- consisting of three alphabetic characters followed by one or more sets of numbers separated by decimal points. For example, the task label "**AOC.1.3.3**" signifies:

> **AOC** = "Anchorage Oceanic Controller" (NOC = New York, and OOC = Oakland, respectively);
>
> Activity **1.0** ("Conduct transfer of flight data and transfer of control of aircraft");

Sub-activity **1.3** ("Update flight strips and flight plan database"); and

Task **1.3.3** ("Record flight data on flight progress strip as received from adjacent facility controller")

In addition to the identifying number, each task data base component contains a brief descriptive statement, indicating what is taking place during the execution of that particular activity, sub-activity, or task. This "Task Statement" is constructed in a very specific manner. Each one starts out with one of a specified set of action verbs, followed by other relevant objects, descriptive adjectives, or modifiers. This approach ensures that a certain level of compatibility exists between the current analysis and a rather extensive set of past J/TAs that were performed for a variety of other FAA programs and projects. However, it does result in descriptions that, at first glance, may seem somewhat strange or stilted to those who deal with ATC operations on a daily basis -- i.e., in comparison to the typical "controllerese" manner of describing such ATC actions. In order to assist the reader who may not be familiar with the particular meanings of the verbs used in this context, attached Appendix B contains the complete verb set, along with the clarifying definitions for same.

5.3.2 Task List Data Elements

As stated previously, the primary focus of the current effort is at the task level. The corresponding higher-level controller activity and sub-activity components were examined only to the extent that they helped to provide a framework or context within which to consider and assess each of the associated controller tasks. Correspondingly, the principal products of these J/TA analysis efforts were the updated versions of the Task List databases for ZAN, ANY, and ZOA. The Task List is essentially a large matrix or spreadsheet, wherein there is one row provided for each task that was identified, and a set of corresponding column entries that contain descriptive or parameter information about that particular task.

Basically, the rows of each of the Task Lists are structured as follows:

Task No. / Task Statement / Interaction Media / Interactive Associates / Frequency / Criticality / Difficulty

The **Task Number** and **Task Statement** components have already been described. The **Interactive Media** consist of a set of columns listing the different pieces of equipment, communication systems, or modes of interaction that a controller might use to carry out the given task -- e.g., flight strips, Voice Switching and Control System (VSCS), Situation Display, or Face-to-Face interaction. The applicable sets of Interaction Media differ somewhat for each of the three Oceanic ATC facilities. It should also be noted that within a given facility a variety of media may be specified for any one task. Whenever that task is carried out, any one (or more) of those indicated interaction media might be

employed -- depending upon controller preference and/or the particular set of operational conditions at hand.

The **Interactive Associates** for a given task are reflected in a set of columns identifying the various types of controller colleagues, supervisory personnel, pilots, or other agencies with whom a controller might interact in carrying out the specified task. Examples might include a controller's ARINC contact, an adjacent ICAO facility controller, a pilot requesting a higher altitude, or the controller's Area Supervisor. As was the case with the **Interactive Media**, more than one type of associate might be involved in carrying out a given task.

The final group of columns in the Task List table contains a set of parameters that help to specify certain characteristics of that task. These characteristics include information about how often the task is performed (**Frequency**: once a year, once a month, once a week, one-to- four times a day, or more than four times a day). The second task parameter conveys how important it is that that particular task be performed quickly and correctly (**Criticality**: low, medium, high, or extreme). The last parameter reflects how much effort it takes to complete the given task (**Difficulty**: easy, somewhat difficult, or very difficult).

Continuing along with the same categorization technique employed in the previous J/TA study, tasks that received the extreme rating on all three parameters -- i.e., very frequently performed, extremely critical to complete, and very difficult to accomplish -- were classified as "Tall Pole" tasks. Correspondingly, tasks that received the extreme rating on any two out of the three parameters were identified as being "Almost Tall Pole" tasks. The idea here is that in designing or evaluating any new candidate Oceanic ATC system, one of the first things one might want to do is to consider the efficacy of this new design in the context of these tall pole types of tasks. Such a system ought to perform optimally and efficiently with respect to the most frequently performed tasks -- maybe even aiding or eliminating some of them (via automation). Also, it ought to ensure that all highly critical tasks can be handled flawlessly and with great dispatch. And, finally, such a system should help to make previously difficult tasks easier to accomplish -- or, at the very least, not result in any increased levels of difficulty or effort being required to carry out the same or similar types of tasks.

5.3.3 Updated ZAN, ZNY, and ZOA Task Lists

The Updated Oceanic Controller Task Lists for ZAN, ZNY, and ZOA contained data for approximately 200 - 300 tasks each. These completed Task Lists are too large for inclusion in this summary report, but are presented in their entirety in supplemental Appendices S/A, S/B, and S/C, respectively. Hence, this section of the report will present and describe certain summarized and/or filtered portions of those data.

5.3.4 Summary of Task Updates / Revisions

Table 5-2 provides a synopsis of the changes that took place relative to the 1993-1994 analyses, and are reflected in the results of the SME J/TA review process recently completed at each individual Oceanic ATC facility.

Table 5-2. ZAN / ZNY / ZOA J/TA Task Revisions -- Summary Statistics

Variable	ZAN	ZNY	ZOA
Total '93-'94 Tasks	262	257	323
New Tasks Added	0	1	1
Old Tasks Deleted	8	14	40
Task Statements Revised	2	12	26
'93-'94 TP Tasks	0	20	6
TP Tasks Demoted	0	3	0
TP Tasks Promoted	0	3	5
Total '2000 TP Tasks	0	20	11
'93-'94 ATP Tasks	135	40	87
ATP Tasks Demoted	7	3	21
ATP Tasks Promoted	16	22	50
Total '2000ATP Tasks	144	59	112
Total '2000 Tasks	254	244	284

It must be remembered that the primary purpose of the current effort was to develop a baseline description of Year 200 Oceanic Controller tasks -- not to draw comparisons to the status of Oceanic Controllers in the 1993-1994 timeframe. However, it is worth noting that a variety of changes did occur over the 6-7 year period that elapsed between the original J/TA effort and the current update. Relatively few new tasks were added, but a number of older tasks were eliminated. The numbers of Tall Pole tasks stayed about the same, but across all three facilities, there were consistent increases in the numbers of Almost Tall Pole tasks. What is not so apparent from this table is the extent to which the various tasks have changed in terms of how the task is carried out -- i.e., changes in the interactive media, the interactive associates, and/or task parameters. The interested reader can explore these questions by delving into the task description details contained in Appendix S/A, and making comparisons back to the corresponding values contained in the 1993-1994 J/TA reports.

These observations may not have a great deal of significance for the new ATOP system, per se, but they do help to document the facts that changes can and do occur over a period of time, that there are definite differences in how operations are carried out at each of the three facilities, and that different types or numbers of changes tend to occur at each of the facilities. These facts should help to convey to the candidate vendors of the ATOP system that they are going to need to develop and install a system that can evolve and

change over time, and that can be adapted and tailored to satisfy the individual needs and requirements of each of the three facilities.

5.3.5 Access Rates for Various Interaction Media and Interactive Associates

As stated earlier, the interaction media are the various systems or interaction modalities that the controller uses to carry out a given task. Correspondingly, the interactive associates are the persons or organizations that the controller interacts with to carry out that same task. Table 5-3 provides some summary statistics to show how much these different media and associates are used for the various controller tasks carried out at ZAN, ZNY, and ZOA.

While there are many ways of looking at and interpreting these data, the following observations are worth noting:

At ZAN:

The most striking number here is the percentage of tasks that involve face-to-face contact (i.e., 100%). However, this is an artifact, based on the fact that only the ZAN facility currently has a default, two-person Oceanic Controller workstation configuration. Such 2-person sector workstations normally include a Radar Controller (R-Person) and a Data Controller (D-Person). Since all ZAN controller tasks can (and frequently do) involve joint activity by both of these controllers, and/or can interchangeably be handled by either one of them, by convention, all ZAN tasks were rated as involving face-to-face interactions between these two individuals.

Looking beyond the above anomaly, the next most frequently employed media at ZAN are the VSCS (phone), the OCS (combined radar/non-radar situation) display, the flight strips, the radio, and the DSR display. [Note: it must be remembered that the ZAN facility is unique in that it's Oceanic ATC sectors contain embedded portions where the aircraft pass into and out of areas of radar and radio coverage. Additionally, ZAN does not have the ODAPS based flight data processing systems used by ZNY and ZOA, but instead has its own locally developed OC System.].

In terms of with whom the controller interacts, the results seem to be logical and consistent with expectations. For most of their tasks, ZAN controllers interact with other controllers (either within their facility, within adjacent FAA facilities, or within adjacent ICAO facilities), with ARINC, or directly with pilots.

At ZNY:

The medium most often accessed in support of tasks carried out at ZNY is the VSCS -- with the majority of those phone contacts being made with ARINC. Next, there is also a significant level of face-to-face interaction. The explanation here is that ZNY (which

Table 5-3. Cumulative Frequencies and Percentages for Different Interaction Media and Interactive Associates -- Summed Across Tasks Performed at ZAN, ZNY, and ZOA.

NO.	Interaction Media	ZAN Freq. N=254	ZAN%	ZNY Freq. N=244	ZNY%	ZOA Freq. N=284	ZOA %
1	Face-to-Face	254	100%	121	50%	64	23%
2	Interphone/Phone/VSCS	151	59%	166	68%	151	53%
3	AFTN (Teletype)	35	14%	2	0.08%	23	8%
4	ODAPS-ODL	N/A	N/A	47	19%	138	49%
5	ARINC Monitor/Printer	N/A	N/A	42	17%	22	8%
6	Strips, FSP Outputs	122	48%	79	32%	187	66%
7	Chart/Map/ Mileage Ruler/Marker	22	8%	28	11%	87	31%
8	Interim Sit. Display (ISD)	N/A	N/A	N/A	N/A	103	36%
9	Status Info Area	N/A	N/A	N/A	N/A	65	23%
10	TP Work Station	N/A	N/A	51	21%	N/A	N/A
11	DSR (Host)	68	27%	3	1%	N/A	N/A
12	OCS/CPDLC/HF	127	50%	N/A	N/A	N/A	N/A
13	VHF/UHF Radio/VSCS	95	37%	N/A	N/A	N/A	N/A
14	Other Media (Fax, SAT-Voice, Log, Checklist)	15	6%	8	3%	14	5%
NO.	**Interactive Associate(s)**	**ZAN Freq. N=254**	**ZAN%**	**ZNY Freq. N=244**	**ZNY%**	**ZOA Freq. N=284**	**ZOA %**
1	ARINC or SITA	103	41%	90	37%	96	34%
2	Internal Oceanic Sector	113	44%	83	34%	66	23%
3	External FAA Center	102	40%	84	34%	65	23%
4	Other ICAO Center	101	40%	82	34%	62	22%
5	OPS. Supervisor	30	12%	18	7%	22	8%
6	OPS. Manager	3	1%	N/A	N/A	8	3%
7	Meteorologist/WC	4	2%	0	0	5	2%
8	Traffic Mgmt/DOTS/TA	10	4%	0	0	9	3%
9	Flight Service/FIC	25	10%	2	0.08%	14	5%
10	System Engineer/NOM	0	0	0	0	2	0.07%
11	Mil Ops Specialist	0	0	3	1%	0	0
12	Pilot (HF/SAT Voice)	84	33%	67	27%	8	3%
13	Flight Data Comm Specialist	26	10%	3	1%	30	11%
14	ODAPS Facilitator	N/A	N/A	71	29%	N/A	N/A
15	Radar Controller	253	100%	N/A	N/A	N/A	N/A
16	Other Associates	1	0.03%	4	2%	11	4%
17	Other Domestic Sector	107	42%	86	35%	58	21%
18	Data Controller	254	100%	N/A	N/A	N/A	N/A

Notes:
1. All numbers rounded to nearest decimal point.
2. "N/A" means it does not apply for that AT Center.
3. "N" is a symbol for the total numbers of cases in a group.

employs the same kind of ODAPS system as ZOA) is unique in that every ZNY Oceanic sector controller also has access to the services of an ODAPS Facilitator. This Facilitator (O-Person) monitors an ODAPS situation display monitor and communicates his/her observations and interpretations to the sector controller. These frequent interchanges between the controller and O-Person involve face-to-face (or, in some cases, telephonic) communications.

Next most frequent were tasks with interactions involving the flight strips, TP and ODAPS displays, and ARINC printer. It should be noted that, at ZNY (in contrast to ZOA), the ODL system was not yet in full operation, and that the (primarily telephonic) link between the sector controller and ARINC was much more heavily utilized. This was because all controller-pilot and most of the ARINC-controller information interchange had to take place over the telephone.

As was the case with the ZAN controllers, ZNY controllers spend much of their time interacting with other adjacent controllers, with ARINC, and with pilots. The exception here is that ZNY controllers also spend a very significant amount of time interfacing the ODAPS Facilitator (O-Person) assigned to support that sector.

At ZOA:

Most of the ZOA-identified controller tasks involve interacting with the flight strips, the ODL/ODAPS display and workstation, the VSCS, and the ISD (situation display). Also called out a significant number of times were the overhead maps and charts, and the status information area.

In terms of interactive associates, most of the tasks identified as being performed by the ZOA controllers involved interactions with ARINC, other adjacent controllers, and with pilots. It is also worth noting that, because ZOA has more completely installed and implemented Oceanic Data Link (ODL) capabilities in all of their Oceanic ATC areas and sectors, and they currently have a greater percentage of FANS-equipped and FANS-operational aircraft operating in their airspace, they spend a considerable amount of their time communicating directly with flight deck personnel. However, relatively few of these interchanges involve the SAT Voice or phone patch systems -- they are instead accomplished via the CPDLC system.

Finally, there was one additional interface device that was identified during an offline discussion that took place at the ZOA facility. It concerns another device that controllers use and rely upon heavily, not only at ZOA, but within all three Oceanic ATC sites. Curiously enough, it is a device that is very helpful, but was not identified as a controller interaction medium in either the 1993-1994 version of the J/TA, or in the current updating effort. That device is the ubiquitous large scale digital clock that continuously displays the coordinated universal time to controllers. The comment made at ZOA was that they had a situation some time ago when this clock capability wasn't operating. The universal comments from controllers was that they were continually "lost" without this relatively simple device -- that they really do use it "all the time", and that they were

quite frustrated by its absence. It also should be noted that many of the new display systems that have been fielded in recent years do include some kind of small clock window located somewhere in their display monitor. However, controllers have reported that these characters are much too small, and that whenever the classic digital clock display is available (with its approximately 1" high characters), those other little "clock windows" are completely ignored and overlooked. Having this type of effective time display capability is something that probably shouldn't be overlooked in selecting and adapting the new ATOP system.

5.3.6 Most Frequent, Critical, and Difficult Controller Tasks at ZAN, ZNY, and ZOA

The data collected from the facility SMEs during the course of this J/TA update study have enabled us to identify which Oceanic Controller tasks are performed most often, which tasks are most critically important to complete quickly and correctly whenever they are performed, and which tasks require the greatest amount of the controller's effort and/or concentration to perform. These findings are of particular importance to the ATOP program, because of the potential benefits they can offer to the overall success and effectiveness of Oceanic ATC operations.

5.3.6.1 Most Frequently Performed Tasks

It would be highly desirable to ensure that the new ATOP system would handle the most frequently performed tasks in a very simple and efficient manner. If the most frequently performed tasks can be optimized -- perhaps even eliminated or otherwise enhanced via automation -- then the overall payoff in terms of enhanced controller effectiveness ought also to be enhanced. Because of this frequency-based multiplier effect, making improvements to frequently performed tasks offers an opportunity to maximize returns or "get the most bang for the buck" invested in the ATOP system.

The list of the most frequently performed controller tasks at the ZAN facility is presented in Table C-1 of attached Appendix C. For each such task, the table contains the task's identifying number and the task statement that explains what is being accomplished when the task is performed. Each of the tasks in this table were rated by the ZAN J/TA SMEs as being performed at least five times a day during normal operations. However, the granularity of the current data do not afford any further differentiations or rankings -- i.e., they do not identify which of the tasks get executed 6 times a day vs. which ones might be performed 100 times daily.

The corresponding lists of most frequently performed controller tasks at the ZNY and ZOA facilities are also presented within attached Appendix C -- in Tables C-2 and C-3, respectively.

5.3.6.2 Most Critical Tasks

The J/TA update data have also identified the controller tasks that the various J/TA SMEs have rated as most critically important for controllers to be able to perform quickly and correctly. In some cases, these tasks, although critically important, occur only infrequently. Examples might relate to emergency type situations that don't come up very often, but must be handled promptly and properly whenever they do. Other tasks, however, may occur very frequently -- but it is also critically important that they be properly executed each and every time that they do occur. Examples here include any of the tasks that directly impact maintaining required separation between aircraft -- such as the tasks that support maintaining situation awareness and issuing clearances. These tasks constitute the crux of the air traffic controllers' job, and they (including especially the SMEs that participated in this effort) view these tasks as some of the most critical parts of a very critical job.

Clearly, efforts must be taken to ensure the new ATOP system properly provides for the effective and successful completion of all current controller tasks judged critically important. In the new system, not every one of these critically important tasks must be done in the same manner (or even continue to be directly carried out by the controller him/herself). However, it must be ensured that the functionality represented by each and every one of these critical tasks in today's system is somehow carried forward and accounted for within the context of the new system.

Within the context of the J/TA approach, the facility-designated SMEs were given an opportunity to assign each task one of four criticality ratings: low, medium, high, or extreme. For the ZAN facility data, Table D-1 in attached Appendix D lists all of the ZAN controller tasks that were assigned "high" or "extreme" ratings. As was the case with the "very frequent" tasks presented in Appendix C, the critical task tables present the identifying task number, task statement, and rating ("H" or "E") assigned to each of the tasks in this set. Correspondingly, Tables D-2 and D-3 in this same Appendix present the listings of the controller tasks judged to be critically important within the ZNY and ZOA Oceanic ATC environments, respectively.

5.3.6.3 Most Difficult Tasks

The final J/TA task parameter category is task difficulty. The J/TA SMEs were also given an opportunity to assess each controller task based upon how difficult it is to perform that task. Difficulty was defined as the level of effort, intensity, and/or concentration needed to carry out the task. Very little that controllers do involve much expenditure of physical effort, so what was really being considered or factored in here were assessments of the information processing or cognitive aspects of the task. Typically, this construct encompasses actions that require detailed estimation, use of judgement, integration of information, complex calculations, etc. Another way of explaining the concept of task difficulty to the SMEs was to have them think about how much they (as controllers) would have to concentrate on performing just this particular

task in order to successfully complete it. Alternatively, they were asked to consider how disruptive it would be if they were to be interrupted before completing the task -- i.e., would they then have to start the whole task over, or could they just "pick up where they left off". More difficult tasks tend to be less conducive to piecemeal or part-task completion cycles.

In evaluating candidate ATOP system designs, it is useful to consider the set of currently performed tasks that are judged the most difficult to complete. In order to be effective, the new system should reduce the level of effort required to perform such tasks -- possibly even eliminating such hard tasks through the use of automated procedures or reshaping the task by providing information aids or other enhancement tools or techniques. One of the key factors that will determine the success of such a new system is the level or degree of user (i.e., controller) acceptance. And one sure way of increasing controller acceptance of a system is for it to be perceived as making the job at hand easier to accomplish, less error prone, more supportive of task objectives, etc. Alternatively, under no circumstances should it be perceived as making things that were relatively easy to accomplish, suddenly cumbersome, awkward, or difficult.

The J/TA SMEs rated each task as being easy ("E"), somewhat difficult ("S"), or very difficult ("V"). Table E-1 in attached Appendix E lists the ZAN controller tasks rated as either "S" or "V". Correspondingly, Tables E-2 and E-3 provide similar types of information for today's ZNY and ZOA Oceanic ATC environments. In all cases, these tables list the task identifying number, task statement, and assigned task difficulty rating.

5.3.6.4 Tall Pole Tasks

The three preceding sections have identified the tasks at each of the three Oceanic ATC facilities that were judged as being **either** most frequently performed, most critical, **or** most difficult to perform. And, justification was provided as to why these particular sets of tasks ought to be of special interest to those people and organizations involved in either proposing a candidate ATC system for the ATOP program, or evaluating the efficacy and suitability of the systems being so proposed.

The next most logical question to be addressed in analyzing the J/TA data gathered for this study would seem to be whether there are any controller tasks being carried out within today's ZAN, ZNY, and ZOA Oceanic ATC environments that received the most extreme rating from the SMEs on **all three** of these task parameter scales. The answer is that yes there are a number of them, as reflected by the data gathered at the ZNY and ZOA facilities. Also worthy of note is the fact that no such tasks were identified within the rating data provided by the ZAN SMEs.

In this regard, it is also worth pointing out that all of these task rating data consisted of subjective assessments provided by human judges -- and that different sets of human evaluators can and do apply different sets of criteria in assigning ratings. It could be the case that conditions are so markedly different in the ZAN environment (vs. the ones in

effect at ZNY and ZOA) so as to account for these differences, or it could also be that the ZAN SME judges employed a somewhat more conservative rating strategy.

In any case the ZAN SMEs (as well as those from ZNY and ZOA) did end up with a significant number of tasks that did receive the highest ratings on two out of the three available task parameter scales. For purposes of this report's analysis, we have decided to refer to tasks that received the maximum rating on the frequency, criticality, and difficulty scales as "Tall Pole" (TP) tasks. Correspondingly, the tasks which received the maximum rating on any two out of these three scales have been classified as "Almost Tall Pole" (ATP) tasks.

Regardless of whether a given task falls into the TP or ATP category, the point is that these are pretty important tasks to be considered when evaluating and assessing ATOP system candidates. This is true for all of the reasons given in the previous three sections, as well as the fact that these particular sets of tasks represent the combination of those various factors. It is clearly necessary (but possibly insufficient) that these tasks be given priority attention when considering the suitability or acceptability of any new ATOP candidate system. If any such candidate system doesn't specifically address the flagged characteristics of each of the controller tasks in this set, then it is critically important to identify why that particular task will no longer be an item of concern (i.e. it has been eliminated or its function otherwise obviated by some alternative function or capability).

Given the relative importance of these TP and ATP tasks, the decision was made to present these selected task lists here in the body of the report. The ZAN controller tasks so designated are presented in Table 5-4. The corresponding sets of ZNY TP / ATP rated tasks are contained in Tables 5-5 and 5-6, respectively.

Table 5-4. ZAN Tasks Identified as Being "Almost Tall Pole" (Rated Extreme on Two Out of the Three Task Parameters — i.e., Frequency, Criticality, and Difficulty).

[Note: None of the ZAN Tasks Received Ratings that Placed It in the "Tall Pole" Category.]

Task No.	Task Statement	Rating Category
AOC.1.1.11	Evaluate existing traffic and sector plan(s)	Almost Tall Pole
AOC.1.1.15	"Review flight strips for accuracy (e.g., destination, altitude/requested altitude, and route)"	Almost Tall Pole
AOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts	Almost Tall Pole
AOC.1.2.4	Direct traffic flow to merge one or more westbound tracks of the NOPAC	Almost Tall Pole
AOC.1.2.8	"Relay clearance to pilot via appropriate means (e.g., direct VHF communications, ARINC, tower, base operations, pilot relay)"	Almost Tall Pole
AOC.1.2.9	Enter clearance data on flight progress strip(s)	Almost Tall Pole
AOC.1.2.10	Update flight plan in OCS per ZAN SOP	Almost Tall Pole
AOC.1.2.11	Receive acknowledgement of clearance	Almost Tall Pole
AOC.1.2.12	Receive pilot's reason why clearance is unacceptable	Almost Tall Pole

AOC.1.2.13	"Enter a line or ""X"" through the clearance information on the flight progress strip"	Almost Tall Pole
AOC.1.2.15	Initiate a communications search for aircraft	Almost Tall Pole
AOC.1.2.19	Initiate activation of flight plan in OCS	Almost Tall Pole
AOC.1.3.1	Receive latest boundary crossing time estimate and altitude from adjacent facility	Almost Tall Pole
AOC.1.3.2	Verify flight data shown on flight progress strip with adjacent facility controller	Almost Tall Pole
AOC.1.3.3	Record flight data on flight progress strip as received from adjacent facility controller	Almost Tall Pole
AOC.1.3.4	"Review flight's estimated time of arrival (ETA) at coordination fix, altitude, and routing for reasonableness"	Almost Tall Pole
AOC.1.3.5	Evaluate route and altitude for conflicts	Almost Tall Pole
AOC.1.3.7	Enter flight strip marking to indicate flight plan status	Almost Tall Pole
AOC.1.3.8	Issue control instructions to transferring controller	Almost Tall Pole
AOC.1.3.10	Receive radar handoff or progress report from adjacent anchorage sector	Almost Tall Pole
AOC.1.3.11	Record flight data on flight progress strip	Almost Tall Pole
AOC.1.4.1	Coordinate with adjacent sector/facility in control of flight(s) to resolve detected conflicts	Almost Tall Pole
AOC.1.4.2	Evaluate alternate solutions and provide viable solution to adjacent sector/facility for selection and coordination with pilot	Almost Tall Pole
AOC.1.5.1	Search flight strips/radar to identify flights that are ready for coordination of transfer of control with the adjacent sector/facility	Almost Tall Pole
AOC.1.5.4	Initiate radar handoff by entering the receiving sector ID and selecting aircraft on PVD to be handed off	Almost Tall Pole
AOC.1.5.5	Observe PVD for handoff acceptance (flashing datablock)	Almost Tall Pole
AOC.1.6.4	"Forward A/C ID, transfer of control point, latest estimate to transfer of control point, coordinated altitude, mach number (if appropriate), control information/remarks"	Almost Tall Pole
AOC.1.7.1	"Forward A/C callsign, fix or lat/long, control time at that point, pilot's estimate (if necessary), assigned altitude, assigned mach number, remarks"	Almost Tall Pole
AOC.1.8.1	Coordinate changes with receiving controller	Almost Tall Pole
AOC.1.11.6	Issue alternate instructions to adjacent sector/facility	Almost Tall Pole
AOC.1.12.1	Enter marking on flight strip to indicate coordination with adjacent facility has been accomplished	Almost Tall Pole
AOC.2.1.1	"Receive position report from pilot, or relayed by ARINC via OCS or by teletype message"	Almost Tall Pole
AOC.2.1.3	"Determine if information in position report is valid and reasonable, by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA"	Almost Tall Pole
AOC.2.1.4	Determine if controller's estimate of transit times between fixes are more reasonable than pilot's estimates	Almost Tall Pole
AOC.2.2.1	Update the previous control time	Almost Tall Pole
AOC.2.2.2	Update control time at subsequent fixes	Almost Tall Pole
AOC.2.2.3	Enter controller's and/or pilot's time estimate/progress report marking on flight strip	Almost Tall Pole
AOC.2.3.5	Contact pilot to confirm current information	Almost Tall Pole
AOC.2.4.1	Review the current and expected times and altitudes of all aircraft at each fix to see if a potential conflict exists relative to the applicable separation standards	Almost Tall Pole
AOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any	Almost Tall Pole

	other aircraft"	
AOC.2.4.3	Determine that immediate action is required	Almost Tall Pole
AOC.2.4.4	Determine options that will resolve the conflict	Almost Tall Pole
AOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft	Almost Tall Pole
NOC.2.4.6	"Select an option which is free of immediate conflicts, is compatible with the sector traffic plan, and considers user preferences"	Almost Tall Pole
AOC.2.4.7	Issue alternative(s) to transferring controller	Almost Tall Pole
AOC.2.4.8	Enter amended flight data on flight strip	Almost Tall Pole
AOC.2.4.9	Enter clearance amendment into computer as amendment message	Almost Tall Pole
AOC.2.4.10	Receive acknowledgement from aircraft of new clearance	Almost Tall Pole
AOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable	Almost Tall Pole
AOC.2.4.12	Defer resolution of the predicted conflict	Almost Tall Pole
AOC.2.4.13	"Enter red ""W"" on flight progress strips to denote conflict"	Almost Tall Pole
AOC.2.4.14	Evaluate each option by looking at radar display of each aircraft	Almost Tall Pole
AOC.2.7.1	Compare the new position report information with plan for traffic in the sector	Almost Tall Pole
AOC.2.7.2	Resequence flight strips	Almost Tall Pole
AOC.2.7.3	Remove old flight strips	Almost Tall Pole
AOC.3.1.1	"Receive pilot change request via radio, ARINC land-lines, or OCS"	Almost Tall Pole
AOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft or airspace	Almost Tall Pole
AOC.3.1.11	Evaluate change request based on sector traffic plan(s)	Almost Tall Pole
AOC.3.1.12	Evaluate change request based on altitude restrictions for direction of travel	Almost Tall Pole
AOC.3.1.13	Evaluate change request based on potential for request accommodation/coordination before transfer to next sector/facility	Almost Tall Pole
AOC.3.1.14	Evaluate change request based on knowledge about what the next sector/facility is likely to accept	Almost Tall Pole
AOC.3.1.15	Evaluate change request for conflicts based on flight strips and PVD information	Almost Tall Pole
AOC.3.1.18	Determine whether change request is acceptable	Almost Tall Pole
AOC.3.2.2	Flag current flight strip in canted position in strip bay as a reminder for further action needed on aircraft	Almost Tall Pole
AOC.3.2.6	"Receive pilot confirmation of clearance via pilot, ARINC land-lines, or OCS"	Almost Tall Pole
AOC.3.2.7	Request pilot report when arriving at new altitude	Almost Tall Pole
AOC.3.2.8	Request that pilot report when leaving current altitude	Almost Tall Pole
AOC.3.2.11	Receive pilot report of altitude leaving or reaching new altitude	Almost Tall Pole
AOC.3.2.13	Enter marking on control strip when pilot reports altitude leaving or reaching new altitude	Almost Tall Pole
AOC.3.2.14	Request pilot report of current altitude	Almost Tall Pole
AOC.3.2.15	"Coordinate change with subsequent facility (e.g., Oakland, Tokyo) before issuing clearance if flight is within 30 minutes of FIR boundary"	Almost Tall Pole
AOC.3.2.16	Coordinate change with subsequent sector before issuing clearance when flight is within 15 minutes of sector boundary	Almost Tall Pole
AOC.3.2.17	Coordinate change with subsequent sector before issuing clearance when flight is within 5 minutes of sector boundary	Almost Tall Pole
AOC.3.2.18	Enter flight strip marking on first and subsequent strips for non-altitude flight plan change requests	Almost Tall Pole
AOC.3.2.19	Observe Mode-C (altitude) update on PVD	Almost Tall Pole
AOC.3.2.20	Enter altitude change into PVD or OCS	Almost Tall Pole

AOC.3.2.21	Enter non-altitude change into OCS	Almost Tall Pole
AOC.3.3.4	Inform the pilot by radio or through ARINC that flight plan change request is denied	Almost Tall Pole
AOC.3.4.1	Formulate search for acceptable flight plan change	Almost Tall Pole
AOC.3.4.3	Evaluate alternative changes with respect to potential conflicts with other aircraft or airspace	Almost Tall Pole
AOC.3.4.4	Evaluate alternative changes with respect to sector traffic plan(s)	Almost Tall Pole
AOC.3.4.5	Evaluate alternative changes with respect to direction-of-travel altitude restrictions	Almost Tall Pole
AOC.3.4.6	Evaluate alternative changes with respect to potential request accommodation/coordination	Almost Tall Pole
AOC.3.4.7	Evaluate alternative changes with respect to knowledge of what next sector will accept	Almost Tall Pole
AOC.4.1.2	Review information recorded on flight strips	Almost Tall Pole
AOC.4.1.3	Verify reasonableness of each strip	Almost Tall Pole
AOC.4.1.4	Verify accuracy of data	Almost Tall Pole
AOC.4.1.5	Update the strip marking	Almost Tall Pole
AOC.4.2.1	"Review flight strip bays, one fix posting area at a time"	Almost Tall Pole
AOC.4.2.2	Review information recorded on flight strips	Almost Tall Pole
AOC.4.2.4	"Compare time, altitude, and route of flight to see if a potential conflict exists"	Almost Tall Pole
AOC.4.2.5	Review traffic situation on PVD	Almost Tall Pole
AOC.4.3.1	"Review flight strip bays, one fix posting area at a time"	Almost Tall Pole
AOC.4.3.2	Review information recorded on flight strips	Almost Tall Pole
AOC.4.3.3	Verify reasonableness of data on each strip	Almost Tall Pole
AOC.4.3.4	Compare current time and estimated time at fix	Almost Tall Pole
AOC.4.3.8	Contact controllers in adjacent sectors to see if a position report was received for the aircraft	Almost Tall Pole
AOC.4.3.9	Contact ARINC by OCS or land-line	Almost Tall Pole
AOC.4.3.10	Request a position report from ARINC	Almost Tall Pole
AOC.4.3.11	Receive position report from ARINC	Almost Tall Pole
AOC.4.3.14	Contact aircraft by radio	Almost Tall Pole
AOC.4.3.15	Request ARINC to advise the pilot to contact ZAN via radio	Almost Tall Pole
AOC.4.4.1	"Review flight strip bays, one fix posting area at a time"	Almost Tall Pole
AOC.4.4.2	Review information recorded on flight strips	Almost Tall Pole
AOC.4.4.3	Determine options for traffic in the sector	Almost Tall Pole
AOC.4.4.4	Formulate a plan for traffic in the sector	Almost Tall Pole
AOC.4.4.5	Evaluate the plan for traffic in the sector	Almost Tall Pole
AOC.4.4.6	Update the plan for traffic in the sector	Almost Tall Pole
AOC.4.4.7	Review factors such as management of traffic flows for merging or crossing routes	Almost Tall Pole
AOC.4.4.8	Review factors such as current or anticipated pilot requests for route or altitude changes	Almost Tall Pole
AOC.4.4.9	Review factors such as contingencies	Almost Tall Pole
AOC.4.4.11	Update flight strips to reflect current information	Almost Tall Pole
AOC.4.5.1	Contact other controller/ARINC	Almost Tall Pole
AOC.4.5.2	Conduct communication of necessary information	Almost Tall Pole
AOC.4.6.1	Resequence flight strips	Almost Tall Pole
AOC.4.8.1	"Verify aircraft are at same flight level, or aircraft are climbing/descending to same flight level, or aircraft is climbing/descending through another A/C's altitude"	Almost Tall Pole
AOC.4.8.3	Issue appropriate Mach number(s) to first aircraft	Almost Tall Pole
AOC.4.8.4	Receive first aircraft's acknowledgement of receipt of clearance	Almost Tall Pole

AOC.4.8.5	Issue appropriate Mach number(s) to second aircraft	Almost Tall Pole
AOC.4.8.6	Verify aircraft follow the same track or continuously diverging track	Almost Tall Pole
AOC.4.8.7	Verify that radar is used to ensure that the appropriate time interval will exist at the common point	Almost Tall Pole
AOC.4.8.8	Verify radar is used such that appropriate time interval will exist at a significant point on each track from which tracks continuously diverge	Almost Tall Pole
AOC.4.8.13	Issue sufficient longitudinal separation to ensure appropriate minima will exist until another form of separation is achieved	Almost Tall Pole
AOC.4.8.14	Receive second aircraft's acknowledgement of receipt of clearance	Almost Tall Pole
AOC.4.8.15	Verify via position reports and control estimates that the appropriate time interval exists over the common point	Almost Tall Pole
AOC.4.8.16	Verify via pilot estimates that the appropriate time interval exists at the point from which tracks continuously diverge	Almost Tall Pole
AOC.4.10.1	Brief relieving controller on sector operations using position relief briefing checklist	Almost Tall Pole
AOC.4.10.4	Verify completeness of relief briefing receipt	Almost Tall Pole
AOC.4.11.1	Review system status to determine currency or updates	Almost Tall Pole
AOC.4.11.2	Review current and projected traffic or weather	Almost Tall Pole
AOC.4.11.3	Review flight progress strips and displayed lists for correlation	Almost Tall Pole
AOC.4.11.4	"Receive controller relief briefing using briefing checklist, and notes (if applicable) to assure completeness of briefing coverage"	Almost Tall Pole
AOC.4.11.6	Determine if ready to accept control responsibility	Almost Tall Pole
AOC.4.11.8	Verify that all required display parameters are properly set	Almost Tall Pole
AOC.4.11.9	"Check displays or equipment for proper configuration usability, and satisfactory status"	Almost Tall Pole
AOC.5.1.1	"Determine an appropriate course of action which guarantees safety as a first priority, but expedites the flow of air traffic to the extent possible"	Almost Tall Pole
AOC.5.2.4	Project the traffic flow in order to take into account the possibility of not being able to intervene in the future to prevent conflicts	Almost Tall Pole
AOC.7.3.1	Receive SIGMET/MIS from area supervisor or directly from CWSU/weather coordinator specialist	Almost Tall Pole
AOC.7.3.3	Determine location of the phenomenon being described	Almost Tall Pole
AOC.7.3.5	Broadcast SIGMET/MIS to all aircraft within one hour flying time and/or 150 nautical mile laterally from the affected area	Almost Tall Pole
AOC.7.3.8	Request a pilot report (PIREP) from each aircraft transiting the affected area	Almost Tall Pole
AOC.7.3.9	"Forward PIREPS to the center weather service unit, or the weather coordinator"	Almost Tall Pole
AOC.7.3.10	Receive significant weather PIREP	Almost Tall Pole
AOC.7.3.11	Forward significant weather PIREP to any affected flights within one hour flying time of the position of the PIREP until a SIGMET can be issued	Almost Tall Pole

Table 5-5. ZNY Tasks Identified as Being “Tall Pole” (Rated Extreme on All Three Task Parameters), or “Almost Tall Pole” (Rated Extreme on Two Out of the Three Task Parameters — i.e., Frequency, Criticality, and Difficulty).

Task No.	Task Statement	Rating Category
NOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts	Tall Pole
NOC.1.3.5	Evaluate route and altitude for conflicts	Tall Pole
NOC.1.4.4	Determine alternative solution	Tall Pole
NOC.2.4.1	Review the current and expected times and altitudes of other aircraft at each fix to see if a potential conflict exists	Tall Pole
NOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any other aircraft"	Tall Pole
NOC.2.4.3	Determine that immediate action is required	Tall Pole
NOC.2.4.4	Determine options that will resolve the conflict	Tall Pole
NOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft	Tall Pole
NOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft	Tall Pole
NOC.3.1.11	Evaluate change request based on plans for dealing with other aircraft in the future	Tall Pole
NOC.3.1.13	Evaluate change request based on potential for intervention with the subject or other aircraft before transfer to next facility	Tall Pole
NOC.3.1.15	Evaluate change request for conflicts based on knowledge of aircraft positions and reference to flight strips	Tall Pole
NOC.3.1.18	Determine whether change request is acceptable	Tall Pole
NOC.3.4.3	Evaluate candidate alternative changes with respect to potential conflicts with other aircraft	Tall Pole
NOC.3.4.4	Evaluate candidate alternative changes with respect to plans for dealing with other aircraft	Tall Pole
NOC.3.4.6	Evaluate candidate alternative changes with respect to potential for intervention before crossing sector boundary	Tall Pole
NOC.4.4.4	Formulate a plan for traffic in the sector	Tall Pole
NOC.4.4.5	Evaluate the plan for traffic in the sector	Tall Pole
NOC.4.4.7	Review factors such as management of traffic flows for merging or crossing routes	Tall Pole
NOC.4.8.13	Issue sufficient longitudinal separation to ensure appropriate minima will exist until another form of separation is achieved	Tall Pole
NOC.1.2.2	Enter warning indication on appropriate flight strip and defer action	Almost Tall Pole
NOC.1.2.3	"Receive oceanic entry point, time, and altitude"	Almost Tall Pole
NOC.1.2.8	"Relay clearance to pilot via appropriate means (e.g., ARINC, adjacent sector/facility controller, pilot relay)"	Almost Tall Pole
NOC.1.2.9	Enter clearance data on flight progress strip(s)	Almost Tall Pole
NOC.1.2.10	Update flight plan database	Almost Tall Pole
NOC.1.2.11	Receive acknowledgment of clearance	Almost Tall Pole
NOC.1.2.17	Initiate activation of flight plan in ODAPS	Almost Tall Pole
NOC.1.2.18	Initiate activation of flight plan in host	Almost Tall Pole
NOC.1.3.1	Receive latest boundary crossing time estimate and altitude from adjacent facility	Almost Tall Pole
NOC.1.3.2	Verify flight data shown on flight progress strip with adjacent facility controller	Almost Tall Pole

NOC.1.3.3	Record flight data on flight progress strip as received from adjacent facility controller	Almost Tall Pole
NOC.1.3.4	"Review flight's estimated time of arrival (ETA) at coordination fix, altitude, and routing for reasonableness"	Almost Tall Pole
NOC.1.3.8	Issue control instructions to transferring controller	Almost Tall Pole
NOC.1.4.1	Coordinate with adjacent controller to resolve detected conflicts	Almost Tall Pole
NOC.1.5.1	Search flight strips to identify flights that are ready for coordination of flight plan information with the adjacent sector/facility	Almost Tall Pole
NOC.1.5.2	Contact adjacent sector/facility a parameter number of minutes prior to aircraft's estimated boundary time	Almost Tall Pole
NOC.1.6.4	"Forward aircraft identification, boundary point and estimate, coordinated altitude, coordinated speed, information/remarks"	Almost Tall Pole
NOC.1.6.5	Forward aircraft's flight plan	Almost Tall Pole
NOC.1.6.9	Negotiate alternatives that do not cause a near-term conflict with sector's traffic	Almost Tall Pole
NOC.1.6.10	Relay alternatives to pilot through ARINC	Almost Tall Pole
NOC.1.6.17	Conduct verbal verification of transfer	Almost Tall Pole
NOC.1.6.23	Coordinated clearance with receiving controller	Almost Tall Pole
NOC.1.7.1	"Forward A/C callsign, fix or lat/long, control time at that point, pilot's estimate (if necessary), assigned altitude, assigned MACH number, remarks"	Almost Tall Pole
NOC.1.8.1	Coordinate changes with receiving controller	Almost Tall Pole
NOC.1.12.1	Enter marking on flight strip to indicate coordination with adjacent sector/facility controller has been accomplished	Almost Tall Pole
NOC.2.1.5	"Receive position report from pilot, relayed by ARINC on TP display"	Almost Tall Pole
NOC.2.1.6	Review ODAPS TP for ODAPS discrepancy reports	Almost Tall Pole
NOC.2.1.7	"Determine if the information in the discrepancy report is valid and reasonable by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA "	Almost Tall Pole
NOC.2.3.1	Contact ARINC by telephone to confirm information	Almost Tall Pole
NOC.2.3.3	Receive verification of position report	Almost Tall Pole
NOC.2.4.6	"Select an option which is free of immediate conflicts, is compatible with the sector traffic plan, and considers user preferences"	Almost Tall Pole
NOC.2.4.7	Issue alternative(s) to transferring controller	Almost Tall Pole
NOC.2.4.8	Enter amended flight data on flight strip	Almost Tall Pole
NOC.2.4.9	Enter clearance amendment into ODAPS as amendment message	Almost Tall Pole
NOC.2.4.10	Receive acknowledgment from aircraft of new clearance	Almost Tall Pole
NOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable	Almost Tall Pole
NOC.2.4.12	Defer resolution to the problem if conflict will occur in the future	Almost Tall Pole
NOC.2.4.13	"Enter red ""W"" on flight progress strips to denote conflict"	Almost Tall Pole
NOC.2.7.2	Resequence flight strips	Almost Tall Pole
NOC.3.1.17	Evaluate sector ODAPS TP to visually determine acceptability of flight plan change	Almost Tall Pole
NOC.3.4.1	Formulate search for acceptable flight plan change	Almost Tall Pole
NOC.4.2.2	Review information recorded on flight strips	Almost Tall Pole
NOC.4.2.4	"Compare time, altitude, speed, and route of flight at each fix to see if a potential conflict exists"	Almost Tall Pole
NOC.4.4.3	Determine options for traffic in the sector	Almost Tall Pole
NOC.4.6.1	Resequence flight strips	Almost Tall Pole

NOC.4.8.3	Issue appropriate Mach number(s) to first aircraft	Almost Tall Pole
NOC.4.8.4	Receive first aircraft's acknowledgment of receipt of clearance	Almost Tall Pole
NOC.4.8.5	Issue appropriate Mach number(s) to second aircraft	Almost Tall Pole
NOC.4.8.6	Verify aircraft follow the same track or continuously diverging track	Almost Tall Pole
NOC.4.8.8	Verify radar is used such that appropriate time interval will exist at a significant point on each track from which tracks continuously diverge	Almost Tall Pole
NOC.4.8.14	Receive second aircraft's acknowledgment of receipt of clearance	Almost Tall Pole
NOC.4.10.1	Brief relieving controller on sector operations	Almost Tall Pole
NOC.4.10.4	Verify completeness of relief briefing receipt	Almost Tall Pole
NOC.6.1.4	Issue IFR separation between MARSA aircraft requesting IFR and other IFR flights	Almost Tall Pole
NOC.6.5.4	Issue separation	Almost Tall Pole
NOC.6.7.6	Issue clearance at the exit point (end of refueling) for each aircraft in the refueling operations	Almost Tall Pole
NOC.7.1.5	Issue advisory that an emergency descent is in progress to other aircraft in the vicinity of the emergency aircraft	Almost Tall Pole
NOC.7.1.8	Issue clearances to other aircraft in conflict with the emergency aircraft to re-establish separation	Almost Tall Pole
NOC.7.2.4	Conduct actions to separate affected aircraft	Almost Tall Pole

Table 5-6. ZOA Tasks Identified as Being “Tall Pole” (Rated Extreme on All Three Task Parameters), or “Almost Tall Pole” (Rated Extreme on Two Out of the Three Task Parameters — i.e., Frequency, Criticality, and Difficulty).

Task No.	Task Statement	Rating Category
OOC.1.4.2	Evaluate alternate solutions and provide viable solution to adjacent facility for selection and coordination with pilot	Tall Pole Task
OOC.2.4.1	Review the current and expected times and altitudes of other aircraft at each fix to see if a potential conflict exists	Tall Pole Task
OOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any other aircraft"	Tall Pole Task
OOC.2.4.3	Determine that immediate action is required	Tall Pole Task
OOC.2.4.4	Determine options that will resolve the conflict	Tall Pole Task
OOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft	Tall Pole Task
OOC.2.4.6	Select an option which is free of immediate conflicts and is compatible with the sector traffic plan	Tall Pole Task
OOC.4.10.1	Brief relieving controller on sector operations	Tall Pole Task
OOC.4.10.4	Verify completeness of relief briefing receipt	Tall Pole Task
OOC.4.11.4	Receive controller relief briefing	Tall Pole Task
OOC.4.11.5	Review briefing checklist or notes to assure completeness of briefing coverage	Tall Pole Task
OOC.1.1.11	Evaluate existing traffic and sector plan(s)	Almost Tall Pole
OOC.1.1.12	Formulate departure clearance	Almost Tall Pole
OOC.1.1.14	"Relay clearance to pilot via appropriate means (e.g., ARINC, tower, base operations, pilot relay)"	Almost Tall Pole
OOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts	Almost Tall Pole
OOC.1.2.2	Enter warning indication on appropriate flight strip and defer action	Almost Tall Pole
OOC.1.2.3	"Receive oceanic entry point, time, and altitude"	Almost Tall Pole
OOC.1.2.7	Check situation display to verify clearance	Almost Tall Pole
OOC.1.2.9	Enter clearance data on flight progress strip(s)	Almost Tall Pole
OOC.1.2.11	Receive acknowledgment of clearance	Almost Tall Pole
OOC.1.3.1	Receive latest boundary crossing time estimate and altitude from adjacent facility	Almost Tall Pole
OOC.1.3.2	Verify flight data shown on flight progress strip with adjacent facility controller	Almost Tall Pole
OOC.1.3.3	Record flight data on flight progress strip as received from adjacent facility controller	Almost Tall Pole
OOC.1.3.4	"Review flight's estimated time of arrival (ETA) at coordination fix, altitude, and routing for reasonableness"	Almost Tall Pole
OOC.1.3.5	Evaluate route and altitude for conflicts	Almost Tall Pole
OOC.1.4.1	Coordinate with adjacent facility in control of flight(s) to resolve detected conflicts	Almost Tall Pole
OOC.1.4.3	Coordinate resolution of conflict	Almost Tall Pole
OOC.1.5.1	Search to identify flights that are ready for coordination of transfer of control with the adjacent facility	Almost Tall Pole
OOC.1.5.2	Contact adjacent facility/sector a parameter number of minutes prior to aircraft's estimated time over transfer of control point	Almost Tall Pole
OOC.1.6.4	"Forward aircraft identification, transfer of control point, latest	Almost Tall Pole

	estimate to transfer of control point, coordinated altitude, MACH number, control information/remarks"	
OOC.1.6.9	Select alternatives that do not cause a near-term conflict with sector's traffic	Almost Tall Pole
OOC.1.6.10	Relay alternatives to pilot	Almost Tall Pole
OOC.1.6.11	Receive response of preferred alternative from pilot	Almost Tall Pole
OOC.1.6.14	"Contact adjacent facility to pass transfer of control through direct-line voice communication, commercial-line voice, teletype, or autovon prior to coordination time"	Almost Tall Pole
OOC.1.6.15	Verify control information pertinent to adjacent facilities/sectors is accurate	Almost Tall Pole
OOC.1.6.16	Verify black coordination indicator on appropriate flight progress strip indicating computer interface between ODAPS and adjacent ATC systems	Almost Tall Pole
OOC.1.6.17	Conduct verbal verification of transfer	Almost Tall Pole
OOC.1.7.1	"Forward A/C callsign, fix or lat/long, control time at that point, pilot's estimate (if necessary), assigned altitude, assigned MACH number, remarks"	Almost Tall Pole
OOC.1.7.2	"Forward A/C callsign, fix or lat/long, control time, pilot's estimate (if necessary) for last reporting point within transferring controller's sector, assigned altitude, assigned MACH number, remarks"	Almost Tall Pole
OOC.1.7.4	"Forward A/C callsign, fix or lat/long, control time, pilot's estimated time (if necessary) for first reporting point within receiving sector airspace, assigned altitude, assigned MACH, remarks"	Almost Tall Pole
OOC.1.8.1	Coordinate changes with receiving controller	Almost Tall Pole
OOC.1.9.1	Coordinate WAFDOF with receiving controller early enough to allow time to establish A/C at an appropriate altitude for direction of flight should approval be denied	Almost Tall Pole
OOC.1.9.2	Receive approval from receiving controller of wrong altitude for direction of flight	Almost Tall Pole
OOC.1.10.1	Forward flight information to adjacent facility or sector	Almost Tall Pole
OOC.1.12.1	Enter marking on flight strip to indicate coordination with adjacent facility has been accomplished	Almost Tall Pole
OOC.2.1.4	Determine if controller's estimate of transit times between fixes are more reasonable than pilot's estimates	Almost Tall Pole
OOC.2.1.5	Receive position report from ARINC or CPDLC	Almost Tall Pole
OOC.2.1.6	Review ODAPS FDIO for ODAPS discrepancy reports	Almost Tall Pole
OOC.2.2.1	Update the previous control time	Almost Tall Pole
OOC.2.2.2	Update control time at subsequent fixes	Almost Tall Pole
OOC.2.2.4	Observe acceptance of progress report on ODAPS FDIO	Almost Tall Pole
OOC.2.2.5	Enter progress report into ODAPS flight plan database	Almost Tall Pole
OOC.2.3.1	Contact Pilot to confirm information	Almost Tall Pole
OOC.2.3.3	Receive verification of position report	Almost Tall Pole
OOC.2.4.8	Enter amended flight data on flight strip	Almost Tall Pole
OOC.2.4.10	Receive acknowledgment from aircraft of new clearance	Almost Tall Pole
OOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable	Almost Tall Pole
OOC.2.4.13	"Enter red ""W"" on flight progress strips to denote conflict"	Almost Tall Pole
OOC.2.7.1	Compare mentally the new position report information with plan for traffic in the sector	Almost Tall Pole

OOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft	Almost Tall Pole
OOC.3.1.17	Evaluate sector ODAPS ISD to visually determine acceptability of flight plan change	Almost Tall Pole
OOC.3.1.18	Determine whether change request is acceptable	Almost Tall Pole
OOC.3.2.6	Receive pilot confirmation of clearance through ARINC	Almost Tall Pole
OOC.3.2.13	Enter marking on first and subsequent flight strips when pilot reports arriving at new altitude	Almost Tall Pole
OOC.3.3.1	Determine flight plan change is not acceptable	Almost Tall Pole
OOC.3.3.5	Formulate candidate alternative changes	Almost Tall Pole
OOC.3.3.6	Evaluate candidate alternative changes with respect to potential conflicts with other aircraft	Almost Tall Pole
OOC.3.4.1	Formulate search for acceptable flight plan change	Almost Tall Pole
OOC.4.1.1	"Review flight strip bays, one fix posting area at a time"	Almost Tall Pole
OOC.4.1.2	Review information recorded on flight strips	Almost Tall Pole
OOC.4.1.4	Verify data source	Almost Tall Pole
OOC.4.1.5	Update the strip marking	Almost Tall Pole
OOC.4.2.1	"Review flight strip bays, one fix posting area at a time"	Almost Tall Pole
OOC.4.2.2	Review information recorded on flight strips	Almost Tall Pole
OOC.4.2.4	"Compare time, altitude, and route of flight at each fix to see if a potential conflict exists"	Almost Tall Pole
OOC.4.3.1	"Review flight strip bays, one fix posting area at a time"	Almost Tall Pole
OOC.4.3.2	Review information recorded on flight strips	Almost Tall Pole
OOC.4.3.4	Compare current time and estimated time at fix	Almost Tall Pole
OOC.4.3.11	Receive position report	Almost Tall Pole
OOC.4.3.12	Initiate a communications search for contact with aircraft	Almost Tall Pole
OOC.4.3.13	Direct emergency services as specified by order and procedures	Almost Tall Pole
OOC.4.5.1	Contact other controller/ARINC	Almost Tall Pole
OOC.4.5.2	Conduct communication of necessary information	Almost Tall Pole
OOC.4.7.7	Receive position report from VFR flight at least every 1 hour and 20 minutes	Almost Tall Pole
OOC.4.8.1	"Verify aircraft are at same flight level, or aircraft are climbing/descending to same flight level, or aircraft is climbing/descending through another A/C's altitude"	Almost Tall Pole
OOC.4.8.2	Verify aircraft have not been assigned a block altitude	Almost Tall Pole
OOC.4.8.3	Issue a MACH number to aircraft exiting FIR or when necessary	Almost Tall Pole
OOC.4.8.6	Verify aircraft follow the same track or continuously diverging track	Almost Tall Pole
OOC.4.8.12	Initiate reduced MACH technique when both aircraft have reported over the same DME fix or land-based NAVAID established with proper longitudinal separation	Almost Tall Pole
OOC.4.8.13	Verify sufficient longitudinal separation to ensure appropriate minima will exist until another form of separation is achieved	Almost Tall Pole
OOC.4.10.5	Conduct post-brief observation	Almost Tall Pole
OOC.5.1.1	"Determine an appropriate course of action which guarantees safety as a first priority, but expedites the flow of air traffic to the extent possible"	Almost Tall Pole
OOC.5.1.4	Formulate manual flight strips	Almost Tall Pole
OOC.5.1.6	Initiate a ground stop for affected oceanic flights	Almost Tall Pole
OOC.5.1.7	Direct increased spacing between aircraft and/or impose route restrictions to compensate for higher controller workload	Almost Tall Pole
OOC.5.2.3	Direct increased spacing between aircraft and/or impose route restrictions to compensate for higher controller workload	Almost Tall Pole

OOC.5.2.5	Inhibit additional traffic from entering affected airspace	Almost Tall Pole
OOC.5.2.6	Conduct attempts for communication with satellite-equipped aircraft	Almost Tall Pole
OOC.5.2.7	"Conduct attempts for HF, UHF, or VHF communication relays through ATC facilities within their range of VHF (500 miles)"	Almost Tall Pole
OOC.5.2.8	Conduct attempts to use aircraft companies/commands to send messages directly to aircraft by radio (ACARS)	Almost Tall Pole
OOC.5.2.9	Conduct attempts to use military global command and control (GCCS) stations for phone patches with military aircraft	Almost Tall Pole
OOC.5.2.10	Conduct attempts to use CPDLC equipped aircraft to relay messages to other aircraft	Almost Tall Pole
OOC.5.2.11	Conduct attempts to use an aircraft to relay messages to other aircraft within 500 mile radius for air-to-air relay	Almost Tall Pole
OOC.5.2.12	Receive contact from ARINC operators by voice instead of ODL/ARINC Monitor	Almost Tall Pole
OOC.5.3.1	Direct larger-than-normal separation distances from the failed aircraft	Almost Tall Pole
OOC.5.3.2	Direct other aircraft away in altitude from the failed aircraft	Almost Tall Pole
OOC.6.5.2	Initiate change to ALTRV due to safety or other extraordinary circumstances	Almost Tall Pole
OOC.7.1.1	Determine that special attention or handling for a particular emergency situation is warranted	Almost Tall Pole
OOC.7.1.2	Request for a communications path to the aircraft from ARINC in order to talk directly to the pilot to resolve problem	Almost Tall Pole
OOC.7.1.3	"Issue advisory to pilot including ""Unable due to traffic"", quote of traffic, alternative options, and ""Advise intentions"""	Almost Tall Pole
OOC.7.1.5	Issue advisory that an emergency descent is in progress to other aircraft in the vicinity of the emergency aircraft	Almost Tall Pole
OOC.7.1.7	Issue advisory that descent is complete to other aircraft in the vicinity of the emergency aircraft	Almost Tall Pole
OOC.7.1.8	Issue clearances to other aircraft in conflict with the emergency aircraft to re-establish separation	Almost Tall Pole
OOC.7.2.1	"Receive notice from pilot that weather avoidance deviation is required, including direction of course deviation and anticipated number of miles deviation requires"	Almost Tall Pole
OOC.7.2.2	"Issue advisory to pilot ""Unable deviation due to traffic"", quote traffic, issue alternatives, request ""Advise intentions"""	Almost Tall Pole
OOC.7.2.3	Issue traffic advisories to all affected flights	Almost Tall Pole
OOC.7.2.4	Conduct actions to separate affected aircraft	Almost Tall Pole
OOC.7.2.5	Approve pilot's request to deviate around weather	Almost Tall Pole
OOC.7.2.7	"Receive request from pilot for permission for weather avoidance deviation, including direction of course deviation, anticipated number of miles required"	Almost Tall Pole
OOC.7.3.1	Receive Oceanic SIGMET	Almost Tall Pole
OOC.7.3.2	Broadcast SIGMETs to all affected aircraft when required	Almost Tall Pole
OOC.7.3.10	Receive significant weather PIREP	Almost Tall Pole
OOC.7.4.2	"Forward aircraft identification, estimated position and other pertinent information to supervisor to ascertain phase of alerting service required and to complete form 7100-5"	Almost Tall Pole

6 POTENTIAL USES OF UPDATED J/TA DATA WITHIN ATOPS

The preceding section, the attached report appendices, and the supplemental appendices to this report provide a considerable amount of information regarding the ways in which Oceanic Controllers go about the business of conducting operations within today's ZAN, ZNY, and ZOA Oceanic ATC environments. This information ought to be of direct value and benefit to a variety of people and organizations involved in planning for and supporting the ATOP system acquisition process. It would appear that those personnel, organizations, and purposes would include:

- The SPT members and other Oceanic ATC facility representatives who are involved in developing realistic and representative operational scenarios to be used for simulation testing and evaluation purposes. These personnel will be able to use various aspects of these data sets to assess and validate the accuracy, completeness, and suitability of their scenarios.
- The HFE Team members responsible for conducting independent HFE audits and developing controller interactive evaluations of HFE aspects of the candidate ATOP system design. All HFE analyses must be based upon as thorough a knowledge base of user (controller) operational needs, requirements, and concerns as is possible. In addition, the information contained in these J/TA data sets will prove to be invaluable in the development of operationally-appropriate questionnaire items for upcoming CHI-suitability and ergonomic-appropriateness evaluations.
- The program support personnel preparing and conducting functional audit activities -- activities intended to ensure that all operational functionality present in the current system are carried forward or otherwise accounted for in the new system -- will be able to use various portions of these data as a completeness check on the set of functions they are developing. This would include supporting the need to understand and document some of the differences in functionalities required to support Oceanic ATC operations at each of the three affected FAA facilities.
- The semi-finalist vendor candidates who will be proposing "NDI" systems (as well as modifications to be made to those systems) to be acquired for installation and implementation as the FAA's new ATOP system. The vendors **and the FAA** would clearly benefit from gaining a better understanding of the current operational capabilities and functionalities they are trying to replace and/or augment. Such knowledge would help them be better able to identify and convey the FAA which aspects of their respective design offer the greatest operational benefit. It would also help them to identify and understand some of the operational gaps and shortcomings of their current system. This knowledge and understanding would in turn help them better formulate, plan for, more realistically cost out, and propose various approaches to mitigating and resolving any such gaps. Additionally, such information would help them to better understand and appreciate various of the inter-facility differences in operational needs and requirements.

It is the considered opinion of the HFE analysts and consultants who prepared and assembled these revised J/TA data sets, that the information contained in this report, and

the suggested ways in which those data could be employed be given as wide a distribution within the ATOPS program as possible. It is felt that this dissemination should include in particular the ATOP vendor candidate semi-finalists. Assuming that such materials are provided in a fair and impartial manner (i.e., identical packages distributed to both vendor teams at the same time), this distribution cannot help but produce positive benefits for the vendors, the FAA, the controllers who will actually end up using the ATOP system, and the FAA's customers (the airlines) who will ultimately benefit from the improvements that will be realized when the ATOP system is installed and becomes operational.

APPENDIX A.
Definitions of Oceanic ATC Events -- As Listed in Table 5-1.

ADIZ PENETRATION: Aircraft enter the Air Defense Identification Zone (ADIZ) on approaching the United States territories. ADIZ penetrations are reported to appropriate Military agencies.

AERIAL REFUELING: Aerial Refueling is performed by military units for training and operationally to extend the range of aircraft on certain missions. The refueling may take place on a published refueling track in airspace so reserved for that purpose by the military. Refueling is not restricted to refueling tracks.

AIRCRAFT ABOVE FL 600: The military may operate aircraft above Flight Level 600 (60,000 feet pressure altitude), involving certain aircraft, which may require classified (security) procedures.

AIRPORT ACCEPTANCE RATE: Each runway/airport can accept arrivals at a rate commensurate with its capacity. A change in the airport acceptance rate may be forced by weather, runway repair, or other causes and must be allowed for in the overall picture.

AIRCRAFT-AIRCRAFT CONFLICT: This is a critical event in air traffic control. An aircraft-aircraft conflict occurs when there is potential loss of required separation of two aircraft.

AIRCRAFT-APPROACHING SECTOR BOUNDARY: When an aircraft approaches a sector/facility boundary, coordination is required.

AIRCRAFT EMERGENCY-AIRBORNE: A pilot will report an aircraft emergency under conditions of in-flight fire, rapid decompression, critical system failure, or other problem that the pilot or controller deems an emergency.

AIRCRAFT NOT RESPONSIVE TO ATC DIRECTION: Some aircraft, such as state-owned aircraft, may not conform to ATC rules in international airspace.

AIRSPACE RELEASE: A section of airspace belonging to one sector may be released to an adjacent sector, facility, or the military for temporary use.

AIRSPACE/ALTRV RESERVATION: Military missions or civilian activities may require the advance reservation of airspace or altitude. These reservations are filed and forwarded to appropriate facilities.

AIRSPACE INTRUSION: An aircraft enters controlled airspace without prior ATC knowledge.

AIRSPACE/MOVEMENT AREA RESTRICTION: Notice to restrict activity in airspace or movement area. A section of airspace normally available for use may be closed temporarily due to some incident, such as smoke or ash from fire or volcanic activity. Similarly, a movement area or portion of it may be closed to accommodate some temporary obstruction or ground activity, such as construction (e.g., Wake, Guam).

AMENDED FLIGHT PLAN: An amended flight plan may be requested for any reason. It generally is used to obtain more direct routing, to avoid weather/turbulence, or for fuel economy. The new route may be specified as an airway, ATS Route, NAVAID-direct-NAVAID, RNAV, or coordinates

(latitude-longitude) to coordinates. Amended routes also may arise from a change in destination due to pilot request or contingencies. ATC may also direct changes to flight plan fields 2-1 1.

ARRIVAL MESSAGE RECEIPT: A message received by a facility of the arrival time of an aircraft at the destination of intended landing.

BALLOON: Balloons extending into oceanic airspace (both manned and unmanned) represent non-controlled objects of which the controller must maintain awareness.

BOMB THREAT: A situation involving aircraft under the duress of a bomb threat.

CELESTIAL NAVIGATION ADVISORY: Notification is received that an aircraft is using only celestial navigation.

CHANGE TRAFFIC PATTERN: Occasionally an unexpected incident or weather phenomenon will occur that will disrupt the normal traffic flow. ATC initiates a new traffic flow when this occurs.

CLEARANCE DELIVERY: Clearance delivery is the transmittal of an initial clearance, usually based upon a filed flight plan, to the pilot by ATC. It signifies the acceptance of the flight plan and includes any modifications interjected by ATC. Non-flight plan items included in the clearance delivery are the assigned beacon code, frequency assignments, and any restrictions. Tower positions deliver IFR clearances in accordance with the Oceanic ARTCC letter of agreement or request the long-range clearances from the oceanic controller. When this is impractical or when a VFR departure is made, the controlling sector may deliver the clearance directly. For air-filed flight plans, the oceanic controller or ARINC may deliver or relay the clearance.

CLEARANCE REQUEST: A change of route or altitude may be requested by a pilot for better efficiency due to favorable winds, to avoid turbulence or other weather, or to optimize a climb or descent. This may include pilots requesting the modification of a restriction. Certain military and special operations may request a block altitude assignment, which assigns airspace with upper and lower boundaries.

COMBINE/DECOMBINE POSITION: Oceanic ATC positions may be combined/decombined based on traffic activity.

COMMUNICATION FAILURE: A failure in intercom or interphone isolates the controller from resources, other facilities, and/or traffic being controlled. Isolated or total failures are possible. All or partial communications are lost.

CONTROLLER OVERLOAD: On occasion the traffic activity or complexity will reach a point where the controller will become overloaded either with events or with inputs. The Area Supervisor may provide for position resectorization or assign another controller to provide assistance. The controller also may directly request assistance from the supervisor.

DEPARTURE TIME RECEIPT: The time an aircraft becomes airborne. When used in conjunction with a computer system, it may represent the activation of a proposed flight plan. It differs from an en route time message in that climb characteristics normally are processed when a departure message is entered into the system.

ENTERING/LEAVING AIRBORNE HOLD: The pilot of an IFR aircraft is required to report time and altitude entering a hold or reaching a clearance limit. Another report is required leaving the holding fix or point. The holding pattern may be based on timed legs or some leg length. The pattern may be published or not and may use right turns (standard) or left turns.

EQUIPMENT MAINTENANCE NEED: NAVAIDS, ODAPS, interphones, or other equipment require periodic preventative maintenance. Since data from these facilities are important inputs to the system, the effect of a requested outage for maintenance must be assessed thoroughly before it is approved or denied.

EXPERIMENTAL FLIGHT: The pilot of an experimental aircraft is required to notify ATC of operation when operating in oceanic controlled airspace.

FACILITY CLOSURE: Small and medium towers may be closed when there is little or no traffic activity, such as on a midnight shift or due to weather conditions. Airspace that had been delegated to the tower reverts to the oceanic controller until the tower is reopened. The control of any aircraft in the area will be coordinated between the facilities during the transition period.

FACILITY REOPENING: Towers that will have been scheduled to be shut down during periods of little traffic activity are reopened during normal scheduled hours. The control of any aircraft in the area will be coordinated between the facilities during the transition period.

FILED FLIGHT PLAN: Pilots requiring ATC services will file a flight plan. Flight plan data are used by the computer system to develop and distribute Flight Progress Strips. Subsequent changes to the flight plan may be made by flight plan amendments.

FLIGHT DATA PROCESSING FAILURE: Flight data processing performs the flight plan manipulations in ODAPS. Loss of this capability requires the use of manual flight data processing of flight strips.

FLIGHT PLAN CONFLICT: Upon receipt of a new flight plan, flight plan amendment, or pilot request, the controller will evaluate for potential conflicts by matching this flight against other flight data.

FLIGHT PLAN DEVIATION: If the current flight plan is in the system, the controller is alerted to route, altitude, and/or speed deviations by comparing progress reports against the clearance or computed data on the flight progress strips. Pilots are required to report significant changes in the true airspeed.

FUEL DUMPING, JETTISON: Pilots may desire to dump fuel or cargo under emergency or other appropriate circumstances.

GENERAL UNSAFE CONDITION: Advisories and safety alerts will be issued when, in the controller's judgment, a potential hazard will exist; an aircraft may encounter phenomena such as volcanic ash or other potential unsafe conditions.

HAZARDOUS CARGO: Military and civilian aircraft may carry dangerous or explosive materials. Special patterns and routings may be flown.

HIJACK: An aircraft that is under the duress of a hijacker or other terrorist action.

IMPENDING SPECIAL USE AIRSPACE CONFLICT: An aircraft that may fly into special use airspace.

INITIAL CONTACT: After the transfer of control from one sector/facility to another, if direct frequency contact is available, the pilot will initiate a call on the assigned air-to-ground frequency. The controller will acknowledge the transmission and, if appropriate, verify the reported attitude.

INTERCEPTOR FLIGHT: The military may desire to intercept aircraft for intruding into sensitive prohibited areas, Air Defense Identification Zones (ADIZs), or other sensitive airspace.

LAW ENFORCEMENT: Law enforcement agencies (Drug Enforcement Administration, Federal Bureau of Investigation, or other federal, state, or local agency) sometimes require ATC cooperation for surveillance and interception of aircraft.

MAJOR CIVIL EVENT: Occasionally, civil events generate extremely large volume of traffic in a local area. These events normally are well publicized in advance. It is necessary to prepare for such events so that the additional traffic can be accommodated. For instance, flow control measures and extra staffing may be invoked.

MEDICAL EMERGENCY: An aircraft passenger(s)/crew member(s) may be in distress with a medical emergency. The pilot may declare an emergency for reasons of passenger problems, incapacitation, disorientation, or other factors affecting crew members' abilities to perform their duties.

MEDICAL MISSION: Civilian flights involving medical evacuation and support are termed “Lifeguard” by ATC. Military flights involving medical evacuation also may be known as “Air Evacuation” or “Air Evac”. These flights are handled as expeditiously as possible.

MILITARY EXERCISES: Exercises are performed periodically as part of military readiness training and may involve large numbers of aircraft of varying intentions and performance, as well as user activation of special use airspace.

MILITARY OPERATION: These are operations or activities conducted by the military readiness that may require special handling by the oceanic controller.

MILITARY TRAINING ROUTE: Military Training Routes (MTRS) are designated routes for training in navigation and weapons delivery. Such routes exist and are published in DOD Flight Information Publications (FLIPs). The routes encompass many altitudes and involve high performance flight profiles.

NAVAID FAILURE: A failure in a navigation aid may impact landing at an airport (e.g., Wake, Guam) or may require the rerouting of aircraft.

NO RADIO (NORDO): Special problems arise when an aircraft has complete or partial communication problems. It is possible to have only a transmitter or receiver failure on the aircraft, permitting the pilot/crew to hear or to talk.

OCEANIC REQUEST: An aircraft requests an over-water release time and altitude.

ODAPS/HOST FAILURE: Although redundancy is built into most systems, it may be possible to experience a complete or partial loss of the computer system or of some critical component.

OPERATIONAL INCIDENT: An event or situation that requires ATC investigation (e.g., operational errors, aircraft accident).

OVERDUE AIRCRAFT: An aircraft that is more than thirty minutes overdue at a reporting point or does not respond to a communications attempt is considered overdue. Traffic may be delayed due to an overdue aircraft.

OVERDUE AIRCRAFT ALERT: The computer system can be configured to alert the controller when a position report is an adapted number of minutes overdue.

PILOT REQUEST: A pilot requests for a change to the flight plan, weather information, or relay of information.

PIREP: PIREPs are pilot reports of actual weather or atmospheric conditions. A PIREP may deal with winds aloft, turbulence, icing, thunderstorms, cloud cover, or other weather encounters valuable to the controller and other traffic in the area of influence.

POSITION RELIEF: Before assuming control responsibility at a sector, the controller will receive a detailed briefing, based on the position checklist, on the traffic situation and all special items affecting the sector.

POSITION REPORT RECEIPT: A pilot reports actual time and altitude over present fix, estimated time over next compulsory fix and ensuing fix, instead of (or in addition to) reporting departure time.

RADAR DATA UPDATE: The display of real-time flight information (processed radar data) on the PVD/Situation Display.

RUNWAY CLOSURE: Runway closures may require aircraft to be rerouted to alternate airports.

SAFI FLIGHT CHECK: Semi-Automatic Flight Inspection (SAFI) aircraft verify operations of NAVAIDs and require special handling so as not to delay their flight or change the programmed route.

SECTOR MANAGEMENT: Controllers review and develop a plan for sector operations.

SEQUENCING REQUIRED: The controller will calculate tentative sequences for any defined metering or flow restriction. Aircraft may be delayed by vectoring, speed reduction, changes in altitude, or holding to meet the required flow restriction.

SEVERE WEATHER: During periods of severe weather, consisting of conditions such as turbulence, icing, or storms, an aircraft may be predicted to encounter this phenomenon. The pilot may request, or the controller may initiate, a routing that will bypass the weather.

SIGMET/MIS: Significant Meteorological Information (SIGMET) or Meteorological Impact Statement (MIS) concern weather significant to aircraft. A MIS is a facility generated early notice of significant meteorological conditions. It originated from a PIREP or through ATC weather analysis by the Central Weather Support Unit or Weather Coordinator.

SPECIAL INTEREST FLIGHT: These are flights designated by USAF Air Defense Command as special interest flights. Controllers are made aware of these flights by the aircraft's callsign (e.g., Air Force One), by remarks on the flight plan, or through their supervisor.

SPECIAL USE AIRSPACE: Non-participatory aircraft may be routed so as to avoid these areas that are in use.

SUSPECT AIRCRAFT: These are aircraft suspected to be involved in unlawful activities (e.g. drug trafficking) and are identified by other governmental agencies. A procedure is used by the FAA to coordinate with other governmental agencies.

TRACK ADVISORY: A function within DOTS that compiles user requests (i.e., request route, altitude, and departure window) and issues oceanic gateway reservation for flights prior to filing of a flight plan.

TRACK GENERATION (DOTS): Flexible tracks are generated by Traffic Management using DOTS. Tracks are generated depending on forecast upper winds and aircraft performance (e.g., speed, climb profile at given weight).

TRAFFIC CONGESTION: Because of a peak in arrival or departure scheduling, reduced capacity at an airport or sector (due, for instance, to severe weather or runway maintenance), or heavy use of a particular route, traffic may become congested. New routings may be provided to prevent/relieve traffic congestion.

TRAFFIC MANAGEMENT: Traffic management is used to establish in-trail spacing of aircraft along a specified route leading into/out of a specific terminal area or geographic region. Other forms of flow constraint are Traffic Management Advisories provided by Traffic Management personnel, as well as air and ground holds and EDCTs.

TRAFFIC MANAGEMENT IMPACT: Traffic management measures may impact individual sectors. These conflicts must be resolved to promote orderly traffic flow.

TRANSFER OF CONROL: As an aircraft progresses through the system, its control will be transferred from one sector to the next sector or facility.

TRANSFER OF FLIGHT DATA: The transfer of flight fields 2-11 of the flight plan, as applicable. This also includes re-coordination of changes to any of these fields.

APPENDIX B.
Definitions of Task Verbs

Oceanic Controller J/TA Verb List

Standardized verbs used in the Oceanic Controller J/TA are listed below. Verbs that were added to the standardized verb set during the course of the 1993-1994 analyses are designated by an asterisk ("*").

ACCEPT: Respond to an originating controller or computer message indicating that the receiving controller assumes complete or partial responsibility for the request action, as appropriate.

ACKNOWLEDGE: Respond to an originating controller or computer message indicating that a call or message has been received, without further commitment as to what action will be taken.

ADJUST: Change or fine-tune a database, display, and/or control device (e.g., communication controls).

APPROVE: Respond favorably to a request as a person in authority, as in approving a clearance request.

ASSIGN: Designate or commit an item such that the computer can act on it, as in assigning a beacon code to an aircraft. Also, modify personnel responsibilities, as in designating a controller to take over a particular control position.

BRIEF: Give concise preparatory information concerning all sector or position activities and the operational situation to another person, as when turning over responsibility for a position.

BROADCAST: Transmit a recording or voice message to a general audience (as opposed to contacting a specific person) via radio.

CHECK: Examine a hardware item to establish its operational state or condition.

CHOOSE: Make a mental decision on a course of action or mentally pick one of several alternatives, as in choosing a desired flow sequence.

COMPARE: Relate one item to another to note relative similarities/differences, as in comparing a maintenance request to a maintenance schedule.

CONDUCT: Accomplish a series of related actions to achieve a definite goal, as in conducting a radio search for an aircraft.

CONTACT: Establish communications via radio or telephone with another person informing them of or discussing matters of concern, as in contacting a pilot to verify arrival intentions.

COORDINATE*: Arrange an action with another controller/sector/facility.

DECLARE: State with emphasis that a situation exists, as in declaring the existence of an emergency event.

DEFER*: Postpone an action until a later time - usually involves making some kind of notation or marking to serve as a reminder of the deferred status.

DELETE: Remove an information item (as in deleting the highlighting of an item on a display) or cancel a previous action (as in canceling a request for pilot position reports). This includes verbal actions as well as computer information.

DENY: Refuse to grant a request.

DETECT: Discern visually or aurally a newly occurring fact or item (not being watched for, i.e., the object of preceding attention), usually from a display, such as an alarm indicator or the action of an aircraft target symbol.

DETERMINE: Process information mentally to reach a decision about a situation, state of affairs, or the timing of an action.

DIRECT: Issue instructions or a directive to a controller directing that a certain action be taken.

DISCUSS: Exchange information/ideas on a particular topic with one or more others, typically not involving a resolution of differences.

EMPHASIZE: Provide prominence to an item on a display.

ENTER: Insert data, text, or a system message into the computer system or flight strips.

EVALUATE: Examine and judge the merits of an action or situation for a definite purpose and to reach a decision.

FLAG: Physically position a flight progress strip to serve as a reminder of future action needed. This serves as a manual equivalent of the automation action to emphasize a display item.

FORCE: Compel the display of something, as in forcing a Full Data Block or Flight Progress Strip that otherwise would not be presented.

FORMULATE: Mentally compose or prepare the content of a verbal or computer input message or plan, including all required or pertinent elements thereof, such as an advisory or clearance.

FORWARD: Send information verbally or electronically to another.

INFORM: Impart information to another person.

INHIBIT: Purposely and selectively disabling or preventing the occurrence of a machine function, as in inhibiting an alert function.

INITIATE: Begin an action or sequence.

ISSUE: Direct or communicate information as guidance or instructions to a pilot or communications intermediary (ARINC), as in issuing clearances, alerts, and advisories.

LOG OFF: Carry out a standard procedure to inform the system that one is no longer operating at a particular workstation.

LOG ON: Carry out a standard procedure to establish oneself as operating at a particular AAS control workstation.

NEGOTIATE: Confer in order to come to mutually acceptable agreement, as when negotiating with a pilot the technique to be used for accomplishing a flight delay.

OBSERVE: Take notice visually or watch attentively something or somewhere for an expected message, object, event, or occurrence of something. (A here-and-now observation, as opposed to "Perceive", a more evolutionary and summative type of process.)

OBTAIN: Acquire possession of an item, such as a flight progress strip, from another location, such as the flight strip printer.

OFFSET: Relocate the position of a data block in adapted increments of leader direction and/or length in relation to its associated target on the display.

PERCEIVE: Recognize an action or situation as it evolves over time in the absence of any specific indicator, such as an aircraft deviation from a tracking.

PROCESS*: Expedite, handle, manage, or otherwise take care of to initiate a series of steps or actions designed to produce an intended result. (Generally used as a higher-level verb description.)

PROJECT: Mentally extend or estimate the position/path of one or more mobile objects, such as aircraft or ground vehicles, in time and space.

QUERY: Inquire of another person or of a computer to gain information to remove doubt, as in querying a pilot about some element of a flight plan.

QUICK-LOOK: Temporarily produce for observation on one's own display the data or visual presentations that are currently available on another workstation.

READOUT: Acquire information from the computer on a specified item, such as a flight plan.

REASSOCIATE: Reposition a data block with its intended target when it has become disassociated from it.

RECALL: Summon or otherwise return personnel to their workstations.

RECEIVE: Acquire transmitted message by seeing or listening without necessarily taking action to express approval or receipt.

RECORD: Make a permanent or temporary notation of an event or observation, as in recording a weather observation.

REDIRECT: Retract transfer of control initiated to one controller and reinitiate it to another controller.

RELAY*: Pass information, such as clearances, through ARINC to another party (e.g., an aircraft's pilot).

REMOVE: Physically take an item away from something and place it elsewhere, such as removing a flight progress strip from its holder and putting it in a place for later retrieval and storage.

REPLAY: Electronically recreate a prior situation, such as a traffic situation, from a computer recording.

REQUEST: Ask another individual for information on, approval of, or receipt of something. Also, direct the system to provide a function such as route readout or beacon code.

RESEQUENCE: Rearrange the order of flight progress strips displayed.

RESOLVE*: Take steps necessary to accomplish one or more of the following: clarification of uncertainty, correction of discrepancy, and/or solution of problematic situation. (Generally used as a higher-level verb description.)

RESTORE: Bring back into being or remove an inhibit of a function or display of certain information.

RETRACT: Take back, negate, or withdraw the start of an action already begun.

RETRIEVE: Display for reconsideration a stored item, such as a previously stored trial plan.

REVERT: Go to the use of an alternate procedure, such as backup operations.

REVIEW: Look over and study conditions or situations, or reexamine something, as in reviewing the completeness of a flight plan. Also, appropriate for absorbing information to maintain a dynamic picture of present and/or future traffic, or the status of some equipment.

SEARCH: Scan/look over a display or area to locate something, such as a particular flight progress strip.

SELECT: Single out an item in preference to others on a display or panel, or pick one of several available systems or items, and inform the system of the choice.

SET UP: Adjust equipment for proper functioning.

SIGN OFF: Carry out a standard procedure to inform the system that one is no longer operating at a particular control workstation.

SIGN ON: Carry out a standard procedure to establish oneself as operating at a particular control workstation.

SKETCH: Draw or graphically depict on an electronic display, as in specifying new sector airspace other than adapted airspace.

SUGGEST: Offer another course of action for consideration when a request is not feasible, such as clearance alternatives to a clearance request.

SUPPRESS: Curtail the display of an item. Such display may be restored at some later time.

SWITCH: Change a given system condition to another available condition, as when switching communications to backup frequency.

TERMINATE: Bring an action to an end, as in terminating radar service to an aircraft.

UNFLAG: Physically reposition an item to its normal position to undo its effects as a reminder.

UPDATE: Change or modify text and/or data to make it more up-to-date, as in updating electronic reminder notes.

VALIDATE: Confirmation or approval of information or situation to determine its logical correctness.

VERIFY: Establish the truth of an activity or matter by confirming that a particular situation or matter is in the expected state. For example, verifying pilot compliance with a clearance or confirming the occurrence of specific computer actions during the transition stages.

APPENDIX C.
Most Frequently Performed Controller Tasks

Table C-1. ZAN Tasks Identified as Being Very Frequently Performed.

Task No.	Task Statement	Very Frequently
AOC.1.1.9	Receive request for clearance	V
AOC.1.1.10	"Review departure flight strip for accuracy (e.g., destination, requested altitude, route)"	V
AOC.1.1.11	Evaluate existing traffic and sector plan(s)	V
AOC.1.1.12	Formulate departure clearance	V
AOC.1.1.15	"Review flight strips for accuracy (e.g., destination, altitude/requested altitude, and route)"	V
AOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts	V
AOC.1.2.2	Enter warning indication on appropriate flight strip and defer action	V
AOC.1.2.4	Direct traffic flow to merge one or more westbound tracks of the NOPAC	V
AOC.1.2.8	"Relay clearance to pilot via appropriate means (e.g., direct VHF communications, ARINC, tower, base operations, pilot relay)"	V
AOC.1.2.9	Enter clearance data on flight progress strip(s)	V
AOC.1.2.10	Update flight plan in OCS per ZAN SOP	V
AOC.1.2.11	Receive acknowledgement of clearance	V
AOC.1.2.12	Receive pilot's reason why clearance is unacceptable	V
AOC.1.2.13	"Enter a line or ""X"" through the clearance information on the flight progress strip"	V
AOC.1.2.15	Initiate a communications search for aircraft	V
AOC.1.2.19	Initiate activation of flight plan in OCS	V
AOC.1.3.1	Receive latest boundary crossing time estimate and altitude from adjacent facility	V
AOC.1.3.2	Verify flight data shown on flight progress strip with adjacent facility controller	V
AOC.1.3.3	Record flight data on flight progress strip as received from adjacent facility controller	V
AOC.1.3.4	"Review flight's estimated time of arrival (ETA) at coordination fix, altitude, and routing for reasonableness"	V
AOC.1.3.5	Evaluate route and altitude for conflicts	V
AOC.1.3.6	Approve transfer	V
AOC.1.3.7	Enter flight strip marking to indicate flight plan status	V
AOC.1.3.8	Issue control instructions to transferring controller	V
AOC.1.3.10	Receive radar handoff or progress report from adjacent anchorage sector	V
AOC.1.3.11	Record flight data on flight progress strip	V
AOC.1.4.1	Coordinate with adjacent sector/facility in control of flight(s) to resolve detected conflicts	V
AOC.1.4.2	Evaluate alternate solutions and provide viable solution to adjacent sector/facility for selection and coordination with pilot	V
AOC.1.5.1	Search flight strips/radar to identify flights that are ready for coordination of transfer of control with the adjacent sector/facility	V
AOC.1.5.2	Contact adjacent sector/facility a parameter number of minutes prior to aircraft's estimated time over transfer of control point	V

AOC.1.5.3	Issue contact instructions to affected aircraft	V
AOC.1.5.4	Initiate radar handoff by entering the receiving sector ID and selecting aircraft on PVD to be handed off	V
AOC.1.5.5	Observe PVD for handoff acceptance (flashing datablock)	V
AOC.1.6.4	"Forward A/C ID, transfer of control point, latest estimate to transfer of control point, coordinated altitude, mach number (if appropriate), control information/remarks"	V
AOC.1.7.1	"Forward A/C callsign, fix or lat/long, control time at that point, pilot's estimate (if necessary), assigned altitude, assigned mach number, remarks"	V
AOC.1.8.1	Coordinate changes with receiving controller	V
AOC.1.8.2	Deny pilot's requested changes	V
AOC.1.11.5	Determine that control of an aircraft in an adjacent sector/facility is required	V
AOC.1.11.6	Issue alternate instructions to adjacent sector/facility	V
AOC.1.12.1	Enter marking on flight strip to indicate coordination with adjacent facility has been accomplished	V
AOC.2.1.1	"Receive position report from pilot, or relayed by ARINC via OCS or by teletype message"	V
AOC.2.1.3	"Determine if information in position report is valid and reasonable, by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA"	V
AOC.2.1.4	Determine if controller's estimate of transit times between fixes are more reasonable than pilot's estimates	V
AOC.2.1.8	Acknowledge receipt of position report via OCS	V
AOC.2.2.1	Update the previous control time	V
AOC.2.2.2	Update control time at subsequent fixes	V
AOC.2.2.3	Enter controller's and/or pilot's time estimate/progress report marking on flight strip	V
AOC.2.3.2	Contact ARINC to confirm information via OCS or land-line	V
AOC.2.3.3	Receive verification of progress report	V
AOC.2.3.5	Contact pilot to confirm current information	V
AOC.2.4.1	Review the current and expected times and altitudes of all aircraft at each fix to see if a potential conflict exists relative to the applicable separation standards	V
AOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any other aircraft"	V
AOC.2.4.3	Determine that immediate action is required	V
AOC.2.4.4	Determine options that will resolve the conflict	V
AOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft	V
NOC.2.4.6	"Select an option which is free of immediate conflicts, is compatible with the sector traffic plan, and considers user preferences"	V
AOC.2.4.7	Issue alternative(s) to transferring controller	V
AOC.2.4.8	Enter amended flight data on flight strip	V
AOC.2.4.9	Enter clearance amendment into computer as amendment message	V
AOC.2.4.10	Receive acknowledgement from aircraft of new clearance	V
AOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable	V
AOC.2.4.12	Defer resolution of the predicted conflict	V
AOC.2.4.13	"Enter red ""W"" on flight progress strips to denote conflict"	V
AOC.2.4.14	Evaluate each option by looking at radar display of each aircraft	V
AOC.2.6.1	Review remarks section of the position report for additional information	V
AOC.2.6.2	Review aircraft measurements of wind speed and direction to take into account when estimating time at fixes (when available)	V
AOC.2.7.1	Compare the new position report information with plan for traffic in the sector	V
AOC.2.7.2	Resequence flight strips	V
AOC.2.7.3	Remove old flight strips	V

AOC.3.1.1	"Receive pilot change request via radio, ARINC land-lines, or OCS"	V
AOC.3.1.3	Defer response to a change request	V
AOC.3.1.4	"Issue advisory to pilot ""Standby"""	V
AOC.3.1.5	"Issue advisory to pilot ""Unable, request on file"""	V
AOC.3.1.6	Review flight plan change request	V
AOC.3.1.7	Enter flight plan change request on flight strip(s)	V
AOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft or airspace	V
AOC.3.1.11	Evaluate change request based on sector traffic plan(s)	V
AOC.3.1.12	Evaluate change request based on altitude restrictions for direction of travel	V
AOC.3.1.13	Evaluate change request based on potential for request accommodation/coordination before transfer to next sector/facility	V
AOC.3.1.14	Evaluate change request based on knowledge about what the next sector/facility is likely to accept	V
AOC.3.1.15	Evaluate change request for conflicts based on flight strips and PVD information	V
AOC.3.1.18	Determine whether change request is acceptable	V
AOC.3.2.2	Flag current flight strip in canted position in strip bay as a reminder for further action needed on aircraft	V
AOC.3.2.6	"Receive pilot confirmation of clearance via pilot, ARINC land-lines, or OCS"	V
AOC.3.2.7	Request pilot report when arriving at new altitude	V
AOC.3.2.8	Request that pilot report when leaving current altitude	V
AOC.3.2.11	Receive pilot report of altitude leaving or reaching new altitude	V
AOC.3.2.12	Unflag by uncanting flight strip following pilot report	V
AOC.3.2.13	Enter marking on control strip when pilot reports altitude leaving or reaching new altitude	V
AOC.3.2.14	Request pilot report of current altitude	V
AOC.3.2.15	"Coordinate change with subsequent facility (e.g., Oakland, Tokyo) before issuing clearance if flight is within 30 minutes of FIR boundary"	V
AOC.3.2.16	Coordinate change with subsequent sector before issuing clearance when flight is within 15 minutes of sector boundary	V
AOC.3.2.17	Coordinate change with subsequent sector before issuing clearance when flight is within 5 minutes of sector boundary	V
AOC.3.2.18	Enter flight strip marking on first and subsequent strips for non-altitude flight plan change requests	V
AOC.3.2.19	Observe Mode-C (altitude) update on PVD	V
AOC.3.2.20	Enter altitude change into PVD or OCS	V
AOC.3.2.21	Enter non-altitude change into OCS	V
AOC.3.3.4	Inform the pilot by radio or through ARINC that flight plan change request is denied	V
AOC.3.3.19	Unflag to uncant the flight strip	V
AOC.3.4.1	Formulate search for acceptable flight plan change	V
AOC.3.4.3	Evaluate alternative changes with respect to potential conflicts with other aircraft or airspace	V
AOC.3.4.4	Evaluate alternative changes with respect to sector traffic plan(s)	V
AOC.3.4.5	Evaluate alternative changes with respect to direction-of-travel altitude restrictions	V
AOC.3.4.6	Evaluate alternative changes with respect to potential request accommodation/coordination	V
AOC.3.4.7	Evaluate alternative changes with respect to knowledge of what next sector will accept	V
AOC.3.4.9	Flag selected flight strip in changed position in strip bay for potential flight plan change	V

AOC.4.1.2	Review information recorded on flight strips	V
AOC.4.1.3	Verify reasonableness of each strip	V
AOC.4.1.4	Verify accuracy of data	V
AOC.4.1.5	Update the strip marking	V
AOC.4.2.1	"Review flight strip bays, one fix posting area at a time"	V
AOC.4.2.2	Review information recorded on flight strips	V
AOC.4.2.4	"Compare time, altitude, and route of flight to see if a potential conflict exists"	V
AOC.4.2.5	Review traffic situation on PVD	V
AOC.4.3.1	"Review flight strip bays, one fix posting area at a time"	V
AOC.4.3.2	Review information recorded on flight strips	V
AOC.4.3.3	Verify reasonableness of data on each strip	V
AOC.4.3.4	Compare current time and estimated time at fix	V
AOC.4.3.8	Contact controllers in adjacent sectors to see if a position report was received for the aircraft	V
AOC.4.3.9	Contact ARINC by OCS or land-line	V
AOC.4.3.10	Request a position report from ARINC	V
AOC.4.3.11	Receive position report from ARINC	V
AOC.4.3.14	Contact aircraft by radio	V
AOC.4.3.15	Request ARINC to advise the pilot to contact ZAN via radio	V
AOC.4.4.1	"Review flight strip bays, one fix posting area at a time"	V
AOC.4.4.2	Review information recorded on flight strips	V
AOC.4.4.3	Determine options for traffic in the sector	V
AOC.4.4.4	Formulate a plan for traffic in the sector	V
AOC.4.4.5	Evaluate the plan for traffic in the sector	V
AOC.4.4.6	Update the plan for traffic in the sector	V
AOC.4.4.7	Review factors such as management of traffic flows for merging or crossing routes	V
AOC.4.4.8	Review factors such as current or anticipated pilot requests for route or altitude changes	V
AOC.4.4.9	Review factors such as contingencies	V
AOC.4.4.11	Update flight strips to reflect current information	V
AOC.4.5.1	Contact other controller/ARINC	V
AOC.4.5.2	Conduct communication of necessary information	V
AOC.4.6.1	Resequence flight strips	V
AOC.4.6.2	Remove old flight strips	V
AOC.4.8.1	"Verify aircraft are at same flight level, or aircraft are climbing/descending to same flight level, or aircraft is climbing/descending through another A/C's altitude"	V
AOC.4.8.3	Issue appropriate Mach number(s) to first aircraft	V
AOC.4.8.4	Receive first aircraft's acknowledgement of receipt of clearance	V
AOC.4.8.5	Issue appropriate Mach number(s) to second aircraft	V
AOC.4.8.6	Verify aircraft follow the same track or continuously diverging track	V
AOC.4.8.7	Verify that radar is used to ensure that the appropriate time interval will exist at the common point	V
AOC.4.8.8	Verify radar is used such that appropriate time interval will exist at a significant point on each track from which tracks continuously diverge	V
AOC.4.8.13	Issue sufficient longitudinal separation to ensure appropriate minima will exist until another form of separation is achieved	V
AOC.4.8.14	Receive second aircraft's acknowledgement of receipt of clearance	V
AOC.4.8.15	Verify via position reports and control estimates that the appropriate time interval exists over the common point	V
AOC.4.8.16	Verify via pilot estimates that the appropriate time interval exists at the point from which tracks continuously diverge	V

AOC.4.10.1	Brief relieving controller on sector operations using position relief briefing checklist	V
AOC.4.10.2	Sign off at position LOG	V
AOC.4.10.3	Sign on at position LOG	V
AOC.4.10.4	Verify completeness of relief briefing receipt	V
AOC.4.11.1	Review system status to determine currency or updates	V
AOC.4.11.2	Review current and projected traffic or weather	V
AOC.4.11.3	Review flight progress strips and displayed lists for correlation	V
AOC.4.11.4	"Receive controller relief briefing using briefing checklist, and notes (if applicable) to assure completeness of briefing coverage"	V
AOC.4.11.6	Determine if ready to accept control responsibility	V
AOC.4.11.8	Verify that all required display parameters are properly set	V
AOC.4.11.9	"Check displays or equipment for proper configuration usability, and satisfactory status"	V
AOC.4.11.10	Adjust displays or equipment to personal preference	V
AOC.7.3.1	Receive SIGMET/MIS from area supervisor or directly from CWSU/weather coordinator specialist	V
AOC.7.3.3	Determine location of the phenomenon being described	V
AOC.7.3.5	Broadcast SIGMET/MIS to all aircraft within one hour flying time and/or 150 nautical mile laterally from the affected area	V
AOC.7.3.8	Request a pilot report (PIREP) from each aircraft transiting the affected area	V
AOC.7.3.9	"Forward PIREPS to the center weather service unit, or the weather coordinator"	V
AOC.7.3.10	Receive significant weather PIREP	V
AOC.7.3.11	Forward significant weather PIREP to any affected flights within one hour flying time of the position of the PIREP until a SIGMET can be issued	V

Table C-2. ZNY Tasks Identified as Being Very Frequently Performed.

Task No.	Task Statement	Very Frequent
NOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts	V
NOC.1.2.2	Enter warning indication on appropriate flight strip and defer action	V
NOC.1.2.3	"Receive oceanic entry point, time, and altitude"	V
NOC.1.2.8	"Relay clearance to pilot via appropriate means (e.g., ARINC, adjacent sector/facility controller, pilot relay)"	V
NOC.1.2.9	Enter clearance data on flight progress strip(s)	V
NOC.1.2.10	Update flight plan database	V
NOC.1.2.11	Receive acknowledgment of clearance	V
NOC.1.2.17	Initiate activation of flight plan in ODAPS	V
NOC.1.2.18	Initiate activation of flight plan in host	V
NOC.1.3.1	Receive latest boundary crossing time estimate and altitude from adjacent facility	V
NOC.1.3.2	Verify flight data shown on flight progress strip with adjacent facility controller	V
NOC.1.3.3	Record flight data on flight progress strip as received from adjacent facility controller	V
NOC.1.3.4	"Review flight's estimated time of arrival (ETA) at coordination fix, altitude, and routing for reasonableness"	V
NOC.1.3.5	Evaluate route and altitude for conflicts	V
NOC.1.3.6	Approve transfer	V
NOC.1.3.8	Issue control instructions to transferring controller	V
NOC.1.3.9	Enter red underline of altitude to indicate WAFDOF	V
NOC.1.4.1	Coordinate with adjacent controller to resolve detected conflicts	V
NOC.1.4.2	Negotiate viable solution with adjacent controller	V
NOC.1.4.4	Determine alternative solution	V
NOC.1.5.1	Search flight strips to identify flights that are ready for coordination of flight plan information with the adjacent sector/facility	V
NOC.1.5.2	Contact adjacent sector/facility a parameter number of minutes prior to aircraft's estimated boundary time	V
NOC.1.6.4	"Forward aircraft identification, boundary point and estimate, coordinated altitude, coordinated speed, information/remarks"	V
NOC.1.6.5	Forward aircraft's flight plan	V
NOC.1.6.6	Receive alternative flight levels from adjacent facility	V
NOC.1.6.7	Receive alternative route changes from adjacent facility	V
NOC.1.6.8	Receive alternative boundary crossing time restrictions from adjacent facility	V
NOC.1.6.9	Negotiate alternatives that do not cause a near-term conflict with sector's traffic	V
NOC.1.6.10	Relay alternatives to pilot through ARINC	V
NOC.1.6.11	Receive response of preferred alternative from pilot	V
NOC.1.6.17	Conduct verbal verification of transfer	V
NOC.1.6.22	Receive alternative speed restrictions from adjacent facility	V
NOC.1.6.23	Coordinated clearance with receiving controller	V
NOC.1.7.1	"Forward A/C callsign, fix or lat/long, control time at that point, pilot's estimate (if necessary), assigned altitude, assigned MACH number, remarks"	V
NOC.1.8.1	Coordinate changes with receiving controller	V
NOC.1.8.2	Deny pilot's requested changes	V
NOC.1.11.5	Determine that control of an aircraft in an adjacent sector/facility is required	V
NOC.1.11.6	Issue alternate instructions to adjacent sector/facility	V
NOC.1.12.1	Enter marking on flight strip to indicate coordination with adjacent sector/facility controller has been accomplished	V

NOC.2.1.2	Remove latest position report from printer	V
NOC.2.1.5	"Receive position report from pilot, relayed by ARINC on TP display"	V
NOC.2.1.6	Review ODAPS TP for ODAPS discrepancy reports	V
NOC.2.1.7	"Determine if the information in the discrepancy report is valid and reasonable by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA "	V
NOC.2.2.1	Update the previous control time	V
NOC.2.2.2	Update control time at subsequent fixes	V
NOC.2.2.3	Enter center's time estimate marking on flight strip	V
NOC.2.2.4	Observe acceptance of progress report on ODAPS TP	V
NOC.2.2.5	Enter progress report into ODAPS flight plan database	V
NOC.2.2.6	Review ODAPS to help maintain mental picture of traffic for monitoring and planning	V
NOC.2.3.1	Contact ARINC by telephone to confirm information	V
NOC.2.3.3	Receive verification of position report	V
NOC.2.4.1	Review the current and expected times and altitudes of other aircraft at each fix to see if a potential conflict exists	V
NOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any other aircraft"	V
NOC.2.4.3	Determine that immediate action is required	V
NOC.2.4.4	Determine options that will resolve the conflict	V
NOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft	V
NOC.2.4.6	"Select an option which is free of immediate conflicts, is compatible with the sector traffic plan, and considers user preferences"	V
NOC.2.4.7	Issue alternative(s) to transferring controller	V
NOC.2.4.8	Enter amended flight data on flight strip	V
NOC.2.4.9	Enter clearance amendment into ODAPS as amendment message	V
NOC.2.4.10	Receive acknowledgment from aircraft of new clearance	V
NOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable	V
NOC.2.4.12	Defer resolution to the problem if conflict will occur in the future	V
NOC.2.4.13	"Enter red ""W"" on flight progress strips to denote conflict"	V
NOC.2.6.1	Review remarks section of the position report for additional information	V
NOC.2.6.3	"Relay a SIGMET regarding icing, turbulence, or severe weather conditions"	V
NOC.2.7	Conduct board management	
NOC.2.7.2	Resequence flight strips	V
NOC.2.7.3	Remove old flight strips	V
NOC.3.1.1	Receive pilot change request via ARINC printer/two-way communication link/ODAPS	V
NOC.3.1.3	Defer response to a change request	V
NOC.3.1.5	"Issue advisory to pilot ""Unable, request on file"""	V
NOC.3.1.6	Review flight plan change request	V
NOC.3.1.7	Enter flight plan change request on flight strip(s)	V
NOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft	V
NOC.3.1.11	Evaluate change request based on plans for dealing with other aircraft in the future	V
NOC.3.1.12	Evaluate change request based on altitude restrictions for direction of travel	V
NOC.3.1.13	Evaluate change request based on potential for intervention with the subject or other aircraft before transfer to next facility	V
NOC.3.1.14	Evaluate change request based on knowledge about what the next sector/facility is likely to accept	V
NOC.3.1.15	Evaluate change request for conflicts based on knowledge of aircraft positions and reference to flight strips	V
NOC.3.1.16	Evaluate change request using a grease pencil and sector map to analyze change	V

	request	
NOC.3.1.17	Evaluate sector ODAPS TP to visually determine acceptability of flight plan change	V
NOC.3.1.18	Determine whether change request is acceptable	V
NOC.3.2.2	Flag current flight strip in canted position in strip bay as a reminder for further action needed on aircraft	V
NOC.3.2.3	Coordinate change with subsequent New York sector before granting clearance when flight is within an hour of sector boundary	V
NOC.3.2.5	Coordinate change with Caribbean sector(s) before issuing clearance or approving change	V
NOC.3.2.6	Receive pilot confirmation of clearance through ARINC	V
NOC.3.2.11	Receive pilot report of new altitude	V
NOC.3.2.12	Unflag by flattening flight strip following pilot report	V
NOC.3.2.13	Enter marking on appropriate flight strip when pilot reports arriving at new altitude	V
NOC.3.2.14	Contact ARINC by telephone to solicit pilot report of current altitude	V
NOC.3.3.4	Relay through ARINC that flight plan change clearance is denied	V
NOC.3.3.19	Unflag to uncant flight strip	V
NOC.3.3.20	Delete requested flight plan change	V
NOC.3.4.1	Formulate search for acceptable flight plan change	V
NOC.3.4.3	Evaluate candidate alternative changes with respect to potential conflicts with other aircraft	V
NOC.3.4.4	Evaluate candidate alternative changes with respect to plans for dealing with other aircraft	V
NOC.3.4.6	Evaluate candidate alternative changes with respect to potential for intervention before crossing sector boundary	V
NOC.3.4.7	Evaluate candidate alternative changes with respect to knowledge of what next sector will accept	V
NOC.3.4.8	Receive denial of flight plan change from subsequent sector/facility	V
NOC.4.1.2	Review information recorded on flight strips	V
NOC.4.1.3	Verify reasonableness of data on each strip	V
NOC.4.1.4	Verify accuracy of data	V
NOC.4.1.5	Update the strip marking	V
NOC.4.2.2	Review information recorded on flight strips	V
NOC.4.2.4	"Compare time, altitude, speed, and route of flight at each fix to see if a potential conflict exists"	V
NOC.4.3.2	Review information recorded on flight strips	V
NOC.4.3.4	Compare center estimated time and pilot estimated time at fix	V
NOC.4.3.5	Review ODAPS display of tabular list entry of overdue position reports	V
NOC.4.3.6	Review TP for message that flight's expected progress time is more than 10 minutes late	V
NOC.4.3.7	Check ARINC printer log to make sure a position report was not missed	V
NOC.4.3.8	Contact controllers in adjacent sectors to see if a position report was received for the aircraft	V
NOC.4.3.9	Contact ARINC by telephone to request a position report	V
NOC.4.3.11	Receive position report from ARINC	V
NOC.4.3.12	Initiate a communications search for contact with aircraft	V
NOC.4.4.2	Review information recorded on flight strips	V
NOC.4.4.3	Determine options for traffic in the sector	V
NOC.4.4.4	Formulate a plan for traffic in the sector	V
NOC.4.4.5	Evaluate the plan for traffic in the sector	V
NOC.4.4.7	Review factors such as management of traffic flows for merging or crossing routes	V

NOC.4.4.8	Review factors such as current or anticipated pilot requests for route or altitude changes	V
NOC.4.4.9	Review factors such as contingencies	V
NOC.4.5.1	Contact other controller/ARINC	V
NOC.4.5.2	Conduct communication of necessary information	V
NOC.4.6.1	Resequence flight strips	V
NOC.4.6.2	Remove old flight strips	V
NOC.4.8.1	"Verify aircraft are at same flight level, or aircraft are climbing/descending to same flight level, or aircraft is climbing/descending through another A/C's altitude"	V
NOC.4.8.2	Verify aircraft have not been assigned a block altitude	V
NOC.4.8.3	Issue appropriate Mach number(s) to first aircraft	V
NOC.4.8.4	Receive first aircraft's acknowledgment of receipt of clearance	V
NOC.4.8.5	Issue appropriate Mach number(s) to second aircraft	V
NOC.4.8.6	Verify aircraft follow the same track or continuously diverging track	V
NOC.4.8.7	Verify that radar is used to ensure that the appropriate time interval will exist at the common point	V
NOC.4.8.8	Verify radar is used such that appropriate time interval will exist at a significant point on each track from which tracks continuously diverge	V
NOC.4.8.13	Issue sufficient longitudinal separation to ensure appropriate minima will exist until another form of separation is achieved	V
NOC.4.8.14	Receive second aircraft's acknowledgment of receipt of clearance	V
NOC.4.10.1	Brief relieving controller on sector operations	V
NOC.4.10.2	Sign off at position log	V
NOC.4.10.3	Sign on at position log	V
NOC.4.10.4	Verify completeness of relief briefing receipt	V
NOC.4.11.1	Review system status to determine currency or updates	V
NOC.4.11.2	Review current and projected traffic load and weather	V
NOC.4.11.3	Review flight progress strips and displayed lists for correlation	V
NOC.4.11.4	Receive controller relief briefing using briefing checklist or notes to assure completeness of briefing coverage	V
NOC.4.11.6	Determine if ready to accept control responsibility	V
NOC.4.11.7	Sign on at position log	V
NOC.4.11.8	Verify that all required display parameters are properly set	V
NOC.4.11.9	"Check displays or equipment for proper configuration usability, and satisfactory status"	V
NOC.4.11.10	Adjust displays or equipment to personal preference	V

Table C-3. ZOA Tasks Identified as Being Very Frequently Performed.

Task No.	Task Statement	Very Frequent
OOC.1.1.9	Receive request for clearance	V
OOC.1.1.10	"Review departure flight strip for accuracy (e.g., destination, requested altitude, route)"	V
OOC.1.1.11	Evaluate existing traffic and sector plan(s)	V
OOC.1.1.12	Formulate departure clearance	V
OOC.1.1.14	"Relay clearance to pilot via appropriate means (e.g., ARINC, tower, base operations, pilot relay)"	V
OOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts	V
OOC.1.2.2	Enter warning indication on appropriate flight strip and defer action	V
OOC.1.2.3	"Receive oceanic entry point, time, and altitude"	V
OOC.1.2.7	Check situation display to verify clearance	V
OOC.1.2.8	"Relay clearance to pilot via appropriate means (e.g., ARINC, tower, base operations, pilot relay)"	V
OOC.1.2.9	Enter clearance data on flight progress strip(s)	V
OOC.1.2.11	Receive acknowledgment of clearance	V
OOC.1.2.17	Initiate activation of flight plan in ODAPS	V
OOC.1.3.1	Receive latest boundary crossing time estimate and altitude from adjacent facility	V
OOC.1.3.2	Verify flight data shown on flight progress strip with adjacent facility controller	V
OOC.1.3.3	Record flight data on flight progress strip as received from adjacent facility controller	V
OOC.1.3.4	"Review flight's estimated time of arrival (ETA) at coordination fix, altitude, and routing for reasonableness"	V
OOC.1.3.5	Evaluate route and altitude for conflicts	V
OOC.1.3.6	Approve transfer	V
OOC.1.4.1	Coordinate with adjacent facility in control of flight(s) to resolve detected conflicts	V
OOC.1.4.2	Evaluate alternate solutions and provide viable solution to adjacent facility for selection and coordination with pilot	V
OOC.1.4.3	Coordinate resolution of conflict	V
OOC.1.5.1	Search to identify flights that are ready for coordination of transfer of control with the adjacent facility	V
OOC.1.5.2	Contact adjacent facility/sector a parameter number of minutes prior to aircraft's estimated time over transfer of control point	V
OOC.1.6.4	"Forward aircraft identification, transfer of control point, latest estimate to transfer of control point, coordinated altitude, MACH number, control information/remarks"	V
OOC.1.6.6	Receive alternative flight levels from adjacent facility/sector	V
OOC.1.6.9	Select alternatives that do not cause a near-term conflict with sector's traffic	V
OOC.1.6.10	Relay alternatives to pilot	V
OOC.1.6.11	Receive response of preferred alternative from pilot	V
OOC.1.6.14	"Contact adjacent facility to pass transfer of control through direct-line voice communication, commercial-line voice, teletype, or autovon prior to coordination time"	V
OOC.1.6.15	Verify control information pertinent to adjacent facilities/sectors is accurate	V

OOC.1.6.16	Verify black coordination indicator on appropriate flight progress strip indicating computer interface between ODAPS and adjacent ATC systems	V
OOC.1.6.17	Conduct verbal verification of transfer	V
OOC.1.7.1	"Forward A/C callsign, fix or lat/long, control time at that point, pilot's estimate (if necessary), assigned altitude, assigned MACH number, remarks"	V
OOC.1.7.2	"Forward A/C callsign, fix or lat/long, control time, pilot's estimate (if necessary) for last reporting point within transferring controller's sector, assigned altitude, assigned MACH number, remarks"	V
OOC.1.7.4	"Forward A/C callsign, fix or lat/long, control time, pilot's estimated time (if necessary) for first reporting point within receiving sector airspace, assigned altitude, assigned MACH, remarks"	V
OOC.1.8.1	Coordinate changes with receiving controller	V
OOC.1.9.1	Coordinate WAFDOF with receiving controller early enough to allow time to establish A/C at an appropriate altitude for direction of flight should approval be denied	V
OOC.1.9.2	Receive approval from receiving controller of wrong altitude for direction of flight	V
OOC.1.9.3	Enter WAFDOF approval on flight progress strip	V
OOC.1.10.1	Forward flight information to adjacent facility or sector	V
OOC.1.12.1	Enter marking on flight strip to indicate coordination with adjacent facility has been accomplished	V
OOC.2.1.4	Determine if controller's estimate of transit times between fixes are more reasonable than pilot's estimates	V
OOC.2.1.5	Receive position report from ARINC or CPDLC	V
OOC.2.1.6	Review ODAPS FDIO for ODAPS discrepancy reports	V
OOC.2.2.1	Update the previous control time	V
OOC.2.2.2	Update control time at subsequent fixes	V
OOC.2.2.4	Observe acceptance of progress report on ODAPS FDIO	V
OOC.2.2.5	Enter progress report into ODAPS flight plan database	V
OOC.2.2.6	Review ISD to help maintain mental picture of traffic for monitoring and planning	V
OOC.2.3.1	Contact Pilot to confirm information	V
OOC.2.3.3	Receive verification of position report	V
OOC.2.4.1	Review the current and expected times and altitudes of other aircraft at each fix to see if a potential conflict exists	V
OOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any other aircraft"	V
OOC.2.4.3	Determine that immediate action is required	V
OOC.2.4.4	Determine options that will resolve the conflict	V
OOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft	V
OOC.2.4.6	Select an option which is free of immediate conflicts and is compatible with the sector traffic plan	V
OOC.2.4.7	Issue alternative(s) to transferring controller	V
OOC.2.4.8	Enter amended flight data on flight strip	V
OOC.2.4.10	Receive acknowledgment from aircraft of new clearance	V
OOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable	V
OOC.2.4.12	Defer resolution to the problem if conflict will occur later in the	V

	future	
OOC.2.4.13	"Enter red ""W"" on flight progress strips to denote conflict"	V
OOC.2.5.1	Review user preferences when selecting an option to resolve a conflict situation	V
OOC.2.6.1	Review remarks section of the position report for additional information	V
OOC.2.7.1	Compare mentally the new position report information with plan for traffic in the sector	V
OOC.2.7.2	Resequence flight strips	V
OOC.2.7.3	Remove old flight strips	V
OOC.3.1.1	Receive pilot change request	V
OOC.3.1.6	Review flight plan change request	V
OOC.3.1.7	Enter flight strip marking corresponding to aircraft's next and/or current mandatory reporting point with request	V
OOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft	V
OOC.3.1.11	Evaluate change request based on plans for dealing with other aircraft in the future	V
OOC.3.1.12	Evaluate change request based on altitude restrictions for direction of travel	V
OOC.3.1.13	Evaluate change request based on conflict probe response	V
OOC.3.1.14	Evaluate change request based on knowledge about what the next sector/facility is likely to accept	V
OOC.3.1.16	Evaluate change request using a grease pencil and sector map to analyze change request	V
OOC.3.1.17	Evaluate sector ODAPS ISD to visually determine acceptability of flight plan change	V
OOC.3.1.18	Determine whether change request is acceptable	V
OOC.3.2.1	Enter flight plan change request marking on current flight strip	V
OOC.3.2.2	Flag current flight strip in canted position in strip bay as a reminder for further action needed on aircraft	V
OOC.3.2.6	Receive pilot confirmation of clearance through ARINC	V
OOC.3.2.7	"Request pilot report when arriving at new altitude, route, or speed"	V
OOC.3.2.8	Request that pilot report when leaving current altitude	V
OOC.3.2.9	Receive pilot report when leaving current altitude at standard rate of climb	V
OOC.3.2.12	Unflag by flattening flight strip following pilot report	V
OOC.3.2.13	Enter marking on first and subsequent flight strips when pilot reports arriving at new altitude	V
OOC.3.3.1	Determine flight plan change is not acceptable	V
OOC.3.3.5	Formulate candidate alternative changes	V
OOC.3.3.6	Evaluate candidate alternative changes with respect to potential conflicts with other aircraft	V
OOC.3.3.7	Evaluate candidate alternative changes with respect to plans for dealing with other aircraft	V
OOC.3.3.8	Evaluate candidate alternative changes with respect to direction-of-travel restrictions on altitudes	V
OOC.3.3.10	Evaluate candidate alternative changes with respect to knowledge of what next sector will accept	V
OOC.3.4.1	Formulate search for acceptable flight plan change	V
OOC.4.1.1	"Review flight strip bays, one fix posting area at a time"	V
OOC.4.1.2	Review information recorded on flight strips	V

OOC.4.1.3	Verify reasonableness of each strip	V
OOC.4.1.4	Verify data source	V
OOC.4.1.5	Update the strip marking	V
OOC.4.2.1	"Review flight strip bays, one fix posting area at a time"	V
OOC.4.2.2	Review information recorded on flight strips	V
OOC.4.2.3	Verify reasonableness of data on each strip	V
OOC.4.2.4	"Compare time, altitude, and route of flight at each fix to see if a potential conflict exists"	V
OOC.4.3.1	"Review flight strip bays, one fix posting area at a time"	V
OOC.4.3.2	Review information recorded on flight strips	V
OOC.4.3.3	Verify reasonableness of data on each strip	V
OOC.4.3.4	Compare current time and estimated time at fix	V
OOC.4.3.5	Review ODAPS PVD display of tabular list entry of overdue position reports	V
OOC.4.3.6	Review ODL for message that flight's expected progress time is more than 10 minutes late	V
OOC.4.3.10	Request a position report	V
OOC.4.3.11	Receive position report	V
OOC.4.4.1	"Review flight strip bays, one fix posting area at a time"	V
OOC.4.4.2	Review information recorded on flight strips	V
OOC.4.4.3	Determine options for traffic in the sector	V
OOC.4.4.4	Formulate a plan for traffic in the sector	V
OOC.4.4.5	Evaluate the plan for traffic in the sector	V
OOC.4.4.6	Update the plan for traffic in the sector	V
OOC.4.5.1	Contact other controller/ARINC	V
OOC.4.5.2	Conduct communication of necessary information	V
OOC.4.6.1	Resequence flight strips	V
OOC.4.6.2	Remove old flight strips	V
OOC.4.8.1	"Verify aircraft are at same flight level, or aircraft are climbing/descending to same flight level, or aircraft is climbing/descending through another A/C's altitude"	V
OOC.4.8.2	Verify aircraft have not been assigned a block altitude	V
OOC.4.8.3	Issue a MACH number to aircraft exiting FIR or when necessary	V
OOC.4.8.6	Verify aircraft follow the same track or continuously diverging track	V
OOC.4.8.13	Verify sufficient longitudinal separation to ensure appropriate minima will exist until another form of separation is achieved	V
OOC.4.10.1	Brief relieving controller on sector operations	V
OOC.4.10.2	Sign off at position	V
OOC.4.10.3	Sign on at position	V
OOC.4.10.4	Verify completeness of relief briefing receipt	V
OOC.4.10.5	Conduct post-brief observation	V
OOC.4.11.1	Review Equipment Status	V
OOC.4.11.2	Review current and projected traffic or weather	V
OOC.4.11.3	Review flight progress strips and displayed lists for correlation	V
OOC.4.11.4	Receive controller relief briefing	V
OOC.4.11.5	Review briefing checklist or notes to assure completeness of briefing coverage	V
OOC.4.11.6	Determine if ready to accept control responsibility	V
OOC.4.11.7	Sign on at position	V
OOC.4.11.8	Verify that all required display parameters are properly set	V
OOC.4.11.9	Check displays or equipment for proper configuration usability	V

	and satisfactory status	
OOC.4.11.10	Adjust displays or equipment to personal preference	V
OOC.7.2.1	"Receive notice from pilot that weather avoidance deviation is required, including direction of course deviation and anticipated number of miles deviation requires"	V
OOC.7.2.5	Approve pilot's request to deviate around weather	V
OOC.7.2.6	"Request that pilot report ""Established back on course"""	V
OOC.7.2.7	"Receive request from pilot for permission for weather avoidance deviation, including direction of course deviation, anticipated number of miles required"	V
OOC.7.3.1	Receive Oceanic SIGMET	V
OOC.7.3.2	Broadcast SIGMETs to all affected aircraft when required	V
OOC.7.3.10	Receive significant weather PIREP	V

Table D-1. ZAN Tasks Identified as Being Highly Critical or Extremely Critical.

Task No.	Task Statement	High Criticality	Extreme Criticality
AOC.1.1.10	"Review departure flight strip for accuracy (e.g., destination, requested altitude, route)"	H	
AOC.1.1.11	Evaluate existing traffic and sector plan(s)		E
AOC.1.1.12	Formulate departure clearance	H	
AOC.1.1.15	"Review flight strips for accuracy (e.g., destination, altitude/requested altitude, and route)"		E
AOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts		E
AOC.1.2.2	Enter warning indication on appropriate flight strip and defer action	H	
AOC.1.2.4	Direct traffic flow to merge one or more westbound tracks of the NOPAC		E
AOC.1.2.8	"Relay clearance to pilot via appropriate means (e.g., direct VHF communications, ARINC, tower, base operations, pilot relay)"		E
AOC.1.2.9	Enter clearance data on flight progress strip(s)		E
AOC.1.2.10	Update flight plan in OCS per ZAN SOP		E
AOC.1.2.11	Receive acknowledgement of clearance		E
AOC.1.2.12	Receive pilot's reason why clearance is unacceptable		E
AOC.1.2.13	"Enter a line or ""X"" through the clearance information on the flight progress strip"		E
AOC.1.2.14	Retract clearance		E
AOC.1.2.15	Initiate a communications search for aircraft		E
AOC.1.2.16	Direct emergency services as specified by order and procedures		E
AOC.1.2.19	Initiate activation of flight plan in OCS		E
AOC.1.3.1	Receive latest boundary crossing time estimate and altitude from adjacent facility		E
AOC.1.3.2	Verify flight data shown on flight progress strip with adjacent facility controller		E
AOC.1.3.3	Record flight data on flight progress strip as received from adjacent facility controller		E
AOC.1.3.4	"Review flight's estimated time of arrival (ETA) at coordination fix, altitude, and routing for reasonableness"		E
AOC.1.3.5	Evaluate route and altitude for conflicts		E
AOC.1.3.6	Approve transfer	H	
AOC.1.3.7	Enter flight strip marking to indicate flight plan status		E
AOC.1.3.8	Issue control instructions to transferring controller		E
AOC.1.3.10	Receive radar handoff or progress report from adjacent anchorage sector		E
AOC.1.3.11	Record flight data on flight progress strip		E
AOC.1.4.1	Coordinate with adjacent sector/facility in control of flight(s) to resolve detected conflicts		E
AOC.1.4.2	Evaluate alternate solutions and provide viable solution to adjacent sector/facility for selection and coordination with pilot		E
AOC.1.5.1	Search flight strips/radar to identify flights that are ready for coordination of transfer of control with the adjacent		E

	sector/facility		
AOC.1.5.2	Contact adjacent sector/facility a parameter number of minutes prior to aircraft's estimated time over transfer of control point	H	
AOC.1.5.3	Issue contact instructions to affected aircraft	H	
AOC.1.5.4	Initiate radar handoff by entering the receiving sector ID and selecting aircraft on PVD to be handed off		E
AOC.1.5.5	Observe PVD for handoff acceptance (flashing datablock)		E
AOC.1.5.6	Contact receiving sector to inform of pending handoff		E
AOC.1.6.4	"Forward A/C ID, transfer of control point, latest estimate to transfer of control point, coordinated altitude, mach number (if appropriate), control information/remarks"		E
AOC.1.6.5	Forward aircraft's flight plan		E
AOC.1.6.6	Receive alternative flight levels from adjacent facility		E
AOC.1.6.7	Receive alternative route changes from adjacent facility		E
AOC.1.6.9	Select alternatives that do not cause a near-term conflict with your sector's traffic		E
AOC.1.6.10	Issue alternatives to pilot		E
AOC.1.6.11	Receive response of preferred alternative from pilot		E
AOC.1.6.22	"Receive alternative speed restrictions (e.g., mach assignment) from adjacent facility"		E
AOC.1.6.23	Coordinate clearance with receiving controller		E
AOC.1.7.1	"Forward A/C callsign, fix or lat/long, control time at that point, pilot's estimate (if necessary), assigned altitude, assigned mach number, remarks"		E
AOC.1.8.1	Coordinate changes with receiving controller		E
AOC.1.9.1	Coordinate WAFDOF with receiving controller early enough to allow time to establish A/C at an appropriate altitude for direction of flight should approval be denied		E
AOC.1.9.2	Receive approval from receiving controller of wrong altitude for direction of flight		E
AOC.1.9.3	Enter WAFDOF approval on flight progress strip		E
AOC.1.10.1	Forward flight information to adjacent facility or sector		E
AOC.1.11.5	Determine that control of an aircraft in an adjacent sector/facility is required	H	
AOC.1.11.6	Issue alternate instructions to adjacent sector/facility		E
AOC.1.12.1	Enter marking on flight strip to indicate coordination with adjacent facility has been accomplished		E
AOC.2.1.1	"Receive position report from pilot, or relayed by ARINC via OCS or by teletype message"		E
AOC.2.1.3	"Determine if information in position report is valid and reasonable, by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA"		E
AOC.2.1.4	Determine if controller's estimate of transit times between fixes are more reasonable than pilot's estimates		E
AOC.2.1.8	Acknowledge receipt of position report via OCS	H	
AOC.2.2.1	Update the previous control time		E
AOC.2.2.2	Update control time at subsequent fixes		E
AOC.2.2.3	Enter controller's and/or pilot's time estimate/progress report marking on flight strip		E
AOC.2.3.2	Contact ARINC to confirm information via OCS or land-line	H	
AOC.2.3.3	Receive verification of progress report	H	

AOC.2.3.4	Determine position report information is garble or inconsistent with current flight plan		E
AOC.2.3.5	Contact pilot to confirm current information		E
AOC.2.4.1	Review the current and expected times and altitudes of all aircraft at each fix to see if a potential conflict exists relative to the applicable separation standards		E
AOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any other aircraft"		E
AOC.2.4.3	Determine that immediate action is required		E
AOC.2.4.4	Determine options that will resolve the conflict		E
AOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft		E
NOC.2.4.6	"Select an option which is free of immediate conflicts, is compatible with the sector traffic plan, and considers user preferences"		E
AOC.2.4.7	Issue alternative(s) to transferring controller		E
AOC.2.4.8	Enter amended flight data on flight strip		E
AOC.2.4.9	Enter clearance amendment into computer as amendment message		E
AOC.2.4.10	Receive acknowledgement from aircraft of new clearance		E
AOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable		E
AOC.2.4.12	Defer resolution of the predicted conflict		E
AOC.2.4.13	"Enter red ""W"" on flight progress strips to denote conflict"		E
AOC.2.4.14	Evaluate each option by looking at radar display of each aircraft		E
AOC.2.6.1	Review remarks section of the position report for additional information	H	
AOC.2.6.2	Review aircraft measurements of wind speed and direction to take into account when estimating time at fixes (when available)	H	
AOC.2.6.4	Forward pilot report regarding significant meteorological or volcanic conditions to the CWSU/weather coordinator	H	
AOC.2.7.1	Compare the new position report information with plan for traffic in the sector		E
AOC.2.7.2	Resequence flight strips		E
AOC.2.7.3	Remove old flight strips		E
AOC.3.1.1	"Receive pilot change request via radio, ARINC land-lines, or OCS"		E
AOC.3.1.3	Defer response to a change request	H	
AOC.3.1.4	"Issue advisory to pilot ""Standby"""	H	
AOC.3.1.5	"Issue advisory to pilot ""Unable, request on file"""	H	
AOC.3.1.6	Review flight plan change request	H	
AOC.3.1.7	Enter flight plan change request on flight strip(s)	H	
AOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft or airspace		E
AOC.3.1.11	Evaluate change request based on sector traffic plan(s)		E
AOC.3.1.12	Evaluate change request based on altitude restrictions for direction of travel		E
AOC.3.1.13	Evaluate change request based on potential for request accommodation/coordination before transfer to next		E

	sector/facility		
AOC.3.1.14	Evaluate change request based on knowledge about what the next sector/facility is likely to accept		E
AOC.3.1.15	Evaluate change request for conflicts based on flight strips and PVD information		E
AOC.3.1.18	Determine whether change request is acceptable		E
AOC.3.2.2	Flag current flight strip in canted position in strip bay as a reminder for further action needed on aircraft		E
AOC.3.2.6	"Receive pilot confirmation of clearance via pilot, ARINC land-lines, or OCS"		E
AOC.3.2.7	Request pilot report when arriving at new altitude		E
AOC.3.2.8	Request that pilot report when leaving current altitude		E
AOC.3.2.11	Receive pilot report of altitude leaving or reaching new altitude		E
AOC.3.2.12	Unflag by uncanting flight strip following pilot report	H	
AOC.3.2.13	Enter marking on control strip when pilot reports altitude leaving or reaching new altitude		E
AOC.3.2.14	Request pilot report of current altitude		E
AOC.3.2.15	"Coordinate change with subsequent facility (e.g., Oakland, Tokyo) before issuing clearance if flight is within 30 minutes of FIR boundary"		E
AOC.3.2.16	Coordinate change with subsequent sector before issuing clearance when flight is within 15 minutes of sector boundary		E
AOC.3.2.17	Coordinate change with subsequent sector before issuing clearance when flight is within 5 minutes of sector boundary		E
AOC.3.2.18	Enter flight strip marking on first and subsequent strips for non-altitude flight plan change requests		E
AOC.3.2.19	Observe Mode-C (altitude) update on PVD		E
AOC.3.2.20	Enter altitude change into PVD or OCS		E
AOC.3.2.21	Enter non-altitude change into OCS		E
AOC.3.3.4	Inform the pilot by radio or through ARINC that flight plan change request is denied		E
AOC.3.3.19	Unflag to uncant the flight strip	H	
AOC.3.4.1	Formulate search for acceptable flight plan change		E
AOC.3.4.3	Evaluate alternative changes with respect to potential conflicts with other aircraft or airspace		E
AOC.3.4.4	Evaluate alternative changes with respect to sector traffic plan(s)		E
AOC.3.4.5	Evaluate alternative changes with respect to direction-of-travel altitude restrictions		E
AOC.3.4.6	Evaluate alternative changes with respect to potential request accommodation/coordination		E
AOC.3.4.7	Evaluate alternative changes with respect to knowledge of what next sector will accept		E
AOC.3.4.8	Receive denial of flight plan change from subsequent sector/facility	H	
AOC.3.4.9	Flag selected flight strip in changed position in strip bay for potential flight plan change	H	
AOC.4.1.2	Review information recorded on flight strips		E
AOC.4.1.3	Verify reasonableness of each strip		E
AOC.4.1.4	Verify accuracy of data		E

AOC.4.1.5	Update the strip marking		E
AOC.4.2.1	"Review flight strip bays, one fix posting area at a time"		E
AOC.4.2.2	Review information recorded on flight strips		E
AOC.4.2.4	"Compare time, altitude, and route of flight to see if a potential conflict exists"		E
AOC.4.2.5	Review traffic situation on PVD		E
AOC.4.3.1	"Review flight strip bays, one fix posting area at a time"		E
AOC.4.3.2	Review information recorded on flight strips		E
AOC.4.3.3	Verify reasonableness of data on each strip		E
AOC.4.3.4	Compare current time and estimated time at fix		E
AOC.4.3.8	Contact controllers in adjacent sectors to see if a position report was received for the aircraft		E
AOC.4.3.9	Contact ARINC by OCS or land-line		E
AOC.4.3.10	Request a position report from ARINC		E
AOC.4.3.11	Receive position report from ARINC		E
AOC.4.3.12	Initiate a communications search for contact with aircraft as specified by orders and procedures		E
AOC.4.3.13	Direct emergency services as specified by order and procedures		E
AOC.4.3.14	Contact aircraft by radio		E
AOC.4.3.15	Request ARINC to advise the pilot to contact ZAN via radio		E
AOC.4.4.1	"Review flight strip bays, one fix posting area at a time"		E
AOC.4.4.2	Review information recorded on flight strips		E
AOC.4.4.3	Determine options for traffic in the sector		E
AOC.4.4.4	Formulate a plan for traffic in the sector		E
AOC.4.4.5	Evaluate the plan for traffic in the sector		E
AOC.4.4.6	Update the plan for traffic in the sector		E
AOC.4.4.7	Review factors such as management of traffic flows for merging or crossing routes		E
AOC.4.4.8	Review factors such as current or anticipated pilot requests for route or altitude changes		E
AOC.4.4.9	Review factors such as contingencies		E
AOC.4.4.11	Update flight strips to reflect current information		E
AOC.4.5.1	Contact other controller/ARINC		E
AOC.4.5.2	Conduct communication of necessary information		E
AOC.4.6.1	Resequence flight strips		E
AOC.4.6.2	Remove old flight strips	H	
AOC.4.8.3	Issue appropriate Mach number(s) to first aircraft		E
AOC.4.8.4	Receive first aircraft's acknowledgement of receipt of clearance		E
AOC.4.8.5	Issue appropriate Mach number(s) to second aircraft		E
AOC.4.8.6	Verify aircraft follow the same track or continuously diverging track		E
AOC.4.8.7	Verify that radar is used to ensure that the appropriate time interval will exist at the common point		E
AOC.4.8.8	Verify radar is used such that appropriate time interval will exist at a significant point on each track from which tracks continuously diverge		E
AOC.4.8.13	Issue sufficient longitudinal separation to ensure appropriate minima will exist until another form of separation is achieved		E
AOC.4.8.14	Receive second aircraft's acknowledgement of receipt of		E

	clearance		
AOC.4.8.15	Verify via position reports and control estimates that the appropriate time interval exists over the common point		E
AOC.4.8.16	Verify via pilot estimates that the appropriate time interval exists at the point from which tracks continuously diverge		E
AOC.4.10.1	Brief relieving controller on sector operations using position relief briefing checklist		E
AOC.4.10.4	Verify completeness of relief briefing receipt		E
AOC.4.11.1	Review system status to determine currency or updates		E
AOC.4.11.2	Review current and projected traffic or weather		E
AOC.4.11.3	Review flight progress strips and displayed lists for correlation		E
AOC.4.11.4	"Receive controller relief briefing using briefing checklist, and notes (if applicable) to assure completeness of briefing coverage"		E
AOC.4.11.6	Determine if ready to accept control responsibility		E
AOC.4.11.8	Verify that all required display parameters are properly set		E
AOC.4.11.9	"Check displays or equipment for proper configuration usability, and satisfactory status"		E
AOC.5.1.1	"Determine an appropriate course of action which guarantees safety as a first priority, but expedites the flow of air traffic to the extent possible"		E
AOC.5.1.3	Determine course of action through use of procedures		E
AOC.5.1.4	Formulate manual flight strips		E
AOC.5.1.5	Update manual flight strips		E
AOC.5.1.6	"Initiate a traffic management initiative for affected oceanic flights (e.g., ground stop)"		E
AOC.5.1.8	"Switch to alternate communication links, such as commercial telephone lines, ARINC, aircraft communications relay, or teletype"		E
AOC.5.2.1	Inform supervisor of any indication that HF communication service is or will be unavailable or restricted		E
AOC.5.2.3	Direct clearance or approval for a larger-than-normal margin of separation between aircraft over the entire route of flight within oceanic control area		E
AOC.5.2.4	Project the traffic flow in order to take into account the possibility of not being able to intervene in the future to prevent conflicts		E
AOC.5.2.5	Coordinate restrictions on additional traffic entering the affected airspace		E
AOC.5.2.6	Conduct attempts for communication with satellite-equipped aircraft through ARINC		E
AOC.5.2.7	"Conduct attempts for HF, UHF, or VHF communication relays through ATC facilities within their ranges"		E
AOC.5.2.8	Conduct attempts to use aircraft companies/commands to send messages directly to aircraft by radio (ACARS)		E
AOC.5.2.9	Conduct attempts to use military global command and control (GCCS) stations for phone patches with military aircraft		E
AOC.5.2.11	Conduct attempts to use an aircraft to relay messages to other aircraft within 500 mile radius for air-to-air relay		E
AOC.5.2.12	Receive contact from ARINC operators by commercial land-line		E

AOC.5.2.14	Establish attempt to contact aircraft on other VHF/HF frequencies		E
AOC.5.2.15	Conduct a relay link with other nearby aircraft		E
AOC.5.2.17	Contact aircraft via VHF		E
AOC.5.2.18	Initiate contact with ARINC operator by voice		E
AOC.6.1.1	"Receive notification from pilot that aircraft is invoking ""military assumes responsibility for separation of aircraft"" (MARSA) OPS with another A/C and/or released airspace"	H	
AOC.6.1.2	Review MARSA entered in remarks section of flight plan	H	
AOC.6.1.3	Verify aircraft is MARSA with another aircraft and/or released airspace		E
AOC.6.1.4	Issue clearances to ensure IFR separation between MARSA aircraft and other IFR flights		E
AOC.6.1.5	Terminate providing IFR separation between MARSA aircraft and/or released airspace	H	
AOC.6.2.1	Issue clearances to ensure separation of non-participating aircraft from airspace released to the air defense control facility (ADCF)		E
AOC.6.2.2	Verify that NOPAR is entered in the remarks section of the flight plan	H	
AOC.6.5.1	Issue cancellation of ALTRV for aircraft requesting a routing or altitude change which is not in the approved ALTRV		E
AOC.6.5.2	Initiate change to ALTRV due to safety or other extraordinary circumstances		E
AOC.6.5.3	Terminate MARSA after separation has been established		E
AOC.6.5.4	Issue clearance(s) to establish separation		E
AOC.6.5.5	Issue clearance to aircraft to return to the ALTRV as soon as practicable		E
AOC.6.5.6	Verify reestablishment of MARSA if aircraft route or altitude is changed from the approved ALTRV		E
AOC.6.6.3	Issue AMIS directly to ADCF via voice circuits on all IFR flights classified as NORAD special interest flight and for aircraft transporting president and vice president	H	
AOC.6.7.1	Receive aircraft request for clearance to refuel	H	
AOC.6.7.2	Verify that tanker aircraft has accepted MARSA with all aircraft involved in refueling mission	H	
AOC.6.7.3	"Assign a block altitude of 3000 feet or greater regardless of altitude (e.g., 190B210, 290B310)"	H	
AOC.6.7.4	"Issue clearance to tanker authorizing refueling along a specified track, or between coordinates along a point-to-point route of flight"	H	
AOC.6.7.5	Receive message from tanker that refueling has ended or will end shortly	H	
AOC.6.7.6	Issue clearance effective at the exit point (end of refueling) for each aircraft in the refueling operations	H	
AOC.6.7.7	Receive acknowledgement of each aircraft through tanker crew	H	
AOC.6.7.8	Receive message from tanker that tanker and receiver aircraft are positioned with appropriate vertical separation at termination of refueling	H	
AOC.6.7.9	Terminate MARSA	H	
AOC.7.1.1	Determine if special attention or handling for a particular		E

	situation is warranted		
AOC.7.1.3	"Issue advisory to pilot including ""Unable due to traffic"", quote of traffic, alternative options, and ""Advise intentions"""		E
AOC.7.1.4	Receive pilot intentions		E
AOC.7.1.5	Issue advisory that an emergency descent is in progress to other aircraft in the vicinity of the emergency aircraft		E
AOC.7.1.6	Receive report from emergency aircraft that the emergency descent has been completed		E
AOC.7.1.7	Issue advisory that descent is complete to other aircraft in the vicinity of the emergency aircraft		E
AOC.7.1.8	Issue clearances to other aircraft in conflict with the emergency aircraft to re-establish separation		E
AOC.7.1.9	Receive reports from other aircraft re-establishing IFR separation		E
AOC.7.1.10	Receive notification of a potential aircraft emergency situation		E
AOC.7.1.11	Review nature of the emergency and pilot intentions		E
AOC.7.1.12	Inform supervisor of potential emergency situation		E
AOC.7.1.13	Observe situation for new developments		E
AOC.7.2.1	"Receive notice from pilot that weather avoidance deviation is required, including direction of course deviation and anticipated number of miles deviation requires"	H	
AOC.7.2.2	"Issue advisory to pilot including ""Unable deviation due to traffic"", quote traffic, issue alternatives, request ""Advise intentions"""	H	
AOC.7.2.3	Issue traffic advisories to all affected flights	H	
AOC.7.2.4	Conduct actions to separate affected aircraft	H	
AOC.7.2.5	Approve pilot's request to deviate around weather	H	
AOC.7.2.6	"Request that pilot report ""Established back on course"""	H	
AOC.7.2.7	"Receive request from pilot for permission for weather avoidance deviation, including direction of course deviation, anticipated number of miles required"	H	
AOC.7.2.8	"Receive advisory from pilot ""Aircraft will not deviate for weather"""	H	
AOC.7.3.1	Receive SIGMET/MIS from area supervisor or directly from CWSU/weather coordinator specialist		E
AOC.7.3.3	Determine location of the phenomenon being described		E
AOC.7.3.5	Broadcast SIGMET/MIS to all aircraft within one hour flying time and/or 150 nautical mile laterally from the affected area		E
AOC.7.3.8	Request a pilot report (PIREP) from each aircraft transiting the affected area		E
AOC.7.3.9	"Forward PIREPS to the center weather service unit, or the weather coordinator"		E
AOC.7.3.10	Receive significant weather PIREP		E
AOC.7.3.11	Forward significant weather PIREP to any affected flights within one hour flying time of the position of the PIREP until a SIGMET can be issued		E
AOC.7.4.1	Contact area supervisor that a situation exists requiring activation of the alerting service		E
AOC.7.4.2	"Forward aircraft identification, estimated position and other pertinent information to supervisor to ascertain phase		E

	of alerting service required and to complete form 7100-5"		

Table D-2. ZNY Tasks Identified as Being Highly Critical or Extremely Critical.

Task No.	Task Statement	High Criticality	Extreme Criticality
NOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts		E
NOC.1.2.2	Enter warning indication on appropriate flight strip and defer action		E
NOC.1.2.3	"Receive oceanic entry point, time, and altitude"		E
NOC.1.2.8	"Relay clearance to pilot via appropriate means (e.g., ARINC, adjacent sector/facility controller, pilot relay)"		E
NOC.1.2.9	Enter clearance data on flight progress strip(s)		E
NOC.1.2.10	Update flight plan database		E
NOC.1.2.11	Receive acknowledgment of clearance		E
NOC.1.2.13	Enter a line through the clearance information on the flight progress strip		E
NOC.1.2.14	Retract clearance	H	
NOC.1.2.15	Initiate a communications search for aircraft after an adapted period of time	H	
NOC.1.2.17	Initiate activation of flight plan in ODAPS		E
NOC.1.2.18	Initiate activation of flight plan in host		E
NOC.1.3.1	Receive latest boundary crossing time estimate and altitude from adjacent facility		E
NOC.1.3.2	Verify flight data shown on flight progress strip with adjacent facility controller		E
NOC.1.3.3	Record flight data on flight progress strip as received from adjacent facility controller		E
NOC.1.3.4	"Review flight's estimated time of arrival (ETA) at coordination fix, altitude, and routing for reasonableness"		E
NOC.1.3.5	Evaluate route and altitude for conflicts		E
NOC.1.3.6	Approve transfer	H	
NOC.1.3.8	Issue control instructions to transferring controller		E
NOC.1.4.1	Coordinate with adjacent controller to resolve detected conflicts		E
NOC.1.4.2	Negotiate viable solution with adjacent controller	H	
NOC.1.4.4	Determine alternative solution		E
NOC.1.5.1	Search flight strips to identify flights that are ready for coordination of flight plan information with the adjacent sector/facility		E
NOC.1.5.2	Contact adjacent sector/facility a parameter number of minutes prior to aircraft's estimated boundary time		E
NOC.1.6.4	"Forward aircraft identification, boundary point and estimate, coordinated altitude, coordinated speed, information/remarks"		E
NOC.1.6.5	Forward aircraft's flight plan		E
NOC.1.6.9	Negotiate alternatives that do not cause a near-term conflict with sector's traffic		E
NOC.1.6.10	Relay alternatives to pilot through ARINC		E
NOC.1.6.17	Conduct verbal verification of transfer		E
NOC.1.6.21	Conduct manual transfer of control procedures via interphone/commercial telephone		E
NOC.1.6.23	Coordinated clearance with receiving controller		E
NOC.1.7.1	"Forward A/C callsign, fix or lat/long, control time at that point, pilot's estimate (if necessary), assigned altitude, assigned MACH number, remarks"		E
NOC.1.8.1	Coordinate changes with receiving controller		E

NOC.1.11.5	Determine that control of an aircraft in an adjacent sector/facility is required	H	
NOC.1.11.6	Issue alternate instructions to adjacent sector/facility	H	
NOC.1.12.1	Enter marking on flight strip to indicate coordination with adjacent sector/facility controller has been accomplished		E
NOC.2.1.1	"Receive position report from pilot, relayed by ARINC via the ARINC printer"		E
NOC.2.1.2	Remove latest position report from printer	H	
NOC.2.1.3	"Determine if information in position report is valid and reasonable, by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA"		E
NOC.2.1.4	Determine if controller's estimate of transit times between fixes are more reasonable than pilot's estimates		E
NOC.2.1.5	"Receive position report from pilot, relayed by ARINC on TP display"		E
NOC.2.1.6	Review ODAPS TP for ODAPS discrepancy reports		E
NOC.2.1.7	"Determine if the information in the discrepancy report is valid and reasonable by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA "		E
NOC.2.2.1	Update the previous control time	H	
NOC.2.2.2	Update control time at subsequent fixes	H	
NOC.2.2.3	Enter center's time estimate marking on flight strip	H	
NOC.2.2.4	Observe acceptance of progress report on ODAPS TP	H	
NOC.2.2.5	Enter progress report into ODAPS flight plan database	H	
NOC.2.2.6	Review ODAPS to help maintain mental picture of traffic for monitoring and planning	H	
NOC.2.3.1	Contact ARINC by telephone to confirm information		E
NOC.2.3.3	Receive verification of position report		E
NOC.2.4.1	Review the current and expected times and altitudes of other aircraft at each fix to see if a potential conflict exists		E
NOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any other aircraft"		E
NOC.2.4.3	Determine that immediate action is required		E
NOC.2.4.4	Determine options that will resolve the conflict		E
NOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft		E
NOC.2.4.6	"Select an option which is free of immediate conflicts, is compatible with the sector traffic plan, and considers user preferences"		E
NOC.2.4.7	Issue alternative(s) to transferring controller		E
NOC.2.4.8	Enter amended flight data on flight strip		E
NOC.2.4.9	Enter clearance amendment into ODAPS as amendment message		E
NOC.2.4.10	Receive acknowledgment from aircraft of new clearance		E
NOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable		E
NOC.2.4.12	Defer resolution to the problem if conflict will occur in the future		E
NOC.2.4.13	"Enter red ""W"" on flight progress strips to denote conflict"		E
NOC.2.4.14	Enter clearance amendment into Host as amendment message		E
NOC.2.7.2	Resequence flight strips		E
NOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft		E
NOC.3.1.11	Evaluate change request based on plans for dealing with other aircraft in the future		E

NOC.3.1.13	Evaluate change request based on potential for intervention with the subject or other aircraft before transfer to next facility		E
NOC.3.1.14	Evaluate change request based on knowledge about what the next sector/facility is likely to accept	H	
NOC.3.1.15	Evaluate change request for conflicts based on knowledge of aircraft positions and reference to flight strips		E
NOC.3.1.16	Evaluate change request using a grease pencil and sector map to analyze change request	H	
NOC.3.1.17	Evaluate sector ODAPS TP to visually determine acceptability of flight plan change		E
NOC.3.1.18	Determine whether change request is acceptable		E
NOC.3.2.2	Flag current flight strip in canted position in strip bay as a reminder for further action needed on aircraft	H	
NOC.3.2.3	Coordinate change with subsequent New York sector before granting clearance when flight is within an hour of sector boundary	H	
NOC.3.2.4	Coordinate change with subsequent sector before granting clearance for flights farther than one hour from sector boundary	H	
NOC.3.2.5	Coordinate change with Caribbean sector(s) before issuing clearance or approving change	H	
NOC.3.2.6	Receive pilot confirmation of clearance through ARINC	H	
NOC.3.2.11	Receive pilot report of new altitude	H	
NOC.3.2.13	Enter marking on appropriate flight strip when pilot reports arriving at new altitude	H	
NOC.3.2.14	Contact ARINC by telephone to solicit pilot report of current altitude	H	
NOC.3.4.1	Formulate search for acceptable flight plan change	H	
NOC.3.4.3	Evaluate candidate alternative changes with respect to potential conflicts with other aircraft		E
NOC.3.4.4	Evaluate candidate alternative changes with respect to plans for dealing with other aircraft		E
NOC.3.4.6	Evaluate candidate alternative changes with respect to potential for intervention before crossing sector boundary		E
NOC.3.4.7	Evaluate candidate alternative changes with respect to knowledge of what next sector will accept	H	
NOC.3.4.8	Receive denial of flight plan change from subsequent sector/facility	H	
NOC.4.1.2	Review information recorded on flight strips	H	
NOC.4.1.3	Verify reasonableness of data on each strip	H	
NOC.4.1.4	Verify accuracy of data	H	
NOC.4.1.5	Update the strip marking	H	
NOC.4.2.2	Review information recorded on flight strips		E
NOC.4.2.4	"Compare time, altitude, speed, and route of flight at each fix to see if a potential conflict exists"		E
NOC.4.3.4	Compare center estimated time and pilot estimated time at fix	H	
NOC.4.3.13	Direct emergency services as specified by order and procedures		E
NOC.4.4.2	Review information recorded on flight strips	H	
NOC.4.4.3	Determine options for traffic in the sector	H	
NOC.4.4.4	Formulate a plan for traffic in the sector		E
NOC.4.4.5	Evaluate the plan for traffic in the sector		E
NOC.4.4.7	Review factors such as management of traffic flows for merging or crossing routes		E
NOC.4.5.1	Contact other controller/ARINC	H	
NOC.4.5.2	Conduct communication of necessary information	H	
NOC.4.6.1	Resequence flight strips		E

NOC.4.8.1	"Verify aircraft are at same flight level, or aircraft are climbing/descending to same flight level, or aircraft is climbing/descending through another A/C's altitude"	H	
NOC.4.8.3	Issue appropriate Mach number(s) to first aircraft		E
NOC.4.8.4	Receive first aircraft's acknowledgment of receipt of clearance		E
NOC.4.8.5	Issue appropriate Mach number(s) to second aircraft		E
NOC.4.8.6	Verify aircraft follow the same track or continuously diverging track	H	E
NOC.4.8.7	Verify that radar is used to ensure that the appropriate time interval will exist at the common point	H	
NOC.4.8.8	Verify radar is used such that appropriate time interval will exist at a significant point on each track from which tracks continuously diverge		E
NOC.4.8.13	Issue sufficient longitudinal separation to ensure appropriate minima will exist until another form of separation is achieved		E
NOC.4.8.14	Receive second aircraft's acknowledgment of receipt of clearance		E
NOC.4.10.1	Brief relieving controller on sector operations		E
NOC.4.10.4	Verify completeness of relief briefing receipt		E
NOC.4.11.1	Review system status to determine currency or updates	H	
NOC.4.11.2	Review current and projected traffic load and weather	H	
NOC.4.11.3	Review flight progress strips and displayed lists for correlation	H	
NOC.4.11.4	Receive controller relief briefing using briefing checklist or notes to assure completeness of briefing coverage	H	
NOC.4.11.6	Determine if ready to accept control responsibility	H	
NOC.5.1.1	"Determine an appropriate course of action which guarantees safety as a first priority, but expedites the flow of air traffic to the extent possible"		E
NOC.5.1.2	Determine course of action through use of judgment		E
NOC.5.1.3	Determine course of action through use of procedures		E
NOC.5.1.4	Formulate manual flight strips	H	
NOC.5.1.5	Update manual flight strips	H	
NOC.5.1.8	"Switch to alternate communication links, such as commercial telephone lines"	H	
NOC.5.2.1	Inform oceanic supervisor of any indication that HF communication service is or will be unavailable or restricted	H	
NOC.5.2.2	Coordinate with each oceanic sector that is or will be controlling the aircraft before issuing a clearance or approval	H	
NOC.5.2.3	Issue clearance and/or restrictions for a larger-than-normal margin of separation between aircraft over the entire route of flight within oceanic control area	H	
NOC.5.2.4	Project the traffic flow in order to take into account the possibility of not being able to intervene in the future to prevent conflicts	H	
NOC.5.2.5	Coordinate restrictions on additional traffic entering the affected airspace	H	
NOC.5.2.7	"Conduct attempts for HF, UHF, or VHF communication relays through ATC facilities within their range of VHF (500 miles)"	H	
NOC.5.2.8	Conduct attempts to use aircraft companies/commands to send messages directly to aircraft by radio (ACARS)	H	
NOC.5.2.11	Conduct attempts to use an aircraft to relay messages to other aircraft within 500 mile radius for air-to-air relay	H	
NOC.5.2.12	Receive contact from ARINC operators by voice	H	
NOC.5.2.13	Switch communications between ARINC and ATC facility to another line	H	

NOC.5.2.18	Initiate contact with ARINC operator by voice	H	
NOC.5.3.1	Issue clearances to other aircraft separating them horizontally from failed aircraft	H	
NOC.5.3.2	Issue clearances to other aircraft separating them vertically from failed aircraft	H	
NOC.5.3.3	Assign one altitude or block of altitudes reserved for the failed aircraft within a large area	H	
NOC.6.1.4	Issue IFR separation between MARSA aircraft requesting IFR and other IFR flights		E
NOC.6.2.1	Issue separation to non-participating aircraft from airspace released to the air defense control facility (ADCF)		E
NOC.6.4.1	Receive a message from a military aircraft declaring itself as an operational flight	H	
NOC.6.4.2	Receive request from military flight for IFR clearance	H	
NOC.6.4.3	Formulate flight strip for requesting military aircraft	H	
NOC.6.5.1	Issue cancellation of ALTRV for aircraft requesting a routing or altitude change which is not in the approved ALTRV	H	
NOC.6.5.2	Initiate change to ALTRV due to safety or other extraordinary circumstances	H	
NOC.6.5.4	Issue separation		E
NOC.6.5.5	Issue clearance to aircraft to return to the ALTRV as soon as practicable	H	
NOC.6.5.6	Verify reestablishment of MARSA if aircraft route or altitude is changed from the approved ALTRV		E
NOC.6.5.7	Receive tanker's declaration of MARSA with receiving aircraft		E
NOC.6.5.8	Issue clearance to tanker to common altitude with receiver although altitude has not been processed as an ALTRV request		E
NOC.6.5.9	Review airfile or flight plan for information on common altitude and identification of other aircraft		E
NOC.6.7.2	Verify that tanker aircraft has accepted MARSA with all aircraft involved in refueling mission		E
NOC.6.7.3	"Assign at least 3 consecutive flight levels (e.g., FL180, FL190, and FL200); at FL290 and above, refueling operation remains same (e.g., FL310, FL320, and FL330)"		E
NOC.6.7.4	"Issue clearance to tanker authorizing refueling along a specified track, or between coordinates along a point-to-point route of flight"		E
NOC.6.7.6	Issue clearance at the exit point (end of refueling) for each aircraft in the refueling operations		E
NOC.6.7.7	Receive acknowledgment of each aircraft through tanker crew		E
NOC.6.7.8	Receive message from tanker that tanker and receiver aircraft are positioned with appropriate vertical separation at termination of refueling	H	
NOC.7.1.1	Determine that special attention or handling for a particular emergency situation is warranted		E
NOC.7.1.2	Request for a communications path to the aircraft from ARINC in order to talk directly to the pilot to resolve problem		E
NOC.7.1.3	"Issue advisory to pilot including ""Unable due to traffic"", quote of traffic, alternative options, and ""Advise intentions"""		E
NOC.7.1.4	Receive pilot intentions		E
NOC.7.1.5	Issue advisory that an emergency descent is in progress to other aircraft in the vicinity of the emergency aircraft		E
NOC.7.1.6	Receive report from emergency aircraft that the emergency descent has been completed	H	
NOC.7.1.8	Issue clearances to other aircraft in conflict with the emergency		E

	aircraft to re-establish separation		
NOC.7.1.9	Receive reports from other aircraft re-establishing IFR separation		E
NOC.7.2.2	"Issue advisory to pilot ""Unable deviation due to traffic"", quote traffic, issue alternatives, request ""Advise intentions"""	H	
NOC.7.2.3	Issue traffic advisories to all affected flights		E
NOC.7.2.4	Conduct actions to separate affected aircraft		E
NOC.7.3.11	Forward significant weather PIREP to any affected flights within one hour flying time of the position of the PIREP until a SIGMET can be issued	H	
NOC.7.4.1	Contact oceanic area supervisor that a situation exists requiring activation of the alerting service	H	
NOC.7.4.2	"Forward aircraft identification, estimated position and other pertinent information to supervisor to ascertain phase of alerting service required and to complete 7100-5"	H	

Table D-3. ZOA Tasks Identified as Being Highly Critical or Extremely Critical.

Task No.	Task Statement	High Criticality	Extreme Criticality
OOC.1.1.2	Enter requested oceanic release on flight strip	H	
OOC.1.1.3	Review proposal strip generated for oceanic entry sector	H	
OOC.1.1.4	Evaluate existing traffic and oceanic releases		E
OOC.1.1.7	Enter alternate oceanic releases on flight strip		E
OOC.1.1.8	Receive pilot acceptance of oceanic release	H	
OOC.1.1.9	Receive request for clearance	H	
OOC.1.1.10	"Review departure flight strip for accuracy (e.g., destination, requested altitude, route)"	H	
OOC.1.1.11	Evaluate existing traffic and sector plan(s)		E
OOC.1.1.12	Formulate departure clearance		E
OOC.1.1.13	"Coordinate departure from internal airports (e.g., midway island) with adjacent sector/facility"		E
OOC.1.1.14	"Relay clearance to pilot via appropriate means (e.g., ARINC, tower, base operations, pilot relay)"		E
OOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts		E
OOC.1.2.2	Enter warning indication on appropriate flight strip and defer action		E
OOC.1.2.3	"Receive oceanic entry point, time, and altitude"		E
OOC.1.2.7	Check situation display to verify clearance		E
OOC.1.2.8	"Relay clearance to pilot via appropriate means (e.g., ARINC, tower, base operations, pilot relay)"	H	
OOC.1.2.9	Enter clearance data on flight progress strip(s)		E
OOC.1.2.10	Update flight plan database if too complex		E
OOC.1.2.11	Receive acknowledgment of clearance		E
OOC.1.2.12	Receive pilot's reason why clearance is unacceptable		E
OOC.1.2.13	Enter a line through the clearance information on the flight progress strip		E
OOC.1.2.14	Retract clearance		E
OOC.1.2.15	Initiate a communications search for aircraft		E
OOC.1.2.16	Direct emergency services as specified by order and procedures		E
OOC.1.2.17	Initiate activation of flight plan in ODAPS	H	
OOC.1.3.1	Receive latest boundary crossing time estimate and altitude from adjacent facility		E
OOC.1.3.2	Verify flight data shown on flight progress strip with adjacent facility controller		E
OOC.1.3.3	Record flight data on flight progress strip as received from adjacent facility controller		E
OOC.1.3.4	"Review flight's estimated time of arrival (ETA) at coordination fix, altitude, and routing for reasonableness"		E
OOC.1.3.5	Evaluate route and altitude for conflicts		E

OOC.1.4.1	Coordinate with adjacent facility in control of flight(s) to resolve detected conflicts		E
OOC.1.4.2	Evaluate alternate solutions and provide viable solution to adjacent facility for selection and coordination with pilot		E
OOC.1.4.3	Coordinate resolution of conflict		E
OOC.1.5.1	Search to identify flights that are ready for coordination of transfer of control with the adjacent facility		E
OOC.1.5.2	Contact adjacent facility/sector a parameter number of minutes prior to aircraft's estimated time over transfer of control point		E
OOC.1.6.1	"Forward aircraft ID, departure point, transfer of control point, estimated time over transfer of control point, altitude/flight level, destination airport, control information/remarks to flight data comm spec. via Interphone"		E
OOC.1.6.2	Coordinate verbally to verify acceptance of transfer		E
OOC.1.6.3	Receive restrictions necessary for adjacent facility to accept flight		E
OOC.1.6.4	"Forward aircraft identification, transfer of control point, latest estimate to transfer of control point, coordinated altitude, MACH number, control information/remarks"		E
OOC.1.6.5	Forward aircraft's flight plan	H	
OOC.1.6.6	Receive alternative flight levels from adjacent facility/sector	H	
OOC.1.6.7	Receive alternative route changes from adjacent facility	H	
OOC.1.6.8	Receive alternative boundary crossing time restrictions from adjacent facility	H	
OOC.1.6.9	Select alternatives that do not cause a near-term conflict with sector's traffic		E
OOC.1.6.10	Relay alternatives to pilot		E
OOC.1.6.11	Receive response of preferred alternative from pilot		E
OOC.1.6.14	"Contact adjacent facility to pass transfer of control through direct-line voice communication, commercial-line voice, teletype, or autovon prior to coordination time"		E
OOC.1.6.15	Verify control information pertinent to adjacent facilities/sectors is accurate		E
OOC.1.6.16	Verify black coordination indicator on appropriate flight progress strip indicating computer interface between ODAPS and adjacent ATC systems		E
OOC.1.6.17	Conduct verbal verification of transfer		E
OOC.1.6.18	Review unsuccessful transfer of flight plan information message on FDIO		E
OOC.1.6.19	Enter unsuccessful transfer indicator on flight progress strip		E
OOC.1.6.20	Verify red coordination indicator on last flight progress strip		E

OOC.1.6.21	Conduct manual transfer of control procedures via interphone/commercial telephone		E
OOC.1.7.1	"Forward A/C callsign, fix or lat/long, control time at that point, pilot's estimate (if necessary), assigned altitude, assigned MACH number, remarks"		E
OOC.1.7.2	"Forward A/C callsign, fix or lat/long, control time, pilot's estimate (if necessary) for last reporting point within transferring controller's sector, assigned altitude, assigned MACH number, remarks"		E
OOC.1.7.3	Receive specifics of actual progress report from receiving controller	H	
OOC.1.7.4	"Forward A/C callsign, fix or lat/long, control time, pilot's estimated time (if necessary) for first reporting point within receiving sector airspace, assigned altitude, assigned MACH, remarks"		E
OOC.1.8.1	Coordinate changes with receiving controller		E
OOC.1.9.1	Coordinate WAFDOF with receiving controller early enough to allow time to establish A/C at an appropriate altitude for direction of flight should approval be denied		E
OOC.1.9.2	Receive approval from receiving controller of wrong altitude for direction of flight		E
OOC.1.9.3	Enter WAFDOF approval on flight progress strip	H	
OOC.1.10.1	Forward flight information to adjacent facility or sector		E
OOC.1.10.2	Forward flight information to Mazatlan ACC via commercial telephone		E
OOC.1.10.3	Forward flight information to Los Angeles Center AMIS		E
OOC.1.10.5	"Forward flight information to Honiara FIC, Nauru radio and next adjacent ACC along aircraft's route of flight"		E
OOC.1.12.1	Enter marking on flight strip to indicate coordination with adjacent facility has been accomplished		E
OOC.2.1.1	"Receive position report, relayed by ARINC or via CPDLC"		E
OOC.2.1.3	"Determine if information in position report is valid and reasonable, by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA, ensuing fix"		E
OOC.2.1.4	Determine if controller's estimate of transit times between fixes are more reasonable than pilot's estimates		E
OOC.2.1.5	Receive position report from ARINC or CPDLC		E
OOC.2.1.6	Review ODAPS FDIO for ODAPS discrepancy reports		E
OOC.2.2.1	Update the previous control time		E
OOC.2.2.2	Update control time at subsequent fixes		E
OOC.2.2.4	Observe acceptance of progress report on		E

	ODAPS FDIO		
OOC.2.2.5	Enter progress report into ODAPS flight plan database		E
OOC.2.2.6	Review ISD to help maintain mental picture of traffic for monitoring and planning	H	
OOC.2.3.1	Contact Pilot to confirm information		E
OOC.2.3.3	Receive verification of position report		E
OOC.2.4.1	Review the current and expected times and altitudes of other aircraft at each fix to see if a potential conflict exists		E
OOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any other aircraft"		E
OOC.2.4.3	Determine that immediate action is required		E
OOC.2.4.4	Determine options that will resolve the conflict		E
OOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft		E
OOC.2.4.6	Select an option which is free of immediate conflicts and is compatible with the sector traffic plan		E
OOC.2.4.8	Enter amended flight data on flight strip		E
OOC.2.4.9	Enter clearance amendment into ODAPS if too complex		E
OOC.2.4.10	Receive acknowledgment from aircraft of new clearance		E
OOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable		E
OOC.2.4.12	Defer resolution to the problem if conflict will occur later in the future	H	
OOC.2.4.13	"Enter red ""W"" on flight progress strips to denote conflict"		E
OOC.2.6.1	Review remarks section of the position report for additional information	H	
OOC.2.6.3	"Issue a PIREP regarding icing, turbulence, or severe weather conditions"		E
OOC.2.7.1	Compare mentally the new position report information with plan for traffic in the sector		E
OOC.3.1.1	Receive pilot change request	H	
OOC.3.1.2	Receive pilot change request from ARINC by voice with hard-copy confirmation to follow	H	
OOC.3.1.6	Review flight plan change request	H	
OOC.3.1.7	Enter flight strip marking corresponding to aircraft's next and/or current mandatory reporting point with request	H	
OOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft		E
OOC.3.1.11	Evaluate change request based on plans for dealing with other aircraft in the future	H	
OOC.3.1.12	Evaluate change request based on altitude restrictions for direction of travel	H	
OOC.3.1.13	Evaluate change request based on conflict probe response		E
OOC.3.1.14	Evaluate change request based on knowledge	H	

	about what the next sector/facility is likely to accept		
OOC.3.1.16	Evaluate change request using a grease pencil and sector map to analyze change request	H	
OOC.3.1.17	Evaluate sector ODAPS ISD to visually determine acceptability of flight plan change		E
OOC.3.1.18	Determine whether change request is acceptable		E
OOC.3.2.1	Enter flight plan change request marking on current flight strip	H	
OOC.3.2.6	Receive pilot confirmation of clearance through ARINC		E
OOC.3.2.7	"Request pilot report when arriving at new altitude, route, or speed"	H	
OOC.3.2.8	Request that pilot report when leaving current altitude	H	
OOC.3.2.9	Receive pilot report when leaving current altitude at standard rate of climb	H	
OOC.3.2.13	Enter marking on first and subsequent flight strips when pilot reports arriving at new altitude		E
OOC.3.3.1	Determine flight plan change is not acceptable		E
OOC.3.3.2	Determine not to search for candidate alternative changes	H	
OOC.3.3.4	Deny flight plan change	H	
OOC.3.3.5	Formulate candidate alternative changes		E
OOC.3.3.6	Evaluate candidate alternative changes with respect to potential conflicts with other aircraft		E
OOC.3.3.7	Evaluate candidate alternative changes with respect to plans for dealing with other aircraft	H	
OOC.3.3.8	Evaluate candidate alternative changes with respect to direction-of-travel restrictions on altitudes	H	
OOC.3.3.10	Evaluate candidate alternative changes with respect to knowledge of what next sector will accept	H	
OOC.3.3.12	"Coordinate with subsequent sectors prior to issuance of a clearance for an alternative, if applicable"	H	
OOC.3.3.13	"Receive acceptable alternatives, if found, from subsequent sector "	H	
OOC.3.3.14	Evaluate acceptable alternatives from subsequent sector	H	
OOC.3.3.18	Determine that search for alternatives does not generate any acceptable alternatives	H	
OOC.3.4.1	Formulate search for acceptable flight plan change		E
OOC.4.1.1	"Review flight strip bays, one fix posting area at a time"		E
OOC.4.1.2	Review information recorded on flight strips		E
OOC.4.1.3	Verify reasonableness of each strip	H	
OOC.4.1.4	Verify data source		E
OOC.4.1.5	Update the strip marking		E
OOC.4.2.1	"Review flight strip bays, one fix posting area at a time"		E
OOC.4.2.2	Review information recorded on flight strips		E

OOC.4.2.3	Verify reasonableness of data on each strip	H	
OOC.4.2.4	"Compare time, altitude, and route of flight at each fix to see if a potential conflict exists"		E
OOC.4.3.1	"Review flight strip bays, one fix posting area at a time"		E
OOC.4.3.2	Review information recorded on flight strips		E
OOC.4.3.3	Verify reasonableness of data on each strip	H	
OOC.4.3.4	Compare current time and estimated time at fix		E
OOC.4.3.5	Review ODAPS PVD display of tabular list entry of overdue position reports	H	
OOC.4.3.6	Review ODL for message that flight's expected progress time is more than 10 minutes late	H	
OOC.4.3.7	Check ODL/ARINC monitor to make sure a position report was not missed	H	
OOC.4.3.8	Contact controllers in adjacent sectors to see if a position report was received for the aircraft	H	
OOC.4.3.10	Request a position report	H	
OOC.4.3.11	Receive position report		E
OOC.4.3.12	Initiate a communications search for contact with aircraft		E
OOC.4.3.13	Direct emergency services as specified by order and procedures		E
OOC.4.4.1	"Review flight strip bays, one fix posting area at a time"	H	
OOC.4.4.2	Review information recorded on flight strips	H	
OOC.4.4.3	Determine options for traffic in the sector	H	
OOC.4.4.4	Formulate a plan for traffic in the sector	H	
OOC.4.4.5	Evaluate the plan for traffic in the sector	H	
OOC.4.4.6	Update the plan for traffic in the sector	H	
OOC.4.5.1	Contact other controller/ARINC		E
OOC.4.5.2	Conduct communication of necessary information		E
OOC.4.6.1	Resequence flight strips	H	
OOC.4.6.2	Remove old flight strips	H	
OOC.4.7.5	Verify that a flight plan has been submitted for VFR flights operating outside controlled airspace	H	
OOC.4.7.6	Verify that VFR flight maintains continuous listening watch on appropriate radio frequency	H	
OOC.4.7.7	Receive position report from VFR flight at least every 1 hour and 20 minutes		E
OOC.4.7.8	Initiate flight following and alerting services to VFR flight	H	
OOC.4.7.9	"Receive ""operations normal"" report hourly from VFR aircraft operating within a defined geographical area as opposed to being on a point-to-point route"	H	
OOC.4.8.1	"Verify aircraft are at same flight level, or aircraft are climbing/descending to same flight level, or aircraft is climbing/descending through another A/C's altitude"		E
OOC.4.8.2	Verify aircraft have not been assigned a block altitude		E

OOC.4.8.3	Issue a MACH number to aircraft exiting FIR or when necessary		E
OOC.4.8.6	Verify aircraft follow the same track or continuously diverging track		E
OOC.4.8.7	Verify that radar is used to ensure that the appropriate time interval will exist at the common point		E
OOC.4.8.8	Verify radar is used such that appropriate time interval will exist at a significant point on each track from which tracks continuously diverge		E
OOC.4.8.9	Initiate reduced MACH technique prior to the point where second aircraft transitions from offshore airspace to oceanic airspace		E
OOC.4.8.10	Verify aircraft must be following the same or constantly diverging track		E
OOC.4.8.11	Initiate reduced MACH technique when one/both aircraft are under radar control		E
OOC.4.8.12	Initiate reduced MACH technique when both aircraft have reported over the same DME fix or land-based NAVAID established with proper longitudinal separation		E
OOC.4.8.13	Verify sufficient longitudinal separation to ensure appropriate minima will exist until another form of separation is achieved		E
OOC.4.9.1	Issue an altitude where standard lateral and vertical separation is maintained		E
OOC.4.10.1	Brief relieving controller on sector operations		E
OOC.4.10.2	Sign off at position	H	
OOC.4.10.3	Sign on at position	H	
OOC.4.10.4	Verify completeness of relief briefing receipt		E
OOC.4.10.5	Conduct post-brief observation		E
OOC.4.11.1	Review Equipment Status	H	
OOC.4.11.2	Review current and projected traffic or weather	H	
OOC.4.11.3	Review flight progress strips and displayed lists for correlation	H	
OOC.4.11.4	Receive controller relief briefing		E
OOC.4.11.5	Review briefing checklist or notes to assure completeness of briefing coverage		E
OOC.4.11.6	Determine if ready to accept control responsibility	H	
OOC.4.11.7	Sign on at position	H	
OOC.4.11.8	Verify that all required display parameters are properly set	H	
OOC.5.1.1	"Determine an appropriate course of action which guarantees safety as a first priority, but expedites the flow of air traffic to the extent possible"		E
OOC.5.1.4	Formulate manual flight strips		E
OOC.5.1.5	Update manual flight strips		E
OOC.5.1.6	Initiate a ground stop for affected oceanic flights		E
OOC.5.1.7	Direct increased spacing between aircraft and/or impose route restrictions to compensate for higher controller workload		E
OOC.5.1.8	"Switch to alternate communication links, such		E

	as commercial telephone lines"		
OOC.5.2.1	Inform oceanic supervisor of any indication that HF communication service is or will be unavailable or restricted		E
OOC.5.2.2	Coordinate with each oceanic sector that is or will be controlling the aircraft before issuing a clearance or approval	H	
OOC.5.2.3	Direct increased spacing between aircraft and/or impose route restrictions to compensate for higher controller workload		E
OOC.5.2.4	Project the traffic flow in order to take into account the possibility of not being able to intervene in the future to prevent conflicts	H	
OOC.5.2.5	Inhibit additional traffic from entering affected airspace		E
OOC.5.2.6	Conduct attempts for communication with satellite-equipped aircraft		E
OOC.5.2.7	"Conduct attempts for HF, UHF, or VHF communication relays through ATC facilities within their range of VHF (500 miles)"		E
OOC.5.2.8	Conduct attempts to use aircraft companies/commands to send messages directly to aircraft by radio (ACARS)		E
OOC.5.2.9	Conduct attempts to use military global command and control (GCCS) stations for phone patches with military aircraft		E
OOC.5.2.10	Conduct attempts to use CPDLC equipped aircraft to relay messages to other aircraft		E
OOC.5.2.11	Conduct attempts to use an aircraft to relay messages to other aircraft within 500 mile radius for air-to-air relay		E
OOC.5.2.12	Receive contact from ARINC operators by voice instead of ODL/ARINC Monitor		E
OOC.5.3.1	Direct larger-than-normal separation distances from the failed aircraft		E
OOC.5.3.2	Direct other aircraft away in altitude from the failed aircraft		E
OOC.5.3.3	Assign one altitude or block of altitudes reserved for the failed aircraft within a large area		E
OOC.6.1.1	"Receive notification from pilot that aircraft is invoking ""military assumes responsibility for separation of aircraft"" (MARSA) OPS with another A/C and/or released airspace"	H	
OOC.6.1.3	Verify aircraft is MARSA with another aircraft and/or released airspace		E
OOC.6.1.4	Issue IFR separation between MARSA aircraft and other IFR flights		E
OOC.6.1.5	Terminate providing IFR separation between MARSA aircraft and/or released airspace	H	
OOC.6.2.1	Issue separation to non-participating aircraft from airspace released to the Air Defense Control Facility (ADCF)		E
OOC.6.2.2	Verify that NOPAR is entered in the remarks section of the flight plan		E

OOC.6.3.1	Verify aircraft transiting to and from Navy exercises have an IFR flight plan	H	
OOC.6.5.1	Issue cancellation of ALTRV for aircraft requesting a routing or altitude change which is not in the approved ALTRV	H	
OOC.6.5.2	Initiate change to ALTRV due to safety or other extraordinary circumstances		E
OOC.6.5.3	Terminate MARSA	H	
OOC.6.5.4	Issue separation		E
OOC.6.5.5	Issue clearance to aircraft to return to the ALTRV as soon as practicable		E
OOC.6.5.6	Verify reestablishment of MARSA if aircraft route or altitude is changed from the approved ALTRV	H	
OOC.6.5.7	Receive tanker's declaration of MARSA with receiving aircraft	H	
OOC.6.5.8	Issue clearance to tanker to common altitude with receiver although altitude has not been processed as an ALTRV request		E
OOC.6.5.9	Review airfile or flight plan for information on common altitude and identification of other aircraft	H	
OOC.6.6.3	Issue AMIS directly to ADCF via voice circuits on all IFR flights classified as NORAD special interest flight and for aircraft transporting president and vice president		E
OOC.7.1.1	Determine that special attention or handling for a particular emergency situation is warranted		E
OOC.7.1.2	Request for a communications path to the aircraft from ARINC in order to talk directly to the pilot to resolve problem		E
OOC.7.1.3	"Issue advisory to pilot including ""Unable due to traffic"", quote of traffic, alternative options, and ""Advise intentions"""		E
OOC.7.1.4	Receive pilot intentions		E
OOC.7.1.5	Issue advisory that an emergency descent is in progress to other aircraft in the vicinity of the emergency aircraft		E
OOC.7.1.6	Receive report from emergency aircraft that the emergency descent has been completed		E
OOC.7.1.7	Issue advisory that descent is complete to other aircraft in the vicinity of the emergency aircraft		E
OOC.7.1.8	Issue clearances to other aircraft in conflict with the emergency aircraft to re-establish separation		E
OOC.7.1.9	Receive reports from other aircraft re-establishing IFR separation		E
OOC.7.2.1	"Receive notice from pilot that weather avoidance deviation is required, including direction of course deviation and anticipated number of miles deviation requires"		E
OOC.7.2.2	"Issue advisory to pilot ""Unable deviation due to traffic"", quote traffic, issue alternatives, request ""Advise intentions"""		E
OOC.7.2.3	Issue traffic advisories to all affected flights		E

OOC.7.2.4	Conduct actions to separate affected aircraft		E
OOC.7.2.5	Approve pilot's request to deviate around weather		E
OOC.7.2.6	"Request that pilot report ""Established back on course"""	H	
OOC.7.2.7	"Receive request from pilot for permission for weather avoidance deviation, including direction of course deviation, anticipated number of miles required"		E
OOC.7.2.8	"Receive advisory from pilot ""Aircraft will not deviate for weather"""	H	
OOC.7.3.1	Receive Oceanic SIGMET		E
OOC.7.3.2	Broadcast SIGMETs to all affected aircraft when required		E
OOC.7.3.6	Relay specific aircraft identifications and content to SIGMET to ARINC		E
OOC.7.3.7	Issue each SIGMET received to all affected flights		E
OOC.7.3.8	Request a pilot report (PIREP) from each aircraft transiting the affected area	H	
OOC.7.3.9	"Forward PIREPS to the center weather service unit, or the weather coordinator"	H	
OOC.7.3.10	Receive significant weather PIREP		E
OOC.7.3.11	Forward significant weather PIREP to any affected flights within one hour flying time of the position of the PIREP until a SIGMET can be issued		E
OOC.7.4.1	Contact oceanic area supervisor that a situation exists requiring activation of the alerting service		E
OOC.7.4.2	"Forward aircraft identification, estimated position and other pertinent information to supervisor to ascertain phase of alerting service required and to complete form 7100-5"		E

Table E-1. ZAN Tasks Identified as Being Somewhat Difficult or Very Difficult to Perform.

Task No.	Task Statement	Somewhat Difficult	Very Difficult
AOC.1.1.11	Evaluate existing traffic and sector plan(s)	S	
AOC.1.1.12	Formulate departure clearance	S	
AOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts	S	
AOC.1.2.4	Direct traffic flow to merge one or more westbound tracks of the NOPAC	S	
AOC.1.2.8	"Relay clearance to pilot via appropriate means (e.g., direct VHF communications, ARINC, tower, base operations, pilot relay)"	S	
AOC.1.2.14	Retract clearance	S	
AOC.1.2.15	Initiate a communications search for aircraft	S	
AOC.1.3.2	Verify flight data shown on flight progress strip with adjacent facility controller	S	
AOC.1.3.5	Evaluate route and altitude for conflicts	S	
AOC.1.3.8	Issue control instructions to transferring controller	S	
AOC.1.4.1	Coordinate with adjacent sector/facility in control of flight(s) to resolve detected conflicts	S	
AOC.1.4.2	Evaluate alternate solutions and provide viable solution to adjacent sector/facility for selection and coordination with pilot	S	
AOC.1.6.4	"Forward A/C ID, transfer of control point, latest estimate to transfer of control point, coordinated altitude, mach number (if appropriate), control information/remarks"	S	
AOC.1.6.5	Forward aircraft's flight plan	S	
AOC.1.6.9	Select alternatives that do not cause a near-term conflict with your sector's traffic	S	
AOC.1.6.10	Issue alternatives to pilot	S	
AOC.1.6.11	Receive response of preferred alternative from pilot	S	
AOC.1.7.1	"Forward A/C callsign, fix or lat/long, control time at that point, pilot's estimate (if necessary), assigned altitude, assigned mach number, remarks"	S	
AOC.1.8.1	Coordinate changes with receiving controller	S	
AOC.1.8.2	Deny pilot's requested changes	S	
AOC.1.10.1	Forward flight information to adjacent facility or sector	S	
AOC.1.11.5	Determine that control of an aircraft in an adjacent sector/facility is required	S	
AOC.1.11.6	Issue alternate instructions to adjacent sector/facility	S	
AOC.2.1.3	"Determine if information in position report is valid and reasonable, by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA"	S	
AOC.2.1.4	Determine if controller's estimate of transit times between fixes are more reasonable than pilot's estimates	S	
AOC.2.2.1	Update the previous control time	S	
AOC.2.2.2	Update control time at subsequent fixes	S	
AOC.2.2.3	Enter controller's and/or pilot's time estimate/progress report marking on flight strip	S	
AOC.2.3.4	Determine position report information is garble or inconsistent with current flight plan	S	
AOC.2.3.5	Contact pilot to confirm current information	S	

AOC.2.4.1	Review the current and expected times and altitudes of all aircraft at each fix to see if a potential conflict exists relative to the applicable separation standards	S	
AOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any other aircraft"	S	
AOC.2.4.3	Determine that immediate action is required	S	
AOC.2.4.4	Determine options that will resolve the conflict	S	
AOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft	S	
NOC.2.4.6	"Select an option which is free of immediate conflicts, is compatible with the sector traffic plan, and considers user preferences"	S	
AOC.2.4.7	Issue alternative(s) to transferring controller	S	
AOC.2.4.8	Enter amended flight data on flight strip	S	
AOC.2.4.9	Enter clearance amendment into computer as amendment message	S	
AOC.2.4.10	Receive acknowledgement from aircraft of new clearance	S	
AOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable	S	
AOC.2.4.14	Evaluate each option by looking at radar display of each aircraft	S	
AOC.2.7.1	Compare the new position report information with plan for traffic in the sector	S	
AOC.3.1.6	Review flight plan change request	S	
AOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft or airspace	S	
AOC.3.1.11	Evaluate change request based on sector traffic plan(s)	S	
AOC.3.1.12	Evaluate change request based on altitude restrictions for direction of travel	S	
AOC.3.1.13	Evaluate change request based on potential for request accommodation/coordination before transfer to next sector/facility	S	
AOC.3.1.14	Evaluate change request based on knowledge about what the next sector/facility is likely to accept	S	
AOC.3.1.15	Evaluate change request for conflicts based on flight strips and PVD information	S	
AOC.3.1.18	Determine whether change request is acceptable	S	
AOC.3.2.15	"Coordinate change with subsequent facility (e.g., Oakland, Tokyo) before issuing clearance if flight is within 30 minutes of FIR boundary"	S	
AOC.3.4.1	Formulate search for acceptable flight plan change	S	
AOC.3.4.3	Evaluate alternative changes with respect to potential conflicts with other aircraft or airspace	S	
AOC.3.4.4	Evaluate alternative changes with respect to sector traffic plan(s)	S	
AOC.3.4.5	Evaluate alternative changes with respect to direction-of-travel altitude restrictions	S	
AOC.3.4.6	Evaluate alternative changes with respect to potential request accommodation/coordination	S	
AOC.3.4.7	Evaluate alternative changes with respect to knowledge of what next sector will accept	S	
AOC.4.1.2	Review information recorded on flight strips	S	
AOC.4.1.3	Verify reasonableness of each strip	S	
AOC.4.1.4	Verify accuracy of data	S	
AOC.4.2.1	"Review flight strip bays, one fix posting area at a time"	S	

AOC.4.2.2	Review information recorded on flight strips	S	
AOC.4.2.4	"Compare time, altitude, and route of flight to see if a potential conflict exists"	S	
AOC.4.2.5	Review traffic situation on PVD	S	
AOC.4.3.1	"Review flight strip bays, one fix posting area at a time"	S	
AOC.4.3.2	Review information recorded on flight strips	S	
AOC.4.3.3	Verify reasonableness of data on each strip	S	
AOC.4.3.4	Compare current time and estimated time at fix	S	
AOC.4.3.9	Contact ARINC by OCS or land-line	S	
AOC.4.3.10	Request a position report from ARINC	S	
AOC.4.3.12	Initiate a communications search for contact with aircraft as specified by orders and procedures	S	
AOC.4.3.14	Contact aircraft by radio	S	
AOC.4.3.15	Request ARINC to advise the pilot to contact ZAN via radio	S	
AOC.4.4.1	"Review flight strip bays, one fix posting area at a time"	S	
AOC.4.4.2	Review information recorded on flight strips	S	
AOC.4.4.3	Determine options for traffic in the sector	S	
AOC.4.4.4	Formulate a plan for traffic in the sector	S	
AOC.4.4.5	Evaluate the plan for traffic in the sector	S	
AOC.4.4.6	Update the plan for traffic in the sector	S	
AOC.4.4.7	Review factors such as management of traffic flows for merging or crossing routes	S	
AOC.4.4.8	Review factors such as current or anticipated pilot requests for route or altitude changes	S	
AOC.4.4.9	Review factors such as contingencies	S	
AOC.4.4.11	Update flight strips to reflect current information	S	
AOC.4.5.1	Contact other controller/ARINC	S	
AOC.4.5.2	Conduct communication of necessary information	S	
AOC.4.6.1	Resequence flight strips	S	
AOC.4.8.1	"Verify aircraft are at same flight level, or aircraft are climbing/descending to same flight level, or aircraft is climbing/descending through another A/C's altitude"	S	
AOC.4.8.6	Verify aircraft follow the same track or continuously diverging track	S	
AOC.4.8.7	Verify that radar is used to ensure that the appropriate time interval will exist at the common point	S	
AOC.4.8.8	Verify radar is used such that appropriate time interval will exist at a significant point on each track from which tracks continuously diverge	S	
AOC.4.8.13	Issue sufficient longitudinal separation to ensure appropriate minima will exist until another form of separation is achieved	S	
AOC.4.8.15	Verify via position reports and control estimates that the appropriate time interval exists over the common point	S	
AOC.4.8.16	Verify via pilot estimates that the appropriate time interval exists at the point from which tracks continuously diverge	S	
AOC.4.10.1	Brief relieving controller on sector operations using position relief briefing checklist	S	
AOC.4.10.4	Verify completeness of relief briefing receipt	S	
AOC.4.11.1	Review system status to determine currency or updates	S	
AOC.4.11.2	Review current and projected traffic or weather	S	
AOC.4.11.3	Review flight progress strips and displayed lists for correlation	S	
AOC.4.11.4	"Receive controller relief briefing using briefing checklist, and notes (if applicable) to assure completeness of briefing coverage"	S	

AOC.4.11.6	Determine if ready to accept control responsibility	S	
AOC.5.1.1	"Determine an appropriate course of action which guarantees safety as a first priority, but expedites the flow of air traffic to the extent possible"		V
AOC.5.1.3	Determine course of action through use of procedures	S	
AOC.5.1.4	Formulate manual flight strips	S	
AOC.5.1.5	Update manual flight strips	S	
AOC.5.1.6	"Initiate a traffic management initiative for affected oceanic flights (e.g., ground stop)"	S	
AOC.5.1.8	"Switch to alternate communication links, such as commercial telephone lines, ARINC, aircraft communications relay, or teletype"	S	
AOC.5.2.3	Direct clearance or approval for a larger-than-normal margin of separation between aircraft over the entire route of flight within oceanic control area	S	
AOC.5.2.4	Project the traffic flow in order to take into account the possibility of not being able to intervene in the future to prevent conflicts		V
AOC.5.2.5	Coordinate restrictions on additional traffic entering the affected airspace	S	
AOC.5.2.6	Conduct attempts for communication with satellite-equipped aircraft through ARINC	S	
AOC.5.2.7	"Conduct attempts for HF, UHF, or VHF communication relays through ATC facilities within their ranges"	S	
AOC.5.2.8	Conduct attempts to use aircraft companies/commands to send messages directly to aircraft by radio (ACARS)	S	
AOC.5.2.9	Conduct attempts to use military global command and control (GCCS) stations for phone patches with military aircraft	S	
AOC.5.2.11	Conduct attempts to use an aircraft to relay messages to other aircraft within 500 mile radius for air-to-air relay	S	
AOC.5.2.14	Establish attempt to contact aircraft on other VHF/HF frequencies	S	
AOC.5.2.15	Conduct a relay link with other nearby aircraft	S	
AOC.6.1.1	"Receive notification from pilot that aircraft is invoking ""military assumes responsibility for separation of aircraft"" (MARSA) OPS with another A/C and/or released airspace"	S	
AOC.6.1.3	Verify aircraft is MARSA with another aircraft and/or released airspace	S	
AOC.6.1.4	Issue clearances to ensure IFR separation between MARSA aircraft and other IFR flights	S	
AOC.6.1.5	Terminate providing IFR separation between MARSA aircraft and/or released airspace	S	
AOC.6.2.1	Issue clearances to ensure separation of non-participating aircraft from airspace released to the air defense control facility (ADCF)	S	
AOC.6.5.1	Issue cancellation of ALTRV for aircraft requesting a routing or altitude change which is not in the approved ALTRV	S	
AOC.6.5.2	Initiate change to ALTRV due to safety or other extraordinary circumstances	S	
AOC.6.5.4	Issue clearance(s) to establish separation	S	
AOC.6.5.5	Issue clearance to aircraft to return to the ALTRV as soon as practicable	S	
AOC.6.5.6	Verify reestablishment of MARSA if aircraft route or altitude is changed from the approved ALTRV	S	
AOC.6.7.1	Receive aircraft request for clearance to refuel	S	

AOC.6.7.2	Verify that tanker aircraft has accepted MARSA with all aircraft involved in refueling mission	S	
AOC.6.7.3	"Assign a block altitude of 3000 feet or greater regardless of altitude (e.g., 190B210, 290B310)"	S	
AOC.6.7.4	"Issue clearance to tanker authorizing refueling along a specified track, or between coordinates along a point-to-point route of flight"	S	
AOC.6.7.5	Receive message from tanker that refueling has ended or will end shortly	S	
AOC.6.7.6	Issue clearance effective at the exit point (end of refueling) for each aircraft in the refueling operations	S	
AOC.6.7.7	Receive acknowledgement of each aircraft through tanker crew	S	
AOC.6.7.8	Receive message from tanker that tanker and receiver aircraft are positioned with appropriate vertical separation at termination of refueling	S	
AOC.6.7.9	Terminate MARSA	S	
AOC.7.1.1	Determine if special attention or handling for a particular situation is warranted	S	
AOC.7.1.3	"Issue advisory to pilot including ""Unable due to traffic"", quote of traffic, alternative options, and ""Advise intentions"""	S	
AOC.7.1.4	Receive pilot intentions	S	
AOC.7.1.6	Receive report from emergency aircraft that the emergency descent has been completed	S	
AOC.7.1.7	Issue advisory that descent is complete to other aircraft in the vicinity of the emergency aircraft	S	
AOC.7.1.8	Issue clearances to other aircraft in conflict with the emergency aircraft to re-establish separation	S	
AOC.7.1.9	Receive reports from other aircraft re-establishing IFR separation	S	
AOC.7.1.10	Receive notification of a potential aircraft emergency situation	S	
AOC.7.1.11	Review nature of the emergency and pilot intentions	S	
AOC.7.1.13	Observe situation for new developments	S	
AOC.7.2.1	"Receive notice from pilot that weather avoidance deviation is required, including direction of course deviation and anticipated number of miles deviation requires"	S	
AOC.7.2.2	"Issue advisory to pilot including ""Unable deviation due to traffic"", quote traffic, issue alternatives, request ""Advise intentions"""	S	
AOC.7.2.3	Issue traffic advisories to all affected flights	S	
AOC.7.2.4	Conduct actions to separate affected aircraft	S	
AOC.7.2.5	Approve pilot's request to deviate around weather	S	
AOC.7.2.6	"Request that pilot report ""Established back on course"""	S	
AOC.7.2.7	"Receive request from pilot for permission for weather avoidance deviation, including direction of course deviation, anticipated number of miles required"	S	
AOC.7.2.8	"Receive advisory from pilot ""Aircraft will not deviate for weather"""	S	
AOC.7.3.8	Request a pilot report (PIREP) from each aircraft transiting the affected area	S	
AOC.7.3.9	"Forward PIREPS to the center weather service unit, or the weather coordinator"	S	
AOC.7.3.10	Receive significant weather PIREP	S	
AOC.7.3.11	Forward significant weather PIREP to any affected flights within one hour flying time of the position of the PIREP until a SIGMET can be issued	S	

AOC.7.4.1	Contact area supervisor that a situation exists requiring activation of the alerting service	S	
AOC.7.4.2	"Forward aircraft identification, estimated position and other pertinent information to supervisor to ascertain phase of alerting service required and to complete form 7100-5"	S	

Table E-2. ZNY Tasks Identified as Being Somewhat Difficult or Very Difficult to Perform.

Task No.	Task Statement	Somewhat Difficult	Very Difficult
NOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts		V
NOC.1.3.4	"Review flight's estimated time of arrival (ETA) at coordination fix, altitude, and routing for reasonableness"	S	
NOC.1.3.5	Evaluate route and altitude for conflicts		V
NOC.1.3.8	Issue control instructions to transferring controller	S	
NOC.1.4.1	Coordinate with adjacent controller to resolve detected conflicts	S	
NOC.1.4.2	Negotiate viable solution with adjacent controller	S	
NOC.1.4.4	Determine alternative solution		V
NOC.1.5.1	Search flight strips to identify flights that are ready for coordination of flight plan information with the adjacent sector/facility	S	
NOC.1.5.2	Contact adjacent sector/facility a parameter number of minutes prior to aircraft's estimated boundary time	S	
NOC.1.6.2	Verify acceptance of transfer by other (non-TTY) means	S	
NOC.1.6.9	Negotiate alternatives that do not cause a near-term conflict with sector's traffic	S	
NOC.1.6.10	Relay alternatives to pilot through ARINC	S	
NOC.2.1.3	"Determine if information in position report is valid and reasonable, by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA"	S	
NOC.2.1.4	Determine if controller's estimate of transit times between fixes are more reasonable than pilot's estimates	S	
NOC.2.1.7	"Determine if the information in the discrepancy report is valid and reasonable by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA "	S	
NOC.2.2.6	Review ODAPS to help maintain mental picture of traffic for monitoring and planning	S	
NOC.2.4.1	Review the current and expected times and altitudes of other aircraft at each fix to see if a potential conflict exists		V
NOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any other aircraft"		V
NOC.2.4.3	Determine that immediate action is required		V
NOC.2.4.4	Determine options that will resolve the conflict		V
NOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft		V
NOC.2.4.6	"Select an option which is free of immediate conflicts, is compatible with the sector traffic plan, and considers user preferences"	S	

NOC.2.4.7	Issue alternative(s) to transferring controller	S	
NOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable	S	
NOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft		V
NOC.3.1.11	Evaluate change request based on plans for dealing with other aircraft in the future		V
NOC.3.1.13	Evaluate change request based on potential for intervention with the subject or other aircraft before transfer to next facility		V
NOC.3.1.14	Evaluate change request based on knowledge about what the next sector/facility is likely to accept	S	
NOC.3.1.15	Evaluate change request for conflicts based on knowledge of aircraft positions and reference to flight strips		V
NOC.3.1.16	Evaluate change request using a grease pencil and sector map to analyze change request	S	
NOC.3.1.17	Evaluate sector ODAPS TP to visually determine acceptability of flight plan change	S	
NOC.3.1.18	Determine whether change request is acceptable		V
NOC.3.2.3	Coordinate change with subsequent New York sector before granting clearance when flight is within an hour of sector boundary	S	
NOC.3.4.1	Formulate search for acceptable flight plan change		V
NOC.3.4.3	Evaluate candidate alternative changes with respect to potential conflicts with other aircraft		V
NOC.3.4.4	Evaluate candidate alternative changes with respect to plans for dealing with other aircraft		V
NOC.3.4.6	Evaluate candidate alternative changes with respect to potential for intervention before crossing sector boundary		V
NOC.3.4.7	Evaluate candidate alternative changes with respect to knowledge of what next sector will accept	S	
NOC.3.4.8	Receive denial of flight plan change from subsequent sector/facility	S	
NOC.4.1.2	Review information recorded on flight strips	S	
NOC.4.1.3	Verify reasonableness of data on each strip	S	
NOC.4.1.4	Verify accuracy of data	S	
NOC.4.2.2	Review information recorded on flight strips	S	
NOC.4.2.4	"Compare time, altitude, speed, and route of flight at each fix to see if a potential conflict exists"	S	
NOC.4.4.2	Review information recorded on flight strips	S	
NOC.4.4.3	Determine options for traffic in the sector		V
NOC.4.4.4	Formulate a plan for traffic in the sector		V
NOC.4.4.5	Evaluate the plan for traffic in the sector		V
NOC.4.4.7	Review factors such as management of traffic flows for merging or crossing routes		V
NOC.4.4.8	Review factors such as current or anticipated pilot requests for route or altitude changes	S	
NOC.4.4.9	Review factors such as contingencies	S	
NOC.4.8.6	Verify aircraft follow the same track or continuously diverging track	S	
NOC.4.8.13	Issue sufficient longitudinal separation to ensure appropriate minima will exist until another form of		V

	separation is achieved		
NOC.4.10.1	Brief relieving controller on sector operations	S	
NOC.4.10.4	Verify completeness of relief briefing receipt	S	
NOC.4.11.2	Review current and projected traffic load and weather	S	
NOC.5.1.1	"Determine an appropriate course of action which guarantees safety as a first priority, but expedites the flow of air traffic to the extent possible"	S	
NOC.5.1.2	Determine course of action through use of judgment	S	
NOC.5.1.3	Determine course of action through use of procedures	S	
NOC.5.1.4	Formulate manual flight strips	S	
NOC.5.1.8	"Switch to alternate communication links, such as commercial telephone lines"	S	
NOC.5.2.2	Coordinate with each oceanic sector that is or will be controlling the aircraft before issuing a clearance or approval	S	
NOC.5.2.4	Project the traffic flow in order to take into account the possibility of not being able to intervene in the future to prevent conflicts	S	
NOC.5.2.11	Conduct attempts to use an aircraft to relay messages to other aircraft within 500 mile radius for air-to-air relay	S	
NOC.5.3.1	Issue clearances to other aircraft separating them horizontally from failed aircraft	S	
NOC.5.3.2	Issue clearances to other aircraft separating them vertically from failed aircraft	S	
NOC.6.1.4	Issue IFR separation between MARSA aircraft requesting IFR and other IFR flights		V
NOC.6.2.1	Issue separation to non-participating aircraft from airspace released to the air defense control facility (ADCF)	S	
NOC.6.4.1	Receive a message from a military aircraft declaring itself as an operational flight	S	
NOC.6.4.2	Receive request from military flight for IFR clearance	S	
NOC.6.4.3	Formulate flight strip for requesting military aircraft	S	
NOC.6.5.1	Issue cancellation of ALTRV for aircraft requesting a routing or altitude change which is not in the approved ALTRV		V
NOC.6.5.2	Initiate change to ALTRV due to safety or other extraordinary circumstances		V
NOC.6.5.4	Issue separation		V
NOC.6.5.5	Issue clearance to aircraft to return to the ALTRV as soon as practicable	S	
NOC.6.5.8	Issue clearance to tanker to common altitude with receiver although altitude has not been processed as an ALTRV request	S	
NOC.6.5.9	Review airfile or flight plan for information on common altitude and identification of other aircraft	S	
NOC.6.7.3	"Assign at least 3 consecutive flight levels (e.g., FL180, FL190, and FL200); at FL290 and above, refueling operation remains same (e.g., FL310, FL320, and FL330)"	S	
NOC.6.7.4	"Issue clearance to tanker authorizing refueling along a specified track, or between coordinates along a point-to-point route of flight"	S	
NOC.6.7.6	Issue clearance at the exit point (end of refueling) for		V

	each aircraft in the refueling operations		
NOC.6.7.7	Receive acknowledgment of each aircraft through tanker crew	S	
NOC.7.1.1	Determine that special attention or handling for a particular emergency situation is warranted	S	
NOC.7.1.2	Request for a communications path to the aircraft from ARINC in order to talk directly to the pilot to resolve problem	S	
NOC.7.1.5	Issue advisory that an emergency descent is in progress to other aircraft in the vicinity of the emergency aircraft		V
NOC.7.1.8	Issue clearances to other aircraft in conflict with the emergency aircraft to re-establish separation		V
NOC.7.2.2	"Issue advisory to pilot ""Unable deviation due to traffic"", quote traffic, issue alternatives, request ""Advise intentions"""	S	
NOC.7.2.3	Issue traffic advisories to all affected flights	S	
NOC.7.2.4	Conduct actions to separate affected aircraft		V
NOC.7.2.5	Approve pilot's request to deviate around weather	S	

Table E-3. ZOA Tasks Identified as Being Somewhat Difficult or Very Difficult to Perform.

Task No.	Task Statement	Somewhat Difficult	Very Difficult
OOC.1.1.1	Receive oceanic release request from an external facility or adjacent sector	S	
OOC.1.1.4	Evaluate existing traffic and oceanic releases	S	
OOC.1.1.11	Evaluate existing traffic and sector plan(s)	S	
OOC.1.1.12	Formulate departure clearance	S	
OOC.1.2.1	Evaluate incoming flow in relation to existing flight(s) to identify potential conflicts	S	
OOC.1.2.7	Check situation display to verify clearance	S	
OOC.1.2.8	"Relay clearance to pilot via appropriate means (e.g., ARINC, tower, base operations, pilot relay)"	S	
OOC.1.2.15	Initiate a communications search for aircraft	S	
OOC.1.2.16	Direct emergency services as specified by order and procedures	S	
OOC.1.3.4	"Review flight's estimated time of arrival (ETA) at coordination fix, altitude, and routing for reasonableness"	S	
OOC.1.3.5	Evaluate route and altitude for conflicts	S	
OOC.1.4.1	Coordinate with adjacent facility in control of flight(s) to resolve detected conflicts	S	
OOC.1.4.2	Evaluate alternate solutions and provide viable solution to adjacent facility for selection and coordination with pilot		V
OOC.1.4.3	Coordinate resolution of conflict	S	
OOC.1.6.2	Coordinate verbally to verify acceptance of transfer	S	
OOC.1.6.5	Forward aircraft's flight plan	S	
OOC.1.6.9	Select alternatives that do not cause a near-term conflict with sector's traffic	S	
OOC.1.10.5	"Forward flight information to Honiara FIC, Nauru radio and next adjacent ACC along aircraft's route of flight"	S	
OOC.2.1.3	"Determine if information in position report is valid and reasonable, by checking A/C ID, altitude, fix name, time at fix, current FLT level, following fix name and ETA, ensuing fix"	S	
OOC.2.1.4	Determine if controller's estimate of transit times between fixes are more reasonable than pilot's estimates	S	
OOC.2.1.6	Review ODAPS FDIO for ODAPS discrepancy reports	S	
OOC.2.2.1	Update the previous control time	S	
OOC.2.2.2	Update control time at subsequent fixes	S	
OOC.2.4.1	Review the current and expected times and altitudes of other aircraft at each fix to see if a potential conflict exists		V

OOC.2.4.2	"Review separation standards applicable to the airspace to see if the aircraft loses vertical, longitudinal, or lateral separation with any other aircraft"		V
OOC.2.4.3	Determine that immediate action is required		V
OOC.2.4.4	Determine options that will resolve the conflict		V
OOC.2.4.5	Evaluate each option by looking at flight strips of other aircraft		V
OOC.2.4.6	Select an option which is free of immediate conflicts and is compatible with the sector traffic plan		V
OOC.2.4.7	Issue alternative(s) to transferring controller	S	
OOC.2.4.11	Coordinate clearance in order to develop a resolution that will be acceptable	S	
OOC.2.6.3	"Issue a PIREP regarding icing, turbulence, or severe weather conditions"	S	
OOC.2.7.1	Compare mentally the new position report information with plan for traffic in the sector	S	
OOC.3.1.2	Receive pilot change request from ARINC by voice with hard-copy confirmation to follow	S	
OOC.3.1.6	Review flight plan change request	S	
OOC.3.1.10	Evaluate change request based on potential conflicts with other aircraft	S	
OOC.3.1.11	Evaluate change request based on plans for dealing with other aircraft in the future	S	
OOC.3.1.16	Evaluate change request using a grease pencil and sector map to analyze change request	S	
OOC.3.1.18	Determine whether change request is acceptable	S	
OOC.3.3.1	Determine flight plan change is not acceptable	S	
OOC.3.3.5	Formulate candidate alternative changes	S	
OOC.3.3.6	Evaluate candidate alternative changes with respect to potential conflicts with other aircraft	S	
OOC.3.3.7	Evaluate candidate alternative changes with respect to plans for dealing with other aircraft	S	
OOC.3.3.14	Evaluate acceptable alternatives from subsequent sector	S	
OOC.3.3.18	Determine that search for alternatives does not generate any acceptable alternatives	S	
OOC.3.4.1	Formulate search for acceptable flight plan change	S	
OOC.4.1.1	"Review flight strip bays, one fix posting area at a time"	S	
OOC.4.1.2	Review information recorded on flight strips	S	
OOC.4.1.3	Verify reasonableness of each strip	S	
OOC.4.1.4	Verify data source	S	
OOC.4.2.1	"Review flight strip bays, one fix posting area at a time"	S	
OOC.4.2.2	Review information recorded on flight strips	S	
OOC.4.2.3	Verify reasonableness of data on each strip	S	
OOC.4.2.4	"Compare time, altitude, and route of flight at each fix to see if a potential conflict exists"	S	
OOC.4.3.12	Initiate a communications search for contact with aircraft		V

OOC.4.3.13	Direct emergency services as specified by order and procedures		V
OOC.4.4.3	Determine options for traffic in the sector	S	
OOC.4.4.4	Formulate a plan for traffic in the sector	S	
OOC.4.4.5	Evaluate the plan for traffic in the sector	S	
OOC.4.4.6	Update the plan for traffic in the sector	S	
OOC.4.5.1	Contact other controller/ARINC	S	
OOC.4.5.2	Conduct communication of necessary information	S	
OOC.4.7.1	Verify flight is not operated between sunset and sunrise	S	
OOC.4.7.2	"Verify flight is not operated within CTA, except when operating within 100 nautical miles of shoreline of any land mass and is below FL200"	S	
OOC.4.7.3	Verify flight is not operated above FL055	S	
OOC.4.7.5	Verify that a flight plan has been submitted for VFR flights operating outside controlled airspace	S	
OOC.4.7.6	Verify that VFR flight maintains continuous listening watch on appropriate radio frequency	S	
OOC.4.7.7	Receive position report from VFR flight at least every 1 hour and 20 minutes		V
OOC.4.7.8	Initiate flight following and alerting services to VFR flight		V
OOC.4.7.9	"Receive ""operations normal"" report hourly from VFR aircraft operating within a defined geographical area as opposed to being on a point-to-point route"	S	
OOC.4.8.6	Verify aircraft follow the same track or continuously diverging track	S	
OOC.4.8.7	Verify that radar is used to ensure that the appropriate time interval will exist at the common point	S	
OOC.4.8.8	Verify radar is used such that appropriate time interval will exist at a significant point on each track from which tracks continuously diverge	S	
OOC.4.8.10	Verify aircraft must be following the same or constantly diverging track	S	
OOC.4.8.12	Initiate reduced MACH technique when both aircraft have reported over the same DME fix or land-based NAVAID established with proper longitudinal separation		V
OOC.4.8.13	Verify sufficient longitudinal separation to ensure appropriate minima will exist until another form of separation is achieved	S	
OOC.4.9.1	Issue an altitude where standard lateral and vertical separation is maintained	S	
OOC.4.10.1	Brief relieving controller on sector operations		V
OOC.4.10.4	Verify completeness of relief briefing receipt		V
OOC.4.10.5	Conduct post-brief observation	S	
OOC.4.11.1	Review Equipment Status	S	
OOC.4.11.2	Review current and projected traffic or weather	S	
OOC.4.11.3	Review flight progress strips and displayed lists	S	

	for correlation		
OOC.4.11.4	Receive controller relief briefing		V
OOC.4.11.5	Review briefing checklist or notes to assure completeness of briefing coverage		V
OOC.4.11.6	Determine if ready to accept control responsibility	S	
OOC.5.1.1	"Determine an appropriate course of action which guarantees safety as a first priority, but expedites the flow of air traffic to the extent possible"		V
OOC.5.1.4	Formulate manual flight strips		V
OOC.5.1.5	Update manual flight strips	S	
OOC.5.1.6	Initiate a ground stop for affected oceanic flights		V
OOC.5.1.7	Direct increased spacing between aircraft and/or impose route restrictions to compensate for higher controller workload		V
OOC.5.1.8	"Switch to alternate communication links, such as commercial telephone lines"	S	
OOC.5.2.1	Inform oceanic supervisor of any indication that HF communication service is or will be unavailable or restricted	S	
OOC.5.2.2	Coordinate with each oceanic sector that is or will be controlling the aircraft before issuing a clearance or approval	S	
OOC.5.2.3	Direct increased spacing between aircraft and/or impose route restrictions to compensate for higher controller workload		V
OOC.5.2.4	Project the traffic flow in order to take into account the possibility of not being able to intervene in the future to prevent conflicts		V
OOC.5.2.5	Inhibit additional traffic from entering affected airspace		V
OOC.5.2.6	Conduct attempts for communication with satellite-equipped aircraft		V
OOC.5.2.7	"Conduct attempts for HF, UHF, or VHF communication relays through ATC facilities within their range of VHF (500 miles)"		V
OOC.5.2.8	Conduct attempts to use aircraft companies/commands to send messages directly to aircraft by radio (ACARS)		V
OOC.5.2.9	Conduct attempts to use military global command and control (GCCS) stations for phone patches with military aircraft		V
OOC.5.2.10	Conduct attempts to use CPDLC equipped aircraft to relay messages to other aircraft		V
OOC.5.2.11	Conduct attempts to use an aircraft to relay messages to other aircraft within 500 mile radius for air-to-air relay		V
OOC.5.2.12	Receive contact from ARINC operators by voice instead of ODL/ARINC Monitor		V
OOC.5.3.1	Direct larger-than-normal separation distances from the failed aircraft		V
OOC.5.3.2	Direct other aircraft away in altitude from the		V

	failed aircraft		
OOC.5.3.3	Assign one altitude or block of altitudes reserved for the failed aircraft within a large area	S	
OOC.6.1.4	Issue IFR separation between MARSA aircraft and other IFR flights	S	
OOC.6.2.1	Issue separation to non-participating aircraft from airspace released to the Air Defense Control Facility (ADCF)	S	
OOC.6.3.1	Verify aircraft transiting to and from Navy exercises have an IFR flight plan	S	
OOC.6.5.1	Issue cancellation of ALTRV for aircraft requesting a routing or altitude change which is not in the approved ALTRV	S	
OOC.6.5.2	Initiate change to ALTRV due to safety or other extraordinary circumstances		V
OOC.6.5.4	Issue separation	S	
OOC.6.5.5	Issue clearance to aircraft to return to the ALTRV as soon as practicable	S	
OOC.6.5.6	Verify reestablishment of MARSA if aircraft route or altitude is changed from the approved ALTRV	S	
OOC.6.5.8	Issue clearance to tanker to common altitude with receiver although altitude has not been processed as an ALTRV request	S	
OOC.6.6.1	"Forward A/C ID, route of flight from approximately 130 degrees west long. to 1st land based NAVAID, est. for 1st fix on route, alt.; if NORAD special int. flt, dest airport"	S	
OOC.6.6.3	Issue AMIS directly to ADCF via voice circuits on all IFR flights classified as NORAD special interest flight and for aircraft transporting president and vice president	S	
OOC.7.1.1	Determine that special attention or handling for a particular emergency situation is warranted		V
OOC.7.1.2	Request for a communications path to the aircraft from ARINC in order to talk directly to the pilot to resolve problem		V
OOC.7.1.3	"Issue advisory to pilot including ""Unable due to traffic"", quote of traffic, alternative options, and ""Advise intentions"""		V
OOC.7.1.5	Issue advisory that an emergency descent is in progress to other aircraft in the vicinity of the emergency aircraft		V
OOC.7.1.7	Issue advisory that descent is complete to other aircraft in the vicinity of the emergency aircraft		V
OOC.7.1.8	Issue clearances to other aircraft in conflict with the emergency aircraft to re-establish separation		V
OOC.7.2.1	"Receive notice from pilot that weather avoidance deviation is required, including direction of course deviation and anticipated number of miles deviation requires"	S	
OOC.7.2.2	"Issue advisory to pilot ""Unable deviation due		V

	to traffic"", quote traffic, issue alternatives, request ""Advise intentions"""		
OOC.7.2.3	Issue traffic advisories to all affected flights		V
OOC.7.2.4	Conduct actions to separate affected aircraft		V
OOC.7.2.5	Approve pilot's request to deviate around weather	S	
OOC.7.2.7	"Receive request from pilot for permission for weather avoidance deviation, including direction of course deviation, anticipated number of miles required"	S	
OOC.7.3.1	Receive Oceanic SIGMET	S	
OOC.7.3.2	Broadcast SIGMETs to all affected aircraft when required	S	
OOC.7.3.6	Relay specific aircraft identifications and content to SIGMET to ARINC	S	
OOC.7.3.7	Issue each SIGMET received to all affected flights	S	
OOC.7.3.11	Forward significant weather PIREP to any affected flights within one hour flying time of the position of the PIREP until a SIGMET can be issued	S	
OOC.7.4.2	"Forward aircraft identification, estimated position and other pertinent information to supervisor to ascertain phase of alerting service required and to complete form 7100-5"		V