International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)
Sixth Meeting of the Air Traffic Management / Communications, Navigation and Surveillance Subgroup (ATM/CNS/SG/6) - ATM Committee
Boca Chica, Dominican Republic, 30 June-4 July 2008

Agenda Item 2: Report of the ATM Committee Task Forces
2.2 Air Traffic Flow Management (ATFM)

REPORT OF THE MEETING OF THE AIR TRAFFIC FLOW MANAGEMENT (ATFM) TASK FORCE

(Presented by the Rapporteur of the Air Traffic Flow Management (ATFM) Task Force)

SUMMARY

This paper presents the report of the activities of the ATFM Task Force since the Fourteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/14), San Jose, Costa Rica, 16 – 20 April 2007.

1. Background

1.1 The Third Meeting of the GREPECAS ATM/CNS SUBGROUP ATM Committee Air Traffic Flow Management (ATFM) Task Force (ATFM/TF/3) was held in San Andres Island, Colombia, from 19 to 22 June 2007. The meeting was held after the Second Seminar on Air Traffic Flow Management in the CAR/SAM Regions which was carried out at the same location on 18 June 2007.

1.2 The Meeting was attended by 55 participants from 4 States of the CAR Region, 9 States of the SAM Region, and by 3 International Organizations (AENA, COCESNA and IFALPA).

1.3 Presentations were given by various States regarding: experiences and lessons learned during ATFM implementation; models for determining airport capacity and airport acceptance rate; and models for determining sector capacity. The Meeting also reviewed and prepared a revision to the Caribbean/South American ATFM Concept of Operations (CAR/SAM ATFM CONOPS). During the meeting, three working groups were formed to address: Airport Capacity (AC) and ATC Sector Capacity; ATFM Documentation; and Information Systems for ATFM implementation in the CAR and SAM Regions.

2. CAR/SAM ATFM CONOPS

2.1 The Meeting noted that the CAR/SAM ATFM CONOPS is a high-level document whose main objective is to define and guide ATFM implementation in a homogeneous manner in the CAR/SAM Regions. The Meeting also noted that, while ATFM planning will be carried out jointly in the two regions, ATFM implementation will be carried out according to the needs of each one of the regions involved.

2.2 In light of this, the Meeting made some modifications to the CAR/SAM ATFM CONOPS which significantly improved the document. The Meeting also requested that the Secretariat present the revised document to GREPECAS through appropriate channels for their information. The new edition (Version 1.2) includes all revisions and modifications accomplished through 22 June 2007.

3. Aerodrome Capacity and ATC Sector Capacity

3.1 The Meeting noted that one of the important foundations for providing ATFM service is the establishment of the aerodrome acceptance rate (AAR) at key aerodromes. Traffic services require a numeric value for the acceptance rate in order to: measure the aircraft demand at the aerodrome against the available capacity; establish the traffic management initiatives required to balance demand and capacity; and evaluate the effectiveness of Air Traffic Flow Management (ATFM) measures.

3.2 After reviewing the information provided and a following profitable exchange of different points of view on this matter, the Meeting recognized the need to develop a common model of application for the CAR/SAM Regions. Consequently, the Meeting agreed to create a working group whose goal will be to prepare a model for determining Aerodrome Capacity to be used by CAR/SAM States/Territories/International Organizations. The Meeting also tasked the same working group with evaluating existing methods for the determining ATC sector capacity and providing guidance material for a harmonized application.

3.3 The working group agreed to conduct its work using electronic means and to participate in monthly telephone conferences in order to review the progress of the work being done. Six telephone conferences were conducted between July 2007 and February 2008. The working group concluded that sector capacity methodology requires additional analysis.

4. ATFM Documentation

4.1 The Meeting agreed that certain ATFM documents should be developed, such as: operational procedures manuals to be used by Flow Management Units (FMUs) and Flow Management Positions (FMPs); draft ATFM training plans and ATFM training material; ATFM common terminology; and ATFM policies. Therefore, the Meeting deemed it appropriate to create a working group in order to: collect, analyze, define and propose the structure of the FMU and FMP operational manuals; analyze the ATFM common terms manual for the communication and exchange of ATFM messages; and prepare draft training plans and training material.

4.2 The working group agreed to conduct its work using electronic means and to participate in monthly telephone conferences in order to review the progress of the work being done. Six telephone conferences were conducted between July 2007 and February 2008.

4.3 The working group concluded that more analysis is required for developing the structure of the FMU/FMP operational procedures manuals, ATFM training materials, and ATFM common terminology. One concept of an FMU operational procedural manual and guidelines for ATFM common terminology are included in the **Appendix** to this Working Paper.

5. Information Systems for ATFM implementation in the CAR and SAM Regions

5.1 The Meeting agreed to create a working group to support the CAR/SAM Regions in the development and implementation of ATFM information systems. Based on a review of existing information systems and the operational needs defined by the ATFM Task Force, the working group will continue to collect, define and propose structure of the information systems for ATFM implementation of the CAR and SAM Regions; assist and guide the ATFM Task Force concerning the different information systems available for ATFM implementation; and propose and follow-up the ATFM guidelines regarding technical information systems.

5.2 The working group agreed to conduct its work using electronic means and to participate in monthly telephone conferences in order to review the progress of the work being done. Six telephone conferences were conducted between July 2007 and February 2008.

6. Looking Ahead

6.1 The high standard of aviation safety must be maintained, capacity must be expanded to meet the growing demand, and we must continue to find ways to be good stewards of our environment. The challenges are impressive and working together, the CAR/SAM States can meet the growing demands of air traffic. For example, it will be beneficial to the customers to work toward continuing the RNAV route structure into the CAR/SAM Regions from the Western Atlantic airspace and from the Gulf of Mexico. ADS-B will also be deployed in the Houston Center Oceanic airspace in the Gulf of Mexico and by working together our customers will be able to benefit from the expansion of this new technology throughout the CAR/SAM Regions.

7. Recommendation

7.1 The Meeting is invited to:

a) approve the Appendix to this paper;

b) take the necessary steps to develop :

1) the model for determining aerodrome capacity;
2) the model for determining sector capacity;
3) the model for FMU/FMP operational procedures manual;
4) the ATFM training materials; and
5) the ATFM common terminology manual; and

c) take other actions, if required.

- - - - - - - -

APPENDIX
AIR TRAFFIC FLOW MANAGEMENT (ATFM) MANUAL

Introduction

1) Definition of ATFM

ATFM is a function established with the objective of producing a safe, orderly, and expeditious flow of traffic while minimizing delays. This is accomplished through continuous analysis, coordination, and dynamic use of traffic management initiatives.

2) Purpose.

The purpose of ATFM is to balance air traffic demand with system capacity to ensure the maximum, efficient use of the system airspace. This is accomplished by ensuring that capacity is utilized to the maximum extent possible and that air traffic volume is compatible with the capacities declared by the appropriate air traffic service providers.

3) Implementation.

a) Implementing of ATFM shall be established in accordance with a view to optimizing available capacity in the use of airspace and enhancing air traffic flow management processes. It shall be based on transparency and efficiency, ensuring that capacity is provided in a flexible and timely manner, consistent with the recommendations of the ICAO Regional Air Navigation Plan.

b) Implementing shall support operational decisions by air navigation service providers, airport operators and airspace users and shall cover the following areas:

1. flight planning;
2. use of available airspace capacity during all phases of flight; and
3. the creation of a single publication for route and traffic orientation.

c) Implementing shall seek to balance the financial impact on stakeholders with expected safety improvements and the operational and technical benefits, taking into account the requirement for global interoperability;

d) Implementing shall take into consideration the requirements of the military community.

e) ATFM implementing will aim at optimizing available capacity in the use of airspace and enhancing flow management processes. It shall also be based on transparency and efficiency, ensuring that capacity is provided in a flexible and timely manner.

f) It recognizes that airspace is a common resource for all categories of users that needs to be used flexibly by all of them, ensuring fairness and transparency while taking into account security and defense needs of Member States and their commitments with international organizations.

g) Air traffic flow management should be based on principles of partnership operated in accordance with the principles laid down in the ICAO Air Navigation Plan – FASID (Doc 7754), and contain the following functions:

1. Central unit for air traffic flow management
2. Flow Management Positions
3. Operators – general aviation, air carrier, military

4. Airport Operators

h) Military aircraft operating as general air traffic should be subject to air traffic flow management measures when operating or intending to operate within airspace to which air traffic flow management measures apply.

i) Member States, air navigation service providers and air carriers provide data to ETMS through VOLPE on a voluntary basis.

j) ATFM shall apply within the Member States' airspace to:

1. all flights intended to operate or operating as general air traffic and in accordance with the instrument flight rules
2. all phases of those flights.

k) ATFM shall apply to each of the following parties, or anyone acting on their behalf, involved in air traffic flow management activities:

1. operators,
2. air traffic service providers
3. entities involved in airspace management
4. airport operators
5. the entity charged by Member States with the provision of a single central unit for flow management.

Chapter 1: Demand and Capacity

1) In order to balance demand and capacity, it is first necessary to determine the aerodrome acceptance rate (AAR) and the sector capacity. Once these capacities are established, steps can be taken to monitor and evaluate the air traffic demand and implement measures to balance demand with declared capacity. There are a variety of ATFM tools available for monitoring and evaluating demand.

2) Determining the AAR

a) Definitions:

1. **Aerodrome Acceptance Rate (AAR):** A dynamic parameter specifying the number of arrival aircraft that an airport, in conjunction with terminal airspace, ramp space, parking space, and terminal facilities can accept under specific conditions during any consecutive 60 minute period.
2. **Aerodrome Primary Runway Configuration**: An aerodrome configuration which handles 3 percent or more of the annual operations.

b) Administrative considerations:

1. Identify the organization responsible for the establishment and implementation of AARs at select aerodromes.
2. Establish optimal AARs for the aerodromes identified.
3. Review and validate the aerodrome primary runway configurations and associated AARs at least once each year.

c) Determining AARs:

1. Calculate optimal AAR values for each aerodrome runway configuration for the following weather conditions:

(a) Visual Meteorological Conditions (VMC) - weather allows vectoring for visual approaches

(b) Marginal VMC - weather does not allow vectoring for visual approaches, but visual

(c) Instrument Meteorological Conditions (IMC) – Visual approaches and visual separation on final are not possible

d) Calculate the optimal AAR as follows:

1. Determine the average ground speed crossing the runway threshold and the spacing interval required between successive arrivals

2. Divide the groundspeed by the spacing interval to determine the optimum AAR

3. Formula method: Ground speed in knots at the runway threshold divided by spacing interval at the runway threshold in miles

NOTE: when the quotient is a fraction, round down to the next whole number

Example: 130 KTS / 3.25 nm = 40 Optimum AAR = 40 arrivals per hour
25 KTS / 3.0 nm = 41.66 round down to 41
Optimum AAR = 41 arrivals per hour

4. Table method:

Table 1: Optimum AAR

Nautical miles between aircraft at the Runway Threshold										
	3	3.5	4	4.5	5	6	7	8	9	10
	Potential AAR									
Ground Speed at the Runway Threshold										
140 knots	46	40	35	31	28	23	20	17	15	14
130 knots	43	37	32	28	26	21	18	16	14	13
120 knots	40	34	30	26	24	20	17	15	13	12
110 knots	36	31	27	24	22	18	15	13	12	11

e) Identify any conditions that may reduce the optimum AAR. Conditions include:

1. Intersecting arrival and departure runways
2. Lateral distance between arrival runways
3. Dual use runways – runways that share arrivals and departures
4. Land and Hold Short operations
5. Availability of high speed taxiways
6. Airspace limitations and constraints
7. Procedural limitations (noise abatement, missed approach procedures)
8. Taxiway layouts
9. Meteorological conditions

f) Determine the adjusted AAR using the previous factors for each runway used in an aerodrome configuration.

1. Add the adjusted AARs for all runways used in an aerodrome configuration to determine the optimal AAR for that runway configuration.

2. Real-time factors may require dynamic adjustments to the optimal AAR. These include:

(a) Aircraft type and fleet mix on final
(b) Runway conditions
(c) Runway/taxiway construction
(d) Equipment outages
(e) Approach control constraints

3. POTENTIAL AAR – ADJUSTMENT FACTORS = ACTUAL AAR

Table: ACTUAL AAR - EXAMPLE

RUNWAY CONFIGURATION	AAR for VMC	AAR for MARGINAL VMC	AAR for IMC
RWY 13	24	21	19
RWY 31	23	20	17

3) Determining sector capacity

a) Definitions.

1. Sector capacity is the average sector flight time in minutes from 7am to 7pm Monday through Friday.

2. Sector capacity is established for any 15-minute time period.

b) Calculate sector capacity as follows:

1. Formula method:

$$\frac{\text{(average sector flight time in minutes)} \times \text{(60 seconds)}}{\text{36 seconds}} = \text{Sector capacity value (optimum)}$$

a. Steps:

1. Manually monitor each sector, observe, and record the average flight time in minutes. After that time is determined:

2. Multiply that value by 60 seconds in order to compute the average sector flight time in seconds

3. Then divide by 36 seconds because each flight takes 36 seconds of a controller's work time

c) This is the sector capacity value (optimum)

1. Adjustments:

a. The optimum value for a sector is then adjusted for factors such as:

(1) Airway structure
(2) Airspace volume (vertically and laterally
(3) Complexity

(a) Climbing and descending traffic
(b) Terrain, if applicable
(c) Number of adjoining sectors that require interaction
(d) Military operations

d) Table method.

Average Sector Flight Time (in minutes)	**Optimum Sector Capacity Value (aircraft count)**
3 minutes	5 aircraft
4	7
5	8
6	10
7	12
8	13
9	15
10	17
11	18
12 minutes or more	18

4) Monitoring demand
   a) Aerodrome
   b) Sector
5) Evaluating demand
   a) Evaluating the need for Traffic Management Initiatives

Chapter 2: Traffic Management Tools

1. ETMS
2. FSM
3. PROSAT

Chapter 3: Traffic Management Initiatives

1. Definition
2. Purpose
3. Types

a. Altitude initiatives
   1. Capping
   2. Tunneling
b. In-trail initiatives
   1. Miles-in-trail
   2. Minutes-in-trail
   3. Call for release (enroute spacing)
c. Fix balancing
d. Airborne holding
e. Reroutes
f. Sequencing programs
   1. Ground delay programs
   2. Ground stops

4. TMI approval authority
5. TMI processing

Chapter 3: Communications and Coordination

1. ATFM Terminology
2. Communicating traffic management information
- a. Planning telephone conferences
- b. Operational telephone conferences
- c. Web pages

3. Operations plan
4. Implementing Traffic Management Initiatives
5. Adjusting Traffic Management Initiatives
6. Cancelling Traffic Management Initiatives

Chapter 4: Organization and structure

1. Line of authority
2. Central Traffic Management Unit

2.1 Mission: Monitors and manages the flow of air traffic throughout the designated airspace system in order to produce a safe, orderly, and expeditious flow of air traffic while minimizing delays.

2.2 Duties
- a. Analysis
- b. Coordination
- c. Intra-facility
- d. Inter-facility
- e. Telephone conferences
- f. CDM approach
- g. Documentation
    1. Operational log

2.3 Local Traffic Management Unit
- a. Mission: Monitor and balance flows of air traffic within their area of responsibility.
- b. Duties
    1. Analysis
    2. Coordination
    3. Intra-facility
    4. Inter-facility
    5. Telephone conferences
    6. CDM approach
    7. Documentation
        a. Operational log
- 3. Interface with International Traffic Management Units

Chapter 5: System performance metrics

1. Actual arrival and departure counts for main airports
2. Delay information

Chapter 6: Collaborative Decision Making

1. Organization

a. Roles and responsibilities

Chapter 7: Common ATFM Terminology

1. General

1.1 The primary goal of these guidelines is to develop terminology and phraseology for the exchange of ATFM messages between units providing ATFM services. The terminology and phraseology contained herein are intended to both reflect the current use of plain language and provide a basis for standardization and harmonization.

1.2 Although there are various plain language words and phrases in use today by ATFM service providers, these words and phrases can be organized into a modular and structured method of delivery to ensure communication harmonization and reduce the incidence of misunderstanding between units providing ATFM service.

1.3 It is not the intent of these guidelines to provide detailed information on ATFM concepts, procedures, and initiatives; however, since not all readers may be familiar with ATFM terms used in the examples, a brief description of ATFM initiatives is provided at Attachment 1. The list is not all-inclusive and does not preclude the innovation and application of other procedures that will result in improved service.

1.4 These guidelines include the concept of modular and structured ATFM messages and define an ATFM message's components as who, what, where, when and why. These five components are described as follows:

a. Who: The ATFM service unit being contacted followed by the ATFM service unit that is initiating the contact.
b. What: The ATFM objective to be achieved.
c. Where: The location of the ATFM objective to be achieved.
d. When: The time and/or duration of the ATFM objective to be achieved.
e. Why: The reason for the ATFM objective.

1.5 There is no module regarding “how” the ATFM restrictions should be achieved by the counterpart ATFM service provider. It is the counterpart’s responsibility how they fulfill the requested ATFM restrictions within their airspace. However, the center being asked for the ATFM restrictions may collaborate with the originating center on the type and method of ATFM measure application. It should be noted that once information is exchanged regarding an ATFM restriction, it is considered MANDATORY unless otherwise agreed.

1.6 Below are the examples of possible ATFM messages:

- FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER … REQUIRE 100 MILES IN TRAIL REGARDLESS OF FLIGHT LEVEL ON R220, R580 AND ALL PACOTS TRACKS FOR TRAFFIC LANDING NARITA ESTIMATING FIR BOUNDARY FROM 0100 UTC UNTIL 0500 UTC DUE TO SEVERE WEATHER.
- ABCD COMMAND CENTER, THIS IS FAA COMMAND CENTER… CAPACITY RESTRICTION: LOS ANGELES HAS STARTED FLOW RESTRICTIONS FOR ALL AIRCRAFT LANDING LOS ANGELES DUE TO EARTHQUAKE. APPROACH HAS REQUESTED GROUND STOPS FOR ARRIVALS UNTIL FURTHER NOTICE.

2. ATFM Message Components

2.1 The use of a modular and structured ATFM message provides for consistent ATFM message design and delivery. Each of the ATFM message's five components can contain plain language elements that when combined provide a complete ATFM message. The harmonization achieved lies in the delivery of an ATFM message that has all of the required components in a structured format while making allowances for different plain language elements. This is of particular benefit for ATFM service providers that use different ATFM terminology or for non-native English speaking ATFM service providers.

2.2 As the modular and structured ATFM message may contain several different elements of plain language, this section will examine each of the five components and detail some of the possible plain language words and phrases that are in use today.

2.3 **WHO**: The **who** component identifies the ATFM service unit being contacted followed by the ATFM service unit that is initiating the contact. Examples of the who component:

- ABCD COMMAND CENTER THIS IS FAA COMMAND CENTER…
- FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER…

2.4 **WHAT**: The **what** component identifies the ATFM objective to be achieved. Objectives include but are not limited to:

REQUIRE
- (number) MILES [orMINUTES] IN TRAIL AT THE SAME FLIGHT LEVEL…
- (number) MILES [or MINUTES] IN TRAIL REGARDLESS OF FLIGHT LEVEL…
- A RATE OF (number) AIRCRAFT PER HOUR…
- FLIGHT LEVELS (number) AND (number) NOT AVAILABLE
- ONLY FLIGHT LEVELS (number), (number) AND (number) ARE AVAILABLE
- (route/airport/airspace) NOT AVAILABLE DUE (reason) ALTERNATIVE[S] IS/ARE (routes/airports)

2.5 **WHERE**: The **where** component represents the location of the ATFM objective to be achieved. It is often preceded by a modifying clause, indicating what aircraft or traffic the restriction will apply to. The modifying clause and the location combination are used to construct there where component.

Examples of location:

- …AT NIPPI…
- …NARITA AIRPORT…
- …ANCHORAGE APPROACH…
- …ON A337…
- …WESTBOUND ON PACOTS TRACK CHARLIE…
- …EASTBOUND ON A590…
- …INBOUND ON G344…
- …ON PACOTS TRACK 2 LANDING SAN FRANCISCO AIRPORT…
- …ON PACOTS TRACK ECHO BELOW FLIGHT LEVEL 350…
- …ABOVE FLIGHT LEVEL 300…
- …INBOUND TO TOKYO ACC…
- …INBOUND TO OAKLAND OCEANIC SECTOR 5
- ... WEST OF MARCC

Examples of what aircraft or traffic are included:

- …FOR ALL AIRCRAFT…
- …FOR TRAFFIC FASTER THAN 300 KNOTS…
- …FOR HEAVY AIRCRAFT…
- …FOR TRAFFIC LANDING…
- …FOR AIRCRAFT DEPARTING…
- …FOR TRAFFIC OVERFLYING…
- …FOR AIRCRAFT PASSING…

2.6 **WHEN**: The **when** component represents the time and/or duration of the ATFM objective to be achieved:

Examples of time/duration:

- …FROM 0300 UTC UNTIL 0600 UTC…
- …FROM NOW UNTIL 0600 UTC…
- …FROM 2300 UTC UNTIL FURTHER NOTICE…
- …UNTIL FURTHER NOTICE…

2.7 **WHY**: The **why** component represents the reason for the ATFM objective:

DUE TO/FOR…
- RUNWAY CLOSURE
- (SEVERE) WEATHER
- COMMUNICATION FAILURE
- RADAR FAILURE
- (significant event/natural disturbance such as FIRE or VOLCANIC ASH)
- STATE AIRCRAFT ACTIVITY
- MILITARY ACTIVITY
- EQUIPMENT OUTAGE
- EMERGENCY
- ATFM INITIATIVES IN (location)

3. ATFM Message Types

3.1 **Information to be shared prior to invoking the ATFM restrictions**: The information-sharing should be facilitated not only during the actual flow control but also (and more importantly) well prior to invoking the ATFM restrictions when the possibility of flow control arises. The following phrases will make clear the distinction between the ATFM messages and the information provided for situation awareness:

- POSSIBLE TRAFFIC FLOW RESTRICTIONS
- CAPACITY RELATED INFORMATION

Examples of messages sent prior to invoking ATFM restrictions follow:

- FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER…**POSSIBLE TRAFFIC FLOW RESTRICTIONS**… XYZ AIRPORT HAS CLOSED ONE RUNWAY AND STARTED SNOW REMOVAL.

- FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER…**CAPACITY RELATED INFORMATION**…XYZ AIRPORT HAS ENTERED THE STORM ZONE OF THE HURRICANE.

3.2 **ATFM Initiative Message**: ATFM initiatives communicate air traffic flow restrictions/objectives from one air traffic service provider to another. They follow the five component structure described earlier:

a. Who: The ATFM service unit being contacted followed by the ATFM service unit that is initiating the contact.
b. What: The ATFM objective to be achieved.
c. Where: The location of the ATFM objective to be achieved.
d. When: The time and/or duration of the ATFM objective to be achieved.
e. Why: The reason for the ATFM objective.

Examples of ATFM initiatives follow:

- ABCD COMMAND CENTER, THIS IS FAA COMMAND CENTER …REQUIRE 30 MINUTES IN TRAIL AT THE SAME FLIGHT LEVEL FOR ALL AIRCRAFT LANDING CHICAGO FROM 0800 UTC UNTIL FURTHER NOTICE DUE TO STATE AIRCRAFT ACTIVITIES.
- FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER… FL350 AND BELOW NOT AVAILABLE FOR AIRCRAFT OVERFLYING XYZ DOMESTIC AIRSPACE UNTIL 0900 UTC DUE TO EMERGENCY.

3.3 **Coordination of aircraft exempted from ATFM initiatives**: The following phrases will be used for the coordination of aircraft which are exempt from ATFM restrictions:

- REQUEST EXEMPTION FROM ATFM
- COORDINATION OF ATFM EXEMPTION

3.4 The following types of aircraft may be exempted from ATFM restrictions:

- Aircraft in a state of emergency
- Aircraft engaged in search and rescue missions
- Aircraft operating for humanitarian reasons
- Aircraft carrying the head of State or distinguished visitors of State
- Aircraft carrying a patient who needs urgent medical treatment

Examples of messages requesting ATFM exemption follow:

- ABCD COMMAND CENTER, THIS IS FAA COMMAND CENTER…**REQUEST EXEMPTION FROM ATFM**…UAL123 IS CARRYING A PATIENT WHO NEEDS URGENT MEDICAL TREATMENT.
  UAL123…EXEMPTION APPROVED.
- FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER…**COORDINATION OF ATFM EXEMPTION**… UAL501A IS OPERATING SEARCH AND RESCUE MISSIONS.

3.5 **Information for the next coordination**: If it is possible and appropriate, the expected time of next coordination will be forwarded with the ATFM messages:

- I WILL CALL YOU AT 0400 UTC FOR FURTHER COORDINATION

- WE WILL CALL YOU AGAIN IN 30 MINUTES

An example of a message with information for the next coordination follows:

- ABCD COMMAND CENTER, THIS IS FAA COMMAND CENTER… REQUIRE 30 MINUTES IN TRAIL REGARDLESS OF ALTITUDE FOR ALL AIRCRAFT ON PACOTS TRACK 8 FROM 1000 UTC UNTIL FURTHER NOTICE DUE TO MILITARY ACTIVITY. I WILL CALL YOU AGAIN IN 60 MINUTES.

3.6 **Amendment:** The amendment of an ATFM message should be structured as the initial message and include similar elements but with additional modifiers. These modifiers may include:

- CHANGE
- AMEND
- REDUCE
- INCREASE
- DECREASE

3.7 Amendment messages should also identify which message is being amended, as several restrictions could be in place at one time. Examples of ATFM amendment messages follow:

- FAA COMMAND CENTER, THIS IS ABCD COMMAND CENTER…WE HAVE **CHANGED** THE RESTRICTION ON TRAFFIC FLYING PACOTS TRACKS CHARLIE, ECHO AND FOXTROT FOR XYZ AIRPORT. WE NOW NEED 20 MINUTES IN TRAIL AT THE SAME FLIGHT LEVEL ON PACOTS TRACKS CHARLIE, ECHO AND FOXTROT FOR TRAFFIC LANDING XYZ AIRPORT FROM NOW UNTIL 0900 UTC.
- ABCD COMMAND CENTER, THIS IS FAA COMMAND CENTER…WE HAVE **INCREASED** THE INBOUND RATE FROM 5 AIRCRAFT PER HOUR TO 10 AIRCRAFT PER HOUR FOR TRAFFIC BEYOND OAKLAND FIR UNTIL FURTHER NOTICE.

3.8 **Cancellation**: The cancellation of an ATFM message should be structured the same as the initial message and include similar elements but also contain a canceling word or phrase. It is normally not necessary to state the reason for the cancellation. A canceling word or phrase may include:

- CANCEL
- RESUME
- RESUME NORMAL
- RELEASE

3.9 Cancellation messages should also identify which message is being cancelled, as several restrictions could be in place at one time. An example of an ATFM cancellation message follows:

- FAA COMMAND CENTER, this is ABCD COMMAND CENTER…**CANCEL** the restriction on traffic beyond the XYZ FIR at this time. **Resume normal** traffic flow.

4. Abbreviations

4.1 The abbreviations used by the ATCSCC and other Command Centers that are not defined in the ICAO Doc. 8400 (PANS-ABC), are shown in the Attachment. The shaded abbreviations are considered to be the common terms between the two centers.

Attachment

DESCRIPTION OF AIR TRAFFIC FLOW MANAGEMENT INITIATIVES

The following list is not all-inclusive and does not preclude the innovation and application of other procedures that will result in improved service.

Name	Description
Airborne holding	Planned holding of aircraft may be utilized. This is normally done when the operating environment supports holding and the weather conditions are expected to improve shortly; this ensures aircraft are available to fill the capacity at the airport.
Altitude	Utilized to segregate different flows of traffic, or to distribute the number of aircraft requesting access to a specified geographic region. **a. Capping**: Term to indicate aircraft will be cleared to an altitude lower than their requested altitude until they are clear of a particular airspace. Capping may apply to the initial segment of the flight or for the entire flight. **b. Tunneling**: Term to indicate traffic will be descended prior to the normal descent point at the arrival airport to remain clear of an airspace situation; e.g., holding.
Fix balancing	Assigning an aircraft a fix other than that in the filed flight plan in the arrival or departure phase of flight to equitably distribute demand.
Ground delay programs (GDP)	Aircraft are held on the ground in order prior to departure to manage capacity and demand at a specific location, by assigning arrival slots. The purpose of the program is to limit airborne holding.
Ground stops (GS)	GS is a process that requires aircraft that meet specific criteria to remain on the ground. Since this is one of the most restrictive methods of traffic management, alternative initiatives should be explored and implemented if appropriate. GSs should be used: **a.** In severely reduced capacity situations (below most user arrival minimums, airport/runway closed for snow removal, or aircraft accidents/incidents); **b**. To preclude extended periods of airborne holding; **c**. To preclude sector/center reaching near saturation levels or airport grid lock; **d**. In the event a facility is unable or partially unable to provide ATC services due to unforeseen circumstances; and **e**. When routings are unavailable due to severe weather or catastrophic events.
Miles-in-trail (MIT)	The number of miles required between aircraft that meet a specific criteria. The criteria may be separation, airport, fix, altitude, sector, or route specific. MIT are used to apportion traffic into manageable flows, as well as to provide space for additional traffic (merging or departing) to enter the flow of traffic.
Minutes-in-trail (MINIT)	The number of minutes required between successive aircraft. It is normally used in a non-radar environment, or when transitioning to a non-radar environment, or when additional spacing is required due to aircraft deviating around weather.
Reroutes	Reroutes are ATC routings other than the filed flight plan. They are issued to: **a.** Ensure aircraft operate with the “flow” of traffic. **b.** Remain clear of special use airspace. **c.** Avoid congested airspace. **d.** Avoid areas of known weather where aircraft are deviating or refusing to fly.

Name	Description
Sequencing programs	These programs are designed to achieve a specified interval between aircraft; they may be software generated or determined by ATFM personnel. Different types of programs accommodate different phases of flight. **1. Departure Sequencing Program (DSP)** - Assigns a departure time to achieve a constant flow of traffic over a common point. Normally, this involves departures from multiple airports. **2. En route Sequencing Program (ESP)** - Assigns a departure time that will facilitate integration in the en route stream. **3. Arrival Sequencing Program (ASP)** - Assigns fix crossing times to aircraft destined to the same airport.

TABLE OF ABBREVIATIONS

The abbreviations listed here are those used by ATCSCC and other Command Centers that are not defined in the ICAO Doc. 8400 (PANS-ABC). The shaded abbreviations are considered to be the common terms between the two centers. The asterisk shows verbatim difference in the original collocation but the abbreviation still indicates the common object.

	ATCSCC	Other Command Centers
AAR	Airport Acceptance Rate	
ACID	Aircraft Identification	
ADL	Aggregate Demand List	
ADR	Airport Departure Rate	
ADZY	Advisory	
AIM	Aeronautical Information Manual	
ALTRV	Altitude Reservation	Altitude Reservation
ANP	Air Navigation Plan	
AOA	Office of the Administrator	
AOC	Airline Operations Center	
AP	Air Patrol	
APREQ	Approval Request	Approval Request
APVL	Approval	Approval
ARINC	Aeronautical Radio Incorporated	
ARO	Airport Reservation Office	
ARTCC	Air Route Traffic Control Center	Air Route Traffic Control Center
ARU	Airspace Reservation Unit (Canada)	
ASM		Airspace Management
AT	Air Traffic	
ATCSCC	Air Traffic Control System Command Center	Air Traffic Control System Command Center
ATMC	Air Traffic Management Center	Air Traffic Management Center
ATMetC		Air Traffic Meteorological Center
ATO	Air Traffic Operations Program	

	ATCSCC	Other Command Centers
AUTODIN	Automatic Digital Network	
CARF	Central Altitude Reservation Function	
CCFP	Collaborative Collective Forecast Product	
CCWSU	Command Center Weather Service Unit	
CDM	Collaborative Decision Making	Collaborative Decision Making
CDR	Coded Departure Route(s)	Conditional Route
CDR	Continuous Data Recording	
CDT	Controlled Departure Time	
CFR	Code of Federal Regulations (formerly FAR)	
CIWS	Corridor Integrated Weather System	
COMSEC	Communications Security System	
CR	Collaborative Routing	
CT	Select Flights Ground Delay Program	
CTA	Controlled Time of Arrival	
CTAS-TMA	Center TRACON Automation System Traffic Management Advisor	
CVRS	Computerized Voice Reservation System	
CWA	Central Weather Advisory	
CWSU	Center Weather Service Unit	
DARC	Direct Access Radar Channel	
DCCWU	ATCSCC Weather Unit	
DOTS	Dynamic Ocean Track System	Dynamic Ocean Track System
DP	Departure Procedure	
DSP	Departure Sequencing Program	
EDCT	Expected Departure Clearance Time	Expected Departure Clearance Time
EFAS	Enroute Flight Advisory Service	
EFTO	Encrypt For Transmission Only	
EOF	Emergency Operations Facility	
EOR	Emergency Operations Room	
EPS	Engineered Performance Standards	
ESCAT	Emergency Security Control of Air Traffic	
ETE	Estimated Time Enroute	Estimated Time Enroute
ETMS	Enhanced Traffic Management System	
EUCARF	European Central Altitude Reservation Facility	
FA	General Ground Delay Program	
FAA	Federal Aviation Administration	Federal Aviation Administration
FADT	Fuel Advisory Delay Time	
FCA	Flow Constrained Area	

	ATCSCC	Other Command Centers
FDMS		Flight Data Management System
FDPS		Flight Data Processing Section
FEA	Flow Evaluation Area	
FP	Flight Plan	
FPL	Full Performance Level	
GA	General Aviation	
GAAP	General Aviation Airport Program	
GDP	Ground Delay Program	
GS	Ground Stop	
HARS	High Altitude Route System	
HDTA	High Density Traffic Airport	
IFCN	Interfacility Communication Network	
IFPFP	Individual Flight Plan From this Point	Individual Flight Plan From this Point
IFSS	International Flight Service Station	
INATS	Interruption of Air Traffic Service	
JCAB	Japan Civil Aviation Bureau	Japan Civil Aviation Bureau
LAA	Local Airport Advisory	
LADP	Local Airport Deicing Plan	
LOA	Letter of Agreement	Letter of Agreement
MAP	Monitor Alert Parameter	
MARSA	Military Assumes Responsibility for Separation of Aircraft	Military Assumes Responsibility for Separation of Aircraft
MEL	Minimum Equipment List	
MINIT	Minutes in Trail	
MIT	Miles in Trail	
MOS	Military Operations Specialist	
MTSAT	Multi-functional Transport Satellite	Multi-functional Transport Satellite
MVFR	Marginal Visual Flight Rules	
NADIN	National Airspace Data Interchange Network	
NAS	National Airspace System	
NAVAID*	Navigational Aid	Navigation Aid
NFDC	National Flight Data Center	
NMCC	National Maintenance Coordination Center	
NOAA	National Oceanic and Atmospheric Administration	
NOM	National Operations Manager	
NOPAC	North Pacific	North Pacific
NOS	National Oceanographic Service	
NRP	National Route Program	

	ATCSCC	Other Command Centers
NTMO	National Traffic Management Officer	
NWS	National Weather Service	
OAG	Official Airline Guide	
ODP		Oceanic Air Traffic Control Data Processing System
OPSNET	Operations Network	
OTG		Oceanic Track Generator
OTR		Oceanic Transition Route
PACMARF*	Pacific Military Altitude Reservation Facility	Pacific Military Altitude Reservation Function
PACOTS	Pacific Organized Track System	Pacific Organized Track System
PMTC	Pacific Missile Test Center	
PO	Plan of Operation	
Pref Route	Preferential Route	
PT	Planning Team	
RA	Route Advisory	
RAA	Remote Airport Advisory	
ROT	Runway Occupancy Time	
SAA	Special Activity Airspace	
SOP	Standard Operating Procedure	
STMP	Special Traffic Management Program	
SUA	Special Use Airspace	
SVRW	Severe Weather	
SWAP	Severe Weather Avoidance Program	
TEC	Tower-Enroute Control	
TELCON	Telephone Conference	
TFM	Traffic Flow Management	
TIS	Traffic Information System	
TMC	Traffic Management Coordinator	Traffic Management Coordinator
TMCIC	Traffic Management Coordinator in Charge	
TMI	Traffic Management Initiative	
TMU	Traffic Management Unit	Traffic Management Unit
TSTM	Thunderstorm	
WSO	Weather Service Office	

DOCUMENT CHANGE RECORD

The following table records the complete history of the successive versions of the present document.

Version Number	Date	Reason for Change	Pages Affected
1.0	12-05-08	Creation	All
1.1	xx-xx-0x	General Amendment	xx

Status: Draft

Version No: 1.0 Date: 12 May 2008

- END -