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ALLIED JOINT DOCTRINE FOR AIRSPACE CONTROL

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NORTH ATLANTIC TREATY ORGANIZATION

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

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NATO LETTER OF PROMULGATION

8 May 2013

1. The enclosed Allied Joint Publication AJP-3.3.5 Edition B Version 1, Allied Joint Doctrine for Airspace Control, has been approved by the nations in the MCJSB, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 3805.

2. AJP-3.3.5 Edition B Version 1 is effective upon receipt. It supersedes AJP-3.3.5(A) which shall be destroyed in accordance with the local procedure for destruction of documents.

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Dr. Cihangir Aksit, TUR Civ
Director NATO Standardization Agency
NATO Standardization Agency

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RECORD OF RESERVATIONS

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Note : The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Database for the complete list of existing reservations.

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RECORD OF SPECIFIC RESERVATIONS

NATION	SPECIFIC RESERVATIONS
FRA	The complexity of amphibious operations from an air point of view dictates that a specific capable authority is in charge of the airspace control within the AOA. In accordance with ATP8 (amphibious operations document), the CATF, via the TACC, is the adapted authority to control the airspace within the AOA. The CATF will have the best overview of what's happening inside the AOA and could coordinate all the means/assets with the best efficiency. Referring to the operational documentation, the maritime operations are not limited to amphibious operations. In this regard, a link between maritime ops (with FACA) and amphibious ops (with AOA) has to be established. The specificities of maritime operation involving an aircraft carrier has led to the creation of a dedicated area (FACA) dealing with coordination and air defence (ATP 1). Within this area, maritime commander will act as SACA. The French navy will have the cruise missile capability without TLAM but with naval cruise missile "MDCN". Cruise missile can be used as well if there is an amphibious operation as a maritime one. When there is use of such a missile, a close coordination has to be done between ACA and MCC and/or CATF.
GBR	Para 0105, Sub-para e, Line 2: "GBR will use command, control and communications in reference to the abbreviation C3 vice consultation, command and control".
TUR	Turkey accepts paragraph 0311.k on condition that the following principles are applied during implementation of airspace control procedures: "Provision by a state of air traffic services within airspace over the high seas does not imply recognition of sovereignty of that state over the airspace concerned, nor do the ATS arrangements between adjacent NATO nations imply delineation of responsibilities of these nations for airspace control in international airspace of ATS area."

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CHAPTER 1 − INTRODUCTION

0101. **Description.**

a. Virtually all current military operations involve the use of airborne systems. Regardless of whether manned or unmanned, these systems, developed by various branches of the armed forces, are used extensively in joint operations. Each airborne asset has demands and requirements regarding the operational/tactical environment to effectively accomplish a mission and to contribute to the overall military objective. Consequently, these requirements have to be coordinated on a joint level.

b. Airborne systems are high value assets. To enhance survivability and efficiency, potential threats need to be identified and negated, if at all possible. Aircraft are not only at risk from AD weapons aimed at them, but also from indirect surface-to-surface fires (e.g. rockets/missiles, shells). And not only do these potential threats exist in a non-permissive or hostile environment, but non-coordinated planning and execution cycles can also increase the chance of fratricide.

c. The risk of fratricide or damage/destruction of third parties, such as civilian air traffic, presents a constant challenge. Visual identification (ID) of aircraft is difficult and operators of visually aimed air defence (AD) weapons normally have only a short time to decide whether or not to engage. Electronic means of interrogation were designed to distinguish friendly from hostile air platforms. In practice, present systems still have shortcomings such that interrogators alone cannot be relied upon as the criterion of whether or not to engage. However, modern electronic datalinks can significantly reduce the risk of engagement by friendly forces.

d. The risk of losses to friendly forces can be reduced by placing constraints on friendly air movements and on the freedom of action of the AD assets. However, such action will likely inhibit operational flexibility and may result in reduced mission effectiveness. Worst case, this could lead to adversary air assets penetrating defenses without being engaged. Reducing constraints to AD forces in the ID of aircraft increases the uncertainty and increases the potential for undesired engagements.

e. During military operations, military and civil flight operations may occur in the same area. Therefore, it will likely be necessary for military authorities to ensure deconfliction of military, friendly, and civil air operations. It is essential that all users of the airspace (military and civil) are aware of the problems and risks, and of the measures taken to minimize those risks to air assets from friendly fires while at the same time maximizing freedom of action. These measures are known collectively as airspace control (ASC).

0102. **Objective.** The objective of ASC is to standardize command and control (C2) of the air to maximize the effectiveness of military operations by promoting the ability of air, land, maritime and special operations forces to operate in an efficient, integrated, and flexible manner with minimum mutual interference and without undue restraint and risk to friendly forces and civilian users. ASC provides a commander with the operational flexibility to effectively employ forces according to mission priorities.

0103. **Aim.** The aim of this publication is to provide NATO doctrine for ASC.

0104. **Scope.** Allied Joint Publication (AJP)-3.3.5 is NATO's key document for ASC during NATO or NATO-led operations. The doctrine is deliberately broad and is designed for the guidance of all NATO forces and those participating in NATO or NATO-led operations (e.g., Partnership for Peace). Other NATO publications employing the doctrine of ASC provided herein, but describing specific procedures and tactics, may not be available to partner nations and/or affiliated forces yet. It is the responsibility of the respective commander to ensure familiarization with these procedures and tactics. Therefore, the doctrine in this publication is not intended to restrict the authority and responsibility of commanders and their organic resources, but rather to enhance overall operations. Adversary and friendly force structures, the commander's concept of operations, the commander's priorities and the operational environment will necessitate different specific procedures for ASC, both for operations within and beyond the Allied Command Operation area of responsibility (AOR). Commanders, in cooperation with collaborating forces and appropriate air traffic services (ATSs), will implement procedures required to accommodate NATO and national airspace control capabilities and requirements.

0105. **Airspace Control System Fundamentals.** To enhance combat operations effectiveness, the airspace control system (ACS) should be developed considering the following fundamentals.

a. **Unity of Effort.** Unity of effort is essential in military operations. Commanders may view the operation through their own lenses but all contribute to achieving the joint force commander's (JFC's) goals and objectives. To address airspace requirements

within the context of a theatre airspace structure, an airspace control authority (ACA) is normally designated by the JFC. The ACA is the commander designated to assume overall responsibility for the operation of the ACS. The ACA, once designated by the JFC, coordinates with all users of airspace prior to hostilities, and integrates and coordinates airspace requirements of all component commanders/forces.

b. **Close Liaison and Coordination.** Military limitations (constraints and restraints) and the sheer demand for airspace require coordination, and may result in overlapping airspace structures. If airspace structures overlap, responsibilities, usage, and priorities should be unambiguously coordinated and defined. Therefore, close liaison and coordination among all airspace users (civil and military) is necessary to promote the timely and accurate flow of information and requirements between users, airspace managers, and ATSs. The close coordination between airspace control and air defense elements is crucial to reduce the risk of fratricide and balance those risks with the requirements for an effective air defense. All ATSs and supporting C2 procedures, equipment, and terminology need to be mutually supporting and interoperable.

c. **Common Procedures.** Common ASC procedures within the AOR and/or joint operations area (JOA) enhance the effectiveness of air operations. These procedures need to allow maximum flexibility through an effective mix of ID and control measures. The control structure needs to permit close coordination between air, land, maritime, and special operations forces, allowing for the rapid concentration of combat power in a specific portion of airspace in minimum time.

d. **Simplicity.** ASC procedures need to be as simple to execute as possible for all personnel involved. ASC can use a variety of measures, including visual and electronic means, or specific discriminators associated with time and segmentation of airspace and maneuver.

e. **Reliable and Interoperable C2 Systems.** The ACS should be based on a reliable, electronic counter measure (ECM)-resistant, and secure consultation, command and control (C3) network. All C2 systems connected within the ACS should be technically interoperable to the highest degree possible. Since absolute interoperability, especially beyond technical interoperability, is unlikely to be achieved, coordinated and detailed planning is required among all airspace managers and users.

f. **System Characteristics.** The system should discriminate quickly and effectively between friendly, neutral, and enemy air operations, vehicles and personnel. The ACS should be survivable, sustainable, and have built-in redundancy as it is likely to be a prime target for attacks. Moreover, it should be responsive to evolving threat conditions and capable of supporting operations through day and night, and under adverse weather conditions. For contingencies, positive ASC should be complementary to, and backed by, procedural ASC.

g. **Inclusion of All Airspace Users.** All airspace users should participate in the planning of ASC and adhere to the procedures and measures in effect. Depending on the scenario, this requires not only "traditional" users of ASC (e.g., military aircraft and AD systems) but the inclusion of cruise missiles, artillery systems, and unmanned aircraft systems (UAS), as well as civil aviation and air traffic control (ATC) in neighboring nations or other affected areas.

h. ASC procedures provide maximum flexibility through an effective mix of positive and procedural control measures. The control structure should encourage close coordination between joint force components to allow rapid concentration of combat power.

i. Procedural control measures should be uncomplicated and readily accessible to all forces, and disseminated in the airspace control order (ACO) and special instructions (SPINS) of the air tasking order (ATO). When positive ASC is degraded, procedural control measures should provide a means to safely operate in the airspace. Use of these single-source documents is essential for integration of rotary-wing and fixed-wing operations.

0106. **Unmanned Aircraft Systems.** The established principles of airspace management used in manned flight operations will generally apply to UAS operations as well. UAS operations should be addressed in the airspace control plan (ACP) and ACO, and adhere to the procedures established by the ACA. Preplanned UAS missions should be included in the ATO to provide safe separation of unmanned and manned aircraft, as well as preventing engagement by friendly forces. All unplanned or immediate UAS missions should be coordinated directly with the ACA or appropriate airspace control authority.

0107. **Information Management.** Integral to ASC is the ability to gather, disseminate, and protect information. Identifying, requesting, receiving, tracking, and disseminating needed information assists decision makers in making informed, timely decisions. This requires efficient use of people, procedures, and systems to keep the commanders and staffs from being overwhelmed by information. The development of an information management plan

is necessary to address vertical and horizontal information flow, filtering, fusing, protecting, and prioritizing criteria. Effective use of information systems requires users to be knowledgeable about them and the criteria for usable information, as well as the need to protect both the systems and the information.

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CHAPTER 2 − CONCEPT

0201. **General.** Friendly forces should operate with a level of risk as directed by the JFC. Friendly and neutral air traffic, both military and civil, needs to be deconflicted, including some surface-to-surface weapons. Further, air defense assets must be able to distinguish between friendly, neutral, and hostile air assets to effectively engage the hostiles and safeguard friendly and neutral traffic. To achieve these aims, the operational commander should ensure an appropriate control system exists. Nations remain responsible for operating their own ATS and aeronautical communications systems, except where alternative arrangements might be agreed. In trying to minimize the danger to friendly air assets, there is always a risk that hostiles could get through unengaged. Conversely, to achieve a very high probability of engaging all hostiles, friendly air assets could be put at risk. The operational commander should continuously review and decide upon an acceptable balance between these risks.

0202. **Commanders' Roles.** Understanding the roles of the JFC, component commanders, the ACA, the air defense commander (ADC), and airspace management agencies involved in executing the JFC's campaign or operation plan (OPLAN) is essential. Vesting appropriate authority and responsibility in a single commander provides for the effective exercise of leadership and decision authority over assigned forces to achieve a common objective.

0203. **Joint Force Commander.** The JFC will exercise C2 as delegated over all force components within the defined JOA. The JFC exercises coordinating authority for those forces remaining under national control that are operating in or transiting the JOA, and for NATO aspects of airspace control, includes positioning and reporting, rules of engagement (ROE), and force protection.

0204. **Air Component Commander.** The responsibilities of the air component commander (ACC), ADC, and ACA are interrelated and are normally assigned to one individual. The responsibilities of the ACC, ADC, and ACA may be assigned to two or more individuals when the situation dictates. If the JFC decides not to designate the ACC, ADC, or ACA as one individual, then close coordination between all positions is essential. The ACC, when designated by the JFC as the joint force air component commander (JFACC), develops strategies and plans, recommends priorities, allocates resources, and controls assigned air assets to achieve JFC objectives. Having one commander with the responsibility and

authority to coordinate and integrate air defense and airspace control greatly enhances the ability to achieve a favorable air situation. The planned and coordinated use of airspace increases the flexibility of defending forces and helps prevent inadvertent attacks on friendly forces or third parties, such as civil air traffic. Coordinated air defense and airspace control also enables the execution of offensive attacks against an adversary.

0205. **Component Commander Responsibilities.** Each component commander advises the JFC on the employment of forces. Subject to the authority of the JFC, each component commander:

a. Within their component capabilities, provides airspace control in areas designated by the ACA in accordance with directives and procedures in the ACP and is prepared to provide ASC in other areas designated by the ACA when combat or other factors degrade the ACS.

b. Using the airspace control means request (ACMREQ), forwards requests for airspace control means (ACMs) to the ACA via the joint airspace coordination centre (JACC) in accordance with the ACP. The ACA, through the JACC, coordinates with all component commanders' centres, including the air operations centre (AOC).

c. Develops detailed airspace control instructions, plans, and procedures in accordance with guidance and direction in the ACP. These instructions, plans, and procedures should be coordinated by the ACA to ensure consistency with JFC-approved airspace control guidance and approved in accordance with directives and procedures in the ACP.

d. Provides necessary facilities and personnel for airspace control functions in assigned areas of operations and identifies these facilities and personnel to the ACA for inclusion in the ACP.

e. Provides trained personnel as representatives to the JACC to perform as staff officers for the ACA.

0206. **Airspace Control Authority and Joint Airspace Coordination Centre.** At the direction of the JFC, and normally detailed in the OPLAN, the ACA assumes overall responsibility for the ACS in an airspace control area (ASC-area). The broad responsibilities of the ACA include coordinating and integrating the use of the ASC-area. Subject to the approval of the JFC, the ACA develops broad

policies and procedures for airspace control and for the coordination required among all users of airspace within the ASC-area. These policies and procedures will be published in the ACP. The ACA establishes an ACS that deconflicts military and civil air control issues and requirements, and provides for integration of host and other affected nations' constraints and requirements. The ACA develops the ACP and, after obtaining JFC approval, promulgates it. Implementation of the ACP takes place through the ACO. A key responsibility of the ACA is to provide the flexibility needed within the ACS to meet contingency situations that necessitate rapid employment of forces as well as dynamic changes to component operations. The JACC is the ACA's primary airspace control facility for coordinating the use of airspace within the designated ASC-area. The JACC generally performs the following functions and tasks:

a. Coordinate requests for ACMs.

b. Resolve conflicting requests for ACM, referring those that cannot be resolved through the ACA to the JFC for final determination.

c. Promulgate activation/deactivation/modification of ACMs by dissemination of the ACO. The ACA may delegate to an AOC the authority to coordinate airspace changes dynamically with affected users before a change to the ACO is formally promulgated.

d. Coordinate with NATO/national military commanders, component commanders, adjacent airspace control authorities, and affected national/international civil and military agencies, when necessary.

0207. **Airspace Control Area.** The basic geographic element of airspace control is the ASC-area. The ASC-area may coincide with a regional commander's AOR or the JFC's JOA. There may be cases where the ASC-area does not coincide with an AOR or JOA. It may be smaller due to national restrictions or International Civil Aviation Organization (ICAO) provisions, or larger to manage air operations outside an AOR or JOA. When ASC-areas overlap political boundaries or national interests are affected, national and international laws and restrictions must be considered.

0208. **Sub-Area Airspace Control Authority.** Command structures and capabilities, operational factors, various missions, geographic factors, the complexities of ASC, AD requirements, and ICAO provisions may dictate the ASC-area be sub-divided into ASC sub-areas. A subordinate authority designated by the ACA to

exercise overall responsibility for the ACS in a designated non-permanent ACS sub-area is a sub-area airspace control authority (SACA). A SACA is responsible for:

a. The planning, coordination (to include coordination of any adjacent sub-areas) and implementation of their sub-area portion of the ACP.

b. The preparation and distribution of SACA ACOs.

0209. **Responsibilities of Commanders Not Appointed Sub-Area Airspace Control Authority.** Commanders that use the airspace within an ASC-area are responsible for the following:

a. Support ASC in designated airspace in accordance with policies promulgated by the ACA/SACA(s).

b. Provide C2 and ATS representatives and liaison to the ACA and SACA(s) as required.

c. Provide appropriate facilities and C2/ATS personnel to undertake ASC functions in designated ASC areas and sub-areas.

d. When instructed by the ACA/SACA(s), assist in developing detailed ASC instructions and plans in accordance with policies and procedures detailed in the ACP.

e. Enforce compliance with the ACP, the ACO and additional activated ACMs that are not part of the latest ACO.

f. Coordinate requirements for use of airspace with the ACA/SACA(s) through the JACC by establishing and maintaining an interface with the ACA/SACA(s) for planning and coordination of airspace activities.

0210. **Airspace Control Means.** ACMs segregate, control, and/or reserve airspace for Allied operations, and are a means for positive and procedural ID, thereby reducing the risk of fratricide. In general terms, ACMs can be broken down into the following groups: air corridors and routes, areas, points, and procedures and means. The ACMREQ is used to request a specific ACM be specified in a future ACO or when a change to the present ACO is needed. ACMs are listed and defined at Annex A of this publication. Other fire support coordination measures

(FSCM) and restricted operating zones (ROZs) also have airspace applicability. For deconfliction and fratricide prevention purposes, planners should use ICAO terms if possible.

0211. **Coordination with Adjacent Authorities.** When subdividing the airspace control area and delegating responsibilities, the ACA should consider legitimate flight safety and security requirements of all nations affected, including nations outside the ASC-area. Coordination with ASC elements of adjacent area operational commanders should be conducted, particularly during ASC planning. It is essential to obtain mutual legitimate agreements regarding ASC between respective operational commanders, subordinate commanders, designated ACAs, and other affected adjacent authorities (the latter may require NATO liaison officers for effective coordination).

0212. **Air Defense Commander.** The JFC will normally designate an ADC whose responsibilities include integration and/or coordination of joint AD capabilities of each force component into an air defense plan (ADP), application of the principles of AD to counter the adversary's activity within the constraints of ROE, adoption and promulgation of common procedures for air battle management and/or ID, and the reduction of mutual interference. Because of the common interests with ASC, the ADC will normally be dual-hatted as the ACA.

0213. **Airspace Control Plan.** The ACA prepares the ACP, which is approved by the JFC, to establish NATO-agreed procedures for the ACS within the ASC-area. The ACP should directly support achievement of campaign or OPLAN objectives. A seamless AD interface with coherent procedures is critical to effective ASC. Therefore, the ACP should be closely coordinated with the ADP. The ACP should specify NATO procedures for the ID of air assets, and address the issues for the integration of ATS. The ACP should provide amplifying guidance on the ACMs to be used. It should include instructions for ASC operations in a degraded or restrained C2 environment. The ACP should specify the ACO development and production cycle, and include the timelines for submission and coordination of ACM requests along with ACO distribution and promulgation. The ACO cycle should be harmonized with the ATO planning cycle and the other component commands' planning cycles. Finally, the ACP should consider procedures and interfaces with ICAO provisions, and the regional/international air traffic systems to facilitate the flow of air traffic into and out of the AOR/JOA. A notional ACP outline is provided in Annex A of this publication.

a. **Consultation with the Host Nation.** An ACP should be developed in full consultation with the Nation responsible for providing ATS in the airspace the ACP will apply. In a major crisis in which the host nation(s) is involved militarily, they may defer to the JFC. However, in non-Article 5 crisis response operations (NA5CRO), unless there is an over-riding legitimate resolution, they may reserve the right to publish separate ASC procedures unique to the mission. Close coordination will be required with civil and military aviation representatives regarding ICAO regulations for civil operations in or near the JOA.

b. **Integration of Civil and Military Air Operations.** Broad areas of concern for developing the ACP include observance and understanding of relevant national and multinational airspace management and ATC responsibilities, regulations and procedures. Especially during NA5CRO, the effect of military operations on international civil air traffic needs to be considered. If civil aviation continues to operate within the ASC-area, the ACA is responsible for coordination with civil aviation to ensure adequate deconfliction between civil aviation and military aircraft and AD activities.

c. **Transitions: Peace to/from Conflict.** The ACP should support an orderly transition from peacetime to combat and back to peacetime operations. Such a transition could occur during a period of increasing tensions or suddenly without much warning.

d. **Air Traffic Control Integration with Airspace Control.** The ACP should provide procedures to coordinate, link, and full integrate all military and civil ATS facilities responsible within and adjacent to the ASC-area. This interface is essential for the safe and efficient flow of air traffic supporting the joint effort and a prerequisite for coordination and deconfliction of military and civil air activity.

e. **Integration of Air Defense.** ASC activities must take into account ground-based air defence (GBAD) / air missile defense (AMD) systems, AD fighter aircraft, naval AD weapons, theatre missile defence assets, short-range air defence, and the associated surveillance and control system for maximum effectiveness and risk management in accordance with JFC direction.

f. **Airspace Control Plan Considerations.** The ACP should consider the following:

(1) Existing airspace structure, ATC regulations and procedures, ATS assets, linkage to adjacent national/international ATC, and location of all airfields and helipads.

(2) Air, land, and maritime order of battle, location of high value assets, key installations and AD priorities according to the joint prioritized defended asset list.

(3) Limiting factors, such as equipment limitations, electronic warfare, and C3 network requirements that may adversely affect the ACS.

(4) ASC C2 architecture, planning and cycles, requesting procedures, ID criteria and ROE.

(5) Mission profiles and identification friend-or-foe (IFF) or other ID capability of air assets and AD systems that will operate in the ASC-area.

(6) The adversaries' capabilities, especially regarding air surveillance, AD, and electronic warfare, as well as available intelligence information on their likely course of action and tactics.

(7) Procedures during period of limited visibility, such as adverse weather and night.

(8) Emergency procedures, to include IFF problems and loss of communications.

(9) Procedures for non-operational and civil air traffic.

(10) Provisions to support surge operations and high volumes of air traffic.

(11) Vulnerability of friendly air assets and AD systems to adversary activity/systems, to include risk for civil air operations.

(12) Procedures for deconfliction with autonomous land and sea-based weapons, such as cruise missiles, as well as UAS automatic return-to-base procedures (in the event of lost communications).

(13) Other coordination or control measures, such as FSCMs, that affect the conduct of air operations.

(14) Military/civil air control facilities through which the ACP can be executed in both positive and procedural modes.

(15) Legal issues addressing any UN mandate, international and/or national law, international air law, and treaties and conventions, e.g., law of armed conflict.

(16) Timing, validity, and distribution of relevant documents and/or orders, e.g. ATO/ACO/SPINS.

(17) Selection and use of a reference system, e.g., Common Geographic Reference System / Military Grid Reference System.

CHAPTER 3 − OPERATIONAL CONSIDERATIONS

0301. **Operational Requirements.**

a. Developing an ACS requires extensive planning. Extant national and international regulations will not automatically be waived and must be considered. The airspace will likely be used by all components and may be used by civilian and neutral aviation as well. In NA5CRO, there may be a requirement to set-up and operate a rudimentary ATS system and structure that suits military operational requirements and civilian needs, taking into account the differences between military and civilian standards. Depending on the situation, transition from peacetime to combat and back to peacetime needs to be considered. As such, the ID and control of air platforms operating within the ASC-area must be addressed.

b. Each JOA has specific operational requirements for ASC. These requirements must be determined as early as possible to incorporate into the overall joint force planning effort. Political constraints, national ATC systems regulations and procedures, military systems for ASC, and the capabilities and limitations of these systems are all important considerations. ROE, disposition of AD weapons, fire support plans, and procedures for ID of aircraft are also important items that should be considered. Every joint force is different, based on the mission to be accomplished, forces assigned, and the command structure established by the JFC. In most cases, these forces will have specific operational requirements for airspace that must be addressed when developing the ACP.

0302. **Planning Considerations.**

a. **Planning Process.** The ACA should assemble the JACC staff and include representatives/liaison elements from all relevant components and agencies. This staff should complete all phases of planning, including the formulation or update of an ACP for JFC approval. The ACP should be developed in coordination and parallel with the JFC and other component commanders' planning efforts.

b. **Synchronized Planning.** The JFC's campaign plan/OPLAN; the air, land, and maritime plans; the ADP; and the ACP should be synchronized. Input from all commands, agencies, and organizations should be consolidated, and the final ACP developed and disseminated to all users. The ACP should be added as an appendix to the operations annex of the campaign/OPLAN.

c. **Contingency Planning.** The combination of CA and ADC functions facilitates the flexibility needed for effectively meeting an adversary air threat. When the circumstances of a contingency situation necessitate rapid deployment and employment of forces, existing plans should be used if possible, implementing contingency ACMs appropriate for the scenario. If there is no approved OPLAN or previously established ACP, the ACA, as directed by the JFC, will establish a temporary ACS responsive to immediate operational and tactical requirements. In either case, the ACA will implement the planning and coordination requirements to modify or adjust the system as the operational environment and capabilities of participating forces change.

c. **Other Considerations.** Planning for ASC should consider the possibility of high traffic volume and potential timing controls placed on operations. Plans should also anticipate the effects of emission control (EMCON) and communications degradation. An effective ACP needs to plan for the full range of operations, from no degradation to full degradation of communications.

0303. **Transition From Peacetime To Combat Operations.** The JFC should have an ACP that is continually updated in peacetime and throughout the evolution of a campaign/OPLAN. Peacetime airspace rules and organizations may change during actual conflict, and the nature of these changes is different from theatre to theatre. During NA5CRO, special constraints may be imposed on ASC. The ACP needs to provide instructions to transition from peacetime to combat and back again in simple, clear steps.

0304. **Integration of Airspace Control and Air Defense Operations.** Because the two functional areas of ASC and AD would likely conflict with each other if operating independently, prioritization and integration of the two is essential. ASC procedures can be used to assist in platform ID, facilitate engagement of adversary aircraft and missiles, and provide safe passage of friendly air platforms. Normally if the JFACC and ACA are the same, these functions are

unified in the AOC. The ASC system should provide AD forces freedom for engagement of hostile air platforms, while minimizing disruption to other users, commensurate with acceptable risk.

0305. **Methods of Airspace Control.** Methods of ASC will vary across the range of military operations, to include both combat and non-combat activities. The methods of ASC employed within an ASC-area are positive, procedural, or a combination of the two. The ACS needs to be responsive to evolving enemy threat conditions and changing tactical situations. It is up to the JFC, through the ACA, to decide the appropriate method for ASC based on the overall concept of operations. The three basic methods of exercising ASC are:

a. **Positive ASC.** A method of ASC which relies on positive ID (active/passive), tracking and directing of aircraft, and control of AD weapons within a designated airspace by an agency with the appropriate capabilities, authority and responsibility. ID, tracking, and directing of aircraft must be complemented by control over the AD weapons defending that airspace. Normally this is executed by the responsible AOC and/or control and reporting centre.

b. **Procedural ASC.** A method of ASC which relies on a combination of previously agreed and promulgated orders and procedures. Procedural control includes techniques such as the segmenting of airspace by volume and time, the use of ACMs, and/or use of a specified weapons control order (WCO) or weapons control status (WCS) within a given area. Procedural controls should always be available to provide an immediate fall-back system should positive control be degraded, or when positive control is not considered appropriate to the situation.

c. **Combination and Selection of Method.** Positive and procedural ASC should be complementary to each other, and are often used in combination. For example, AD assets may use both electronic and procedural means of ID. Operational situations may demand a mixture of the two methods.

0306. **Identification Methods.** ID procedures are to be implemented in accordance with Allied Communications Publication-60, and established ROE. The methods of ID will likely vary between operations and ROE, and commanders of adjacent areas should coordinate their procedures. The three methods are cooperative object ID, non-cooperative object ID, and procedural ID.

a. **Cooperative Object ID.** Cooperative objects make a contribution to their ID as friendly or as neutral objects based on replies given in response to interrogations, usually executed by technical equipment.

b. **Non-cooperative Object ID.** Non-cooperative objects do not provide responses to interrogations, and therefore require a different ID method. Suitable procedures are those which detect characteristic signatures and subject them to pattern recognition processes. This method uses sensors capable of detecting, interpreting, and allocating images, sounds, or electromagnetic emissions to ID characteristic signatures, often combining different sensor data.

c. **Procedural ID.** Procedural methods ID objects based on their flying (altitude, speed, routing) or other moving behavior. Therefore, for this method it is essential that friendly/neutral (especially civil) aircraft flight plans are pre-coordinated to contribute to timely ID.

0307. **Airspace Control Means Selection.** The ACA, in coordination with subordinate commanders, will select those ACMs from the ACP that are most suitable for the ASC-area and accomplishment of the mission, and where necessary, may identify additional means. If ACMs conflict, the ACA will specify priorities, with full details reflected in the ACP and ACO. Additional means that may be included in the ACP will also be detailed in appropriate OPLANs. ACMs for use in airspace control planning and operations are listed in Annex A of this publication.

0308. **Operation of the Airspace Control System.**

a. **Airspace Control Means Request.** Each commander controlling assets which use the airspace should constantly look ahead to determine his requirements for airspace and coordinate these with the ACS. However, the ACA should be prepared to coordinate unanticipated requests with significantly less lead time, if required, due to changing operational situations. These requirements could include the land commander requiring a reservation of airspace for UAS, artillery, and tactical ballistic missiles. The JFACC may require corridors or routes friendly forces. And at lower levels, units may have localised airspace requirements. To meet their airspace operational needs, commanders and other agencies will submit requests for the establishment, activation and deactivation of ACM

and/or associated procedures to the ACA via ACMREQs. Unless otherwise specified in the ACP, the ACMREQ message format should be in accordance with APP-11. The JACC will correlate all requests and attempt to resolve any conflicting requirements. If these cannot be resolved by the ACA and the airspace users concerned, the matter should be referred to the JFC for resolution. The authority to approve or disapprove combat operations is vested only in the JFC.

b. **Airspace Control Order.** When all requests have been correlated and conflicts resolved, the JACC will promulgate the activation of pre-planned ACMs and/or procedures, and other ASC information by issuing an ACO. ACMs and/or associated procedures will be valid for the period of the ACO or the specified time frame. ACO planning should be synchronized with the overall planning processes, particularly the ATO planning cycle. The ACO message format is based on ADatP-3 and formatted per APP-11.

c. **Issue of an ACO.** An ACS will be ineffective unless the ASC information is disseminated in a timely fashion to those who need it, notably those aircrews assigned flying missions, controlling aircraft, or responsible for the actual firing of weapons. The ACO can be a long and complex message, therefore, the ACO should be transmitted well before it becomes effective so information can be extracted and passed down the appropriate personnel in a timely manner. Additionally, the ACA should be prepared to disseminate limited modifications to the current ACO, should operations dictate. In this case, changes should be distributed to affected units/agencies as soon as possible.

d. **Continuity of Operations.** To ensure continuity in providing ASC in a hostile or degraded environment, the ACA should establish procedures to assign responsibility for ASC to alternate authorities, should the ACA's ability to carry out ASC responsibilities be lost. This requiresJFC approval and should be published in the ACP.

0309. **Theater Missile Deconfliction.** Theater missiles (e.g., conventional air launched cruise missiles, Army Tactical Missile System, and Tomahawk land attack missiles [TLAMs]) are standoff weapons fired from a launch point on a pre-programmed flight profile to a designated target. Because these missiles have a small radar cross-section, they are difficult to track with normal radar units conducting theater airspace control. Positive control is not an effective means to deconflict theater missile operations from other air operations. Thus, it

is imperative that procedural ACMs be established in the ATO, ACO, or SPINS for these weapons. Procedural ACMs for theater missiles normally include the establishment of ROZs for launch and target location, air corridors, and time deconfliction.

0310. **Airspace Control in Non-Article 5 Crisis Response Operations.** With NA5CROs, NATO forces may be called upon to undertake a variety of missions. NA5CROs are generally confined to a specific geographic area and are often characterized by significant constraints on forces, weapons, tactics, and the level of force permitted. Depending on the environment and mission, the degree of control may be rigorous and the ROE very restrictive.

a. **Peace Support Operation.** Peace support operations can involve all air missions, including aircraft of all components. These are the missions most likely to fluctuate from combat to noncombat, and back again. For coordination and deconfliction purposes, it is essential that components' organic air assets appear on the ATO in as much detail as possible, and their airspace requirements are included in the ACO. Rigorous control of all flights within the AOR/JOA may be necessary due to the potential mix of friendly and neutral military aircraft, civil aircraft, and possible belligerents, as well as other mission constraints. The airspace control methods the ACA recommends to the JFC need to be continually evaluated for effectiveness and efficiency.

b. **Force Protection.** Force protection measures can have an impact on air traffic control and on the operations of airfields, aerial ports, air terminals, and heliports. The use of restricted areas around sensitive facilities is commonplace.

c. **Airspace Control.** The ACA develops and imposes rules and conditions in support of mandated operations on airspace which may previously have been the domain of belligerents. Civilian air traffic right of passage may need to be protected. The conditions imposed on the belligerents' use of the airspace will need to be addressed, the legal authority for which may be derived from the mandate. The formulation of those rules and conditions must take into account the potential challenge to Allied air operations. If the mandate is overly restrictive such that adequate ACMs cannot be put in place, then an amplification of the mandate should be requested.

d. **Other Types of Operations.** NATO forces may be called on to participate in other types of NA5CROs, such as intelligence, raids, or rescue missions. In these operations it may not be possible to implement some of the ASC procedures described in this publication. When conducting these missions, joint forces may encounter opposing military forces whose capabilities and potential for hostilities vary widely, so the ASC function will have to adapt accordingly. Airspace planning for these operations, however informal or brief, should include:

(1) Deconfliction between units, ATS, airfields, and aircraft performing the military mission, as well as other types of air traffic.

(2) Timely and effective implementation of appropriate ASC procedures if hostilities result.

0311. **Summary.** To achieve the objective of effective ASC in all operations the following are key points:

a. The authority given to the ACA is that which is necessary to allow him to plan, coordinate, and organize the ACS, and to be responsible for its operation.

b. The ACS should support and complement the JFC's campaign/OPLAN objectives.

c. When agreement on competing requirements between subordinate commanders cannot be reached by the ACA, the matter should be referred to the JFC for resolution.

d. All weapon systems and airspace users operating within an ASC-area interact to varying degrees. Therefore, all airspace users should be integrated within the ACS.

e. Each commander who operates air assets (manned and unmanned), weapons systems, and/or electronic means within the ASC-area to perform their assigned mission should participate in planning the use of that airspace.

f. ASC should be a major consideration across the range of military operations.

g. Especially during NA5CRO, the requirement to operate civilian aircraft in the ASC-area or parts thereof must be considered and maximum safety consideration consistent with peacetime operations allowed without disrupting operational effectiveness.

h. The transition from peacetime ATS procedures to the successful implementation of the ACP is unpredictable and crucial. Special provisions need to be adopted to facilitate military operations with minimum disruption to normal peacetime civil air traffic. ASC should allow the use of the airspace with maximum freedom of action consistent with the degree of risk acceptable to the JFC.

i. All airspace users and their controlling elements should possess interoperable, secure communications necessary to fulfill their part in the ACS. However, since this may not always be possible, commanders should ensure alternate plans and procedures are pre-coordinated and available.

j. ASC procedures should be sufficiently flexible to accommodate planned operations, as well as unforeseen, quick-response missions, and short-notice changes in operational or tactical priorities.

k. ASC procedures should be simple and undue restrictions avoided. Existing ATS structures should be considered and procedures coordinated.

l. If ASC-areas are adjacent, procedures to facilitate transit between areas should be established. To ensure this, transit procedures contained in the respective regional ACPs should, as much as possible, be common.

m. Where neutral countries are adjacent to the ASC-area and are cooperative, ASC procedures to facilitate the transit of forces through those countries should be requested and coordinated.

n. Restrictive measures should be clearly identified, established for as short a period of time as possible, in specified airspace only, kept to a minimum, and disseminated to all users expeditiously.

o. ASC procedures must be designed to comply with the current ROE.

p. There is neither the intent nor the capability to provide individual, close control to all offensive/defensive forces.

q. Among air, land, and maritime users of airspace, commonality of the following is of particular importance:

(1) Communications/automation capabilities.

(2) Navigation/geographic referencing, to include the use of latitude/longitude, world geographic reference system, and universal transverse Mercator. The ACP should clearly state which height reference and pressure datums should be used.

(3) ID procedures/equipment capabilities.

(4) WCO and WCS.

(5) Reporting and early warning information.

(6) Terminology.

(7) Symbology.

r. When determining IFF procedures, the ACA should consider the disposition of adversary radar sites, friendly AD, and friendly forces, i.e., the forward line of own troops (FLOT).

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CHAPTER 4 - AIRSPACE CONTROL IN MARITIME AND AMPHIBIOUS OPERATIONS

0401. **Introduction.** When maritime operations are conducted by an Allied Joint Force (AJF), the JFC, through his ACA, will normally designate the maritime component command (MCC) as a SACA. For amphibious operations, the JFC, through his ACA, may also designate the commander amphibious task force (CATF) as a SACA. This should be specified in the OPLAN. The MCC will participate in the overall ASC planning process and his requirements should be incorporated into the ACP. Because of the environment in which maritime forces operate, a number of specific maritime ASC procedures differ from those used in purely land/air operations. In addition, during allied/joint operations in littoral areas, and particularly for amphibious operations, specific ASC procedures adopted may be unique, or a composite of those procedures used in land and maritime environments. The maritime or amphibious commander should ensure close coordination of ACM used when land, air, special operations, and maritime forces operate within the same ASC-area. Exchange of liaison personnel and integration of the ACS will greatly facilitate coordination of flight information, clearance of aircraft to enter and depart adjoining sectors or areas, and coordination of ASC services.

0402. **Concept of Airspace Control in Maritime and Amphibious Operations.** A maritime force will comply with the ACP, and procedures in AJP-3.3.3 and ATP-3.3.3.1.

a. **Coordinated Air/Sea Procedures.** The MCC and ACC coordinate the application of coordinated air/sea procedures (CASP). CASP provide a structure for coordinating AD or anti-air warfare (AAW) operations when AD capable warships are operating in, or adjacent to, a JOA. Warships may operate under one of four CASP categories. This permits them to contribute, to varying degrees, to the AD battle and to coordinate their AAW operations with land-based aircraft or weapon systems. The communications and command and control arrangements inherent to CASP ensure that adversary air forces are effectively engaged and that friendly aircraft are not endangered by naval forces. CASP therefore contribute directly to the overall ASC posture. The four categories of CASP are:

(1) CASP 1 ships are those units with an area AAW capability that are allocated to the shore-based ADC for AD duties as their primary task. If CASP 1 status is accepted, the MCC will delegate tactical control (TACON) to the ACC who may, in turn, delegate this TACON to the ADC. Operational control and the responsibility for logistic support will always remain with the MCC. The primary task of a CASP 1 ship will be to assist the respective AOC in compiling the recognized air picture (RAP). Additional tasks, as directed by the ADC or ACC, may include fighter control and engagement of adversary aircraft.

(2) CASP 2 ships are those units with AAW sensors, capable of assisting in the RAP compilation, but whose primary tasking does not allow them to be allocated to CASP 1. The use of their long- or medium-range surface to air missiles (SAMs) or allocated air patrols against targets that do not pose an immediate threat to the ship or units being supported will be coordinated with the respective AOC. TACON remains with the officer in tactical command (OTC).

(3) Ships that are CASP 3 are those that are unable to contribute to the RAP, but still require it. The use of their long- or medium-range SAMs, if available, against targets not posing an immediate threat the CASP 3 ships or units being supported will, when possible, be coordinated with the respective AOC. TACON remains with the OTC.

(4) CASP 4 indicates an AD capable ship (AAW weapon and/sensor), entering or berthed in a port or anchorage, which is able to assist the AOC in whose sector the ports or anchorages are located.

b. **Amphibious Objective Area.** Amphibious operations are conducted in a defined area known as the amphibious objective area (AOA). The location and size of an AOA may have considerable effect on, and implications for, any regional ACP. The airspace associated with an AOA can impact other operations and existing ASC structures, and requires coordination at JFC level. Tasking and handover procedures for operations within the AOA should be as flexible as possible. Further details on ASC doctrine for amphibious operations are contained in ATP-8.

0403. **Responsibility for Airspace Control During Maritime Operations.** A maritime commander's ASC-area or sub-area may be geographically defined and is generally referred to as the Force Air Coordination Area (FACA). The FACA is that area surrounding a force within which ACMs are required to prevent mutual air interference between friendly surface and air units and their weapons systems. Normally the FACA will coincide with the AAW area or the area of anti-submarine warfare (ASW) direct support, whichever is larger. Responsibility for ASC within a FACA is established as follows (additional information is provided in ATP-1 Vol. 1, AJP-3.3.3, and ATP- 3.3.3.1):

a. **Airspace Control Authority.** If the ASC-area assigned to the ACA covers the MCC's AOA, the ACP will likely be planned by the ACA with the anti-air warfare commander (AAWC) given responsibility for tactical execution of ACMs within the FACA or designated area. The ACA will ensure these authorities are clearly coordinated and defined in the ACP.

b. **The Officer in Tactical Command .** The OTC retains overall responsibility for ASC within his operational area. However, he normally delegates responsibility for the detailed planning and implementation of ASC to the AAWC and the air coordinator, who may be combined in the same unit.

c. **The Anti-Air Warfare Commander.** The AAWC is normally delegated responsibility for the planning and conduct of the air battle, including the employment of AAW air assets. The AAWC establishes the air coordination policy for use within the FACA and is responsible for the ACMs. The designated air coordinator, who executes the coordination plan, supports him in this respect. The the command and control warfare commander, the anti-surface warfare (ASUW) commander, and the ASW commander, assign tasks to aircraft employed in their warfare areas, remaining in compliance with the overall ACP.

0404. **Responsibility for Airspace Control in an Amphibious Task Force.** Where an ACS is established in the AOR/JOA and the scale of the air operation supporting the amphibious operation justifies it, the tactical air control center (TACC), under the CATF may be authorized as a SACA until the operational need no longer exists. Otherwise, the ACA will control the entire ACS through the JACC, although it is likely the CATF will be given responsibility for the ACMs. (In some situations, particularly when the FACA covers a large littoral area, a sector or local AAWC may be delegated authority to enforce the ACMs within the

AOA). Where no ACS is established prior to the amphibious operation, the CATF will provide airspace control until it can be transferred to a designated ACA with a supporting JACC.

0405. **Conduct of Maritime Airspace Control.** The following specific elements are used in the conduct of maritime ASC within the FACA and/or AOA:

a. Maritime ID procedures.

b. Maritime weapon coordination procedures.

c. Maritime ACMs. Details are provided in ATP-1 Vol. 1, AJP-3.3.3, ATP-3.3.3.1, and ATP-3.3.5.1.

0406. **Maritime Handover and Identification Procedures.** To facilitate the ID and handover of aircraft, a number of specific ID procedures are used by maritime units. For details of handover procedures see AJP-3.3.3. Detailed ID criteria and procedures will be published in the operational task anti-air warfare (OPTASK AAW) message or SPINS section of the ATO.

0407. **Maritime Weapon Coordination.** In maritime operations, the two methods of weapon coordination are zone coordination and area coordination (for details see ATP-1 Vol. 1 and ATP-3.3.3.1):

a. **Zone Coordination.** A type of weapon coordination within the FACA where fighters and SAMs are employed in separate zones of airspace allocated to them, within which they have freedom of action. The zones are delineated by sector, altitude, and/or range and bearing from an appropriate origin. This is the normal method of weapons coordination used in the maritime environment. In littoral operations, coordination with ACP may require the development of composite procedures, and zone coordination is more likely to be invoked.

b. **Area Coordination.** A type of weapon coordination within the FACA where fighters, SAMs, and other weapon systems can be employed in the same airspace. A missile engagement zone (MEZ), fighter engagement zone (FEZ), and crossover zone (COZ) are not activated, but may be nominated and left dormant, ready to revert to zone coordination. Area coordination is only used when a valid RAP exists, communications are reliable, and AAW coordination is of a high standard.

c. The type of weapon coordination in effect will be promulgated in the ATO, the OPTASK AAW message, or voice procedures from APP-1 using codewords.

0408. **Maritime Theater Missile Deconfliction.**

a. Due to the nature of the operational area, amphibious forces will often find themselves operating between ships launching TLAMs and their intended targets. Missile flight paths that completely avoid amphibious airspace are often impossible to implement due to geographic or political constraints. It is therefore critical the launch area coordinator (LAC) works closely with the TACC to ensure airspace is designed to allow amphibious flight operations to continue during TLAM vulnerability periods. It is particularly important that fixed-wing aircraft can descend through the airspace and recover on amphibious shipping.

b. For TLAM operations in an AOA (or other amphibious airspace), the LAC should provide the CATF or strike group commander specific TLAM mission information, such as TLAM AOA entry points, flight corridors and altitudes, timing, and target locations (if within the AOA). In the LAC intentions message, firing units should be advised of the composition of the AOA, and deconfliction actions necessary for the area. When possible, the LAC should station firing units to minimize TLAM flights through the AOA. If TLAM targets are located within the AOA, the LAC and CATF or strike group commander should inform the TLAM strike coordinator of any deconfliction issues and provide notice to ships in applicable Tomahawk maneuver areas.

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CHAPTER 5 - INTEGRATION OF AIR TRAFFIC SERVICES INTO THE AIRSPACE CONTROL SYSTEM

0501. **Air Traffic Control in the Airspace Control System.** The role of the terminal airfield operations element (ATC and airfield management) is to support flight operations. Close coordination between ASC, AD, and ATC elements is required to maximize combat effectiveness, while preventing fratricide and mutual interference. Terminal and enroute ATS and airfield management should be capable of supporting operations as required by the JFC. The JFC may have at his disposal forces capable of providing ATC in support of both enroute and terminal flight operations. These forces are designed to ensure safe, flexible, and efficient use of both the enroute structure and terminal airspace. They also provide continuity of control with the tactical air control system and air base defense units. ATC and airfield management personnel will need to deploy and support operations at bare-base or host-nation locations. While the focus of the capabilities is on deploying large-scale forces into a bare-base scenario, airfield operations packages can also be adapted to small unit and/or single-mission deployments. For Allied operations beyond the AOR/JOA, integration of military ATC requirements with the host-nation area ATS and procedures should be coordinated.

a. **Flight Following Mechanisms.** Normally, the ATSuses an automated flight planning system to assist air traffic controllers in maintaining positive and procedural control of both enroute and terminal areas.

b. **Procedural Control versus Radar Control.** Environmental and equipment factors may preclude radar control of all air traffic. Because of this potential constraint, appropriate procedural means should be available.

c. **Airfield Management.** Airfield management provides notice to airmen and flight planning. It also provides airfield criteria for inspections, markings, safety, security, parking plans, munitions, crash rescue, and hot fuel areas.

d. **Airfield Operations.** Airfield operations will coordinate, integrate, standardize, and regulate the ATS and airfield management assets provided by each of the components to increase operational effectiveness.

The ACA will coordinate and plan appropriate follow-on, general-purpose ATS forces.

0502. **Planning.** Commanders determine forces required, arrival sequence, and what level of risk they are willing to expose airfield operations forces. Additionally, deployed airfield operations forces should be prepared to be self-supporting during early stages of an operation as logistics system may not yet be in place. Initial airfield operations should plan to deploy with adequate capability and supplies to maintain operations until the theatre is capable of sustaining operations, and the resupply pipeline is established.

0503. **Capabilities.** ATS, in conjunction with airfield operations personnel, provide terminal area and airfield support from austere to fully supported host-nation airfields, with capabilities that include mobile control towers, surveillance radar, precision-landing systems, terminal navigational aids, space- and ground-based capabilities. Special tactics teams can provide austere airfield operations. General-purpose air traffic controllers are also capable of providing an initial bare-base ATC capability, but generally are not capable of autonomous operations and require additional support.

0504. **Safety and Standardization.** To enhance safety, ICAO rules and procedures should be used. Terminal airspace control will follow procedures published in the ACP, amplified by the ACO and SPINS as required. If military ATC is provided at an airfield that is also used by civilian flights, established military procedures and relevant publications (e.g., releasable parts of the ACO and SPINS) should be made available to civil operators. Revised criteria and procedures should be authorized by the ACA in consideration of the degree of risk deemed acceptable by the JFC. When NATO forces augment a civil or foreign ATC facility, host-nation legislation, regulations, and procedures should be observed. Coordination with the regional air movement coordination center should also be accomplished.

ANNEX A - AIRSPACE CONTROL MEANS

1. This Annex provides a description of some of the ACMs used in joint operations, listed in alphabetical order. It also includes relevant civil airspace structures and other ASC-related terms from the ACO message text format in APP-11.

2. If the ACMs listed in this Annex do not satisfy operational requirements, this document does not limit the ACA in specifying geographical areas and their usage as necessary for promulgation in the ACP/ACO. All ACMs will be published in the ACO.

Most Often Used Airspace Control Means

Air Route (AIRRTE). Air Routes are bi-directional routes established to direct aircraft through air defenses, where appropriate, providing minimum risk passage. AIRRTEs will be utilized only by support traffic.

a. Pre-planned AIRRTEs are mainly based on the existing peacetime ATS route structure as reflected in national aeronautical information publications.

b. Horizontal and vertical dimensions of AIRRTEs will be published in ACPs.

c. Whenever possible, national ATS will continue to provide control service to aircraft flying on AIRRTEs.

d. Requests for activation of additional AIRRTEs are to be made to the appropriate JACC.

e. Activated AIRRTEs will be published in the ACO.

Altitude Reservation (ALTRV). An ALTRV is a block altitude reserved for aircraft to transit or loiter for mission accomplishment. An ALTRV can be classified as a moving or stationary ACM. Typical missions requiring assignment of an ALTRV may include air-to-air refuelling (AAR), airborne early warning (AEW), signals intelligence, ECM, or aerial spotting. An ALTRV may have lateral limits as well as mandatory upper and lower limits.

Approach Corridor (APPCOR). An approach corridor is established for the safe passage of land based aircraft joining or departing a maritime force. The approach

corridor is usually established on a line between entry/exit gate, and either the force disposition centre or along the position and intended movement of the force. The inner boundary is determined by the identification safety range (ISR).

Base Defence Zone (BDZ). A zone established around airbases to enhance the effectiveness of local ground based air defense systems.

a. Pre-planned BDZs will be published in the ACP.

b. Requests for activation of BDZs are to be made to the ACA.

c. Activated BDZs will be published in the ACO.

d. BDZs have specific entry/exit and IFF procedures.

Coordination Level (CL). The CL is a procedural means to separate fixed and rotary wing aircraft by determining an altitude below which fixed wing aircraft normally will not fly.

a. The height of the CL will be published in the ACP.

b. The ACP/ACO will specify whether the CL is advisory or mandatory.

c. All airspace users should coordinate with the appropriate airspace coordinating entities when transitioning or firing through the CL.

Crossover Zone (COZ). The COZ is the airspace beyond the MEZ which may be entered by AD aircraft when in hot pursuit to complete an interception. The aircraft must give a countdown of seconds remaining to achieve engagement.

a. A COZ extends beyond the MEZ specified by the establishing authority.

b. The COZ is promulgated in the OPTASK AAW message.

Entry/Exit Gate (EG). A Entry/Exit Gate is the point to which an aircraft will be directed to commence the transit inbound/outbound from an airfield or force at sea.

Fighter Engagement Zone (FEZ).

a. In AD, airspace of defined dimensions within which the responsibility for engagement of air threats normally rests with fighter aircraft.

b. In maritime usage, the airspace beyond the COZ out to limits defined by the OTC (taking into account the fighter's combat radius and effective weapon range), in which fighters have freedom of action to identify and engage air targets.

Force Air Coordination Area (FACA). In maritime usage, an area surrounding a force within which air coordination measures are required to prevent mutual interference between all friendly surface and air units and their weapon systems.

Forward Area. The coverage area of all forward deployed GBAD/AMD weapon systems. The forward and rear boundaries will be published in the ACO.

Hand-over Gate (HG). A Hand-over Gate is the point at which the control of the aircraft, if radar hand-over is used, changes from one controller to another.

High-Density Airspace Control Zone (HIDACZ). Airspace of defined dimensions, designated by the airspace control authority, in which there is a concentrated employment of numerous and varied weapons/airspace users. (AAP-6)

a. Procedures for activation of HIDACZs are published in the ACP.

b. Pre-planned HIDACZs will be published and activated in the ACO.

c. Promulgation of such zones should include:

(1) Vertical and horizontal dimensions.

(2) Controlling authority.

(3) Activation times.

(4) Radio frequencies (if applicable).

Identification Friend-or-Foe (IFF) Switching Line (IFFOFF/IFFON). IFF Switch OFF and IFF Switch ON Lines are to be established and will be published in the ACO. All aircraft en-route to targets/areas beyond the IFF Switch ON Line should stop squawk as they cross the IFF Switch OFF Line. Aircraft conducting operations between the IFF Switch On/Switch OFF Lines, or those returning to friendly territory after crossing the Switch ON Line, should squawk at all times.

Identification Safety Point (ISP). An ISP is the point at which aircraft, on joining a maritime force, will attempt to establish two-way communications with the surface force and commence ID procedures.

Identification Safety Range (ISR). The minimum range to which aircraft may close to a maritime force without having been positively identified as friendly to ensure that the maritime force does not mistake the aircraft for hostile. The ISR is promulgated by the OTC in the Operation Order or appropriate tactical message.

Marshalling Gate (MG). A Marshalling Gate is the point to which aircraft fly for air traffic control purposes prior to commencing an outbound transit after takeoff or prior to landing.

Missile Arc (MISARC). In maritime usage, an area of 10 degrees or as large as ordered by the OTC, centered on the bearing of the target with a range that extends to the maximum range of the SAM, which:

a. Is automatically established when an engagement order has been issued assigning a target in the FEZ to a SAM system.

b. Is to be cleared automatically by all friendly aircraft, as the WCS becomes “Weapons Free” in this area.

Missile Engagement Zone (MEZ).

a. In land-based AD, a MEZ is a volume of airspace of defined dimensions within which the responsibility for engagement normally rests with the GBAD/AMD systems. In this context, the MEZ is not an ACM.

b. In the maritime environment, there are two types of MEZs:

(1) Standard SAM Missile Engagement Zone. A designated airspace which, under WCS Weapons Free, ships are automatically cleared to fire at any target which penetrates the zone, unless known to be friendly, and adhering to ASC procedures, or unless otherwise directed by the AAWC.

(2) Silent SAM Missile Engagement Zone (SSMEZ). A designated area, promulgated in the OPTASK AAW message, within which:

(a) Ships remain covert, receiving the air picture via data links.

(b) Ship WCS is automatically “Weapons Free.”

(c) Friendly aircraft are allowed in the SSMEZ only after a positive clearance from the AAWC, except for AEW, ASUW, and ASW aircraft that are required to operate within this area, provided the following criteria are met:

i. SAM ships are alerted to the mission.

ii. Aircraft are kept under positive control.

iii. Aircraft are being continuously tracked and their position transmitted via data link.

iv. Data Registration between data link reporting unit and SAM ship is excellent.

(d) No safety sectors are established.

Restricted Operating Zone (ROZ). Airspace of defined dimensions, designated by the airspace control authority in response to specific situations and/or requirements, within which the operation of one or more airspace users is restricted. (NTMS) Examples of ROZs include refueling orbits, terminal approach holding areas, landing/drop zones, etc.

a. A pre-planned ROZ will be published in the ACP.

b. Requests for activation of ROZs are to be made to the ACA.

c. Activated ROZs will be published in the ACO.

d. Unless defined in ACPs, promulgation of such zones should include:

(1) Vertical and horizontal dimensions.

(2) Intended use.

(3) Times of activation.

(4) Controlling authority and frequencies, if applicable.

(5) Restrictions for other airspace users, e.g., WCS.

Safe Lane (SL). A bi-directional lane connecting an airbase, landing site, and/or BDZ to adjacent routes/corridors. SLs may also be used to connect adjacent activated routes/corridors.

a. Pre-planned SLs and their dimensions will be contained in the ACP.

b. Activated SLs will appear in the ACO.

c. On departure and recovery, aircraft are to adhere to SLs, following additional local procedures as necessary.

Safety Sector (SAFES). A Safety Sector is an established sector in which aircraft are safe from attack by friendly fighter or weapons to allow aircraft to approach or return to the maritime force.

a. A safety sector is defined by the AAWC and, when required, coordinated with the ACA in terms of:

(1) Origin.

(2) Range.

(3) Centre bearing.

(4) Width.

(5) Height band.

(6) Time.

(7) Controlling agency.

b. Sectors should be numbered and designated by the AAWC, and are normally dormant until activated.

Ship Control Zone (SCZ). A SCZ is an area activated around a ship operating aircraft, which is not to be entered by friendly aircraft without permission, to prevent friendly interference.

Special Corridor (SC). In air operations, an air corridor established to accommodate the special routing requirements of specific missions. (NTMS)

a. Requests for activation of SCs are to be submitted to the ACA.

b. Activated SCs will be published in the ACO.

c. Promulgation of such corridors should include:

(1) Route designators or easily identified references.

(2) Vertical and horizontal dimensions.

(3) Activation period(s).

(4) Users, where applicable.

Slow Aviation Assets Flight Routes (SAAFR). SAAFRs are established to route land component aviation assets in the forward area in direct support of ground operations.

a. SAAFRs are normally established below the CL and their dimensions shall be appropriate to the mission.

b. Requests:

(1) Since SAAFR are normally below the CL, they do not generally require ACA approval nor are they reflected in the ACO.

(2) SAAFRs will be developed through direct coordination between the appropriate agencies at the land component level.

c. The ACP shall reflect the coordination and dissemination requirements for activated SAAFR information.

d. Only specifically tasked air assets are authorized to use activated SAAFRs.

Temporary Minimum Risk Route (TMRR). A temporary route of defined dimensions established to route air traffic between transit routes (TRs) or the rear boundary of the forward area and their operations area in direct support of ground operations.

a. Requests:

(1) Due to the short tasking time required for activation of TMRRs, TMRR dimensions for the mission may not be reflected in the ACO.

(2) Use of TMRRs will be published in the ATO when time permits, or by direct coordination between the AOC and appropriate agencies at the land component headquarters.

b. Only specifically tasked air assets are authorized to use activated TMRRs.

Time Slot (TS). Period of time during which certain activities are governed by specific regulations. (AAP-6) During the period of time indicated by the TS, certain airspace activities within the associated airspace are restrained to permit other users greater freedom of operation. At the end of this period, the restraint is automatically cancelled.

a. Promulgation of a TS should indicate:

(1) Horizontal dimensions (area, radius).

(2) Vertical Dimensions (heights, altitudes, flight-levels).

(3) The user system restrained.

(4) Period of restraint.

b. A TS may be promulgated by ACO or by a tactical order. When published by tactical order, confirmation of receipt from all affected restraint systems must be obtained before implementation of the TS.

Transit Corridor (TC). TCs are bi-directional corridors established in the rear area to route aircraft through air defenses, in the rear area where appropriate, with minimum risk.

a. Pre-planned TCs will be published in the ACP, as will their horizontal and vertical dimensions.

b. ATS will not normally be provided to traffic flying in a TC.

c. Requests for activation of TCs are to be made to the ACA.

d. Activated TCs will be published in the ACO.

Transit Route (TR). In air operations, a temporary air corridor of defined dimensions established in the forward area to minimize the risks to friendly aircraft from friendly air defenses or surface forces. (AAP-6) TRs are bi-directional routes and should avoid weapons free zones and BDZs.

a. TRs may link up with TCs or appear independently.

b. Horizontal and vertical dimensions of TRs will be published in the ACP.

c. Requests for activation of TRs are to be submitted to the ACA.

d. Activated TRs will be published in the ACO.

Traverse Level (TL). That vertical displacement above low level air defence systems, expressed both as height and altitude, at which aircraft can cross the area. (AAP-06) TLs are promulgated to improve the effectiveness of the air defense systems by providing an extra friendly discriminator.

a. TLs normally will be used in conjunction with TCs as specified in the ACP.

b. Activated TLs will be published in the ACO.

Weapons Free Zone (WFZ). An air defense zone established around key assets or facilities, other than airbases, which merit special protection by GBAD assets where weapons may be fired at any target not positively identified as friendly.

a. Pre-planned WFZs will be published in the ACP.

b. Requests for activation of WFZs are to be made to the ACA.

c. Activated WFZs will be published in the ACO.

d. Unless defined in the ACP, promulgation of such zones should include:

(1) Vertical and horizontal dimensions.

(2) Control authority and frequency.

Airspace Control Means Groupings

1. This section lists ACMs and other information relevant for ASC (e.g., civil airspace structure) from the NATO ACO message.

2. The ACO message text format (MTF) can support NATO and national information to allow those nations with their own ASC capability to use a single MTF for both coalition and national operations. Therefore, some elements in the ACO MTF reflect national information and may not be in line with common NATO usage. This publication will not list the national terms from the ACO MTF.

3. For ease of use, the ACO MTF uses an unambiguous relation for sorting the ACMs and other ASC relevant means to segment airspace into groupings. Due to the variety of usages, ROZs are a separate group. Within the ACO MTF, these groupings are labeled as “Type of ACMs.” They are listed in Table A-1.

Table A-1

Corridor Route	CORRTE	A bi-directional or restricted air route of travel specified for use by aircraft.
Areas	AREA	An area and the airspace above it within which procedures are established to minimize mutual interference.
Procedural Means	PROC	Those airspace control means which rely on previously agreed and promulgated orders and procedures.
Reference Points	REPT	A point or set of coordinates generally used for control purposes or to indicate a reference position.
Restricted Operating Zone	ROZ	Airspace of defined dimensions, designated by the airspace control authority in response to specific situations and/or requirements, within which the operation of one or more airspace users is restricted

Airspace Control Means Summary

1. The representative Airspace Control Means listed below are used to provide more detailed information on the particular way a volume of airspace is used beyond the procedural information that is provided by the ACM Groupings.

Table A-2

Advisory Route	ADVRTE	A designated route along which air traffic advisory service is available.
Air Control Point	ACP	A point that is defined and used for navigation, command and control, and communication.
Air Defence Identification Zone	ADIZ	Airspace within which ready identification, location, and control of airborne vehicles are required.
Air Route	AIRRTE	The navigable airspace between two points, identified to the extent necessary for the application of flight rules.
Air-to-Air Refueling Area	AAR	Airspace of defined dimensions set aside for air-to-air refueling operations. (AAP-6)
Airborne Command and Control Area	ABC	Airspace of defined dimensions established specifically for aircraft conducting battlefield command and control.
Airborne Early Warning Area	AEW	Airspace of defined dimensions established specifically for aircraft conducting early warning.
Airspace Control Area	ASCA	Airspace which is laterally defined by the boundaries of the area of operations. The airspace control area may be subdivided into airspace control sub-areas. (AAP-6)
Airway	ARWY	A control area or portion thereof established in the form of a corridor marked with radio navigational aids, (AAP-6)
Altitude Reservation	ALTRV	A block of altitude reserved for aircraft to transit or loiter.
Amphibious Objective Area	AOA	A geographical area, delineated in the initiating directive, for purposes of command and control within which is located the objective(s) to be secured by the amphibious task force. (AAP-6)
Approach Corridor	APPCOR	Airspace established for the safe passage of land-based aircraft joining or departing a maritime force.

Area Navigation Route	NAVRTE	An air traffic services route established for the use of aircraft capable of employing area navigation.
ATS Route	ATSRTE	A specified route designed for channeling the flow of traffic as necessary for the provision of air traffic services.
Base Defence Zone	BDZ	A zone established around airbases to enhance the effectiveness of local ground-based air defense systems.
Buffer Zone	BZ	Airspace designed specifically to provide a buffer between various airspace control means.
Carrier Control Zone	CCZONE	An area around a ship operating fixed-/rotary-wing aircraft.
Class-A Airspace	CLSA	Airspace in which only IFR flights are permitted; all flights are subject to air traffic control service and are separated from each other.
Class-B Airspace	CLSB	Airspace in which IFR and VFR flights are permitted; all flights are subject to air traffic control service and are separated from each other.
Class-C Airspace	CLSC	Airspace in which IFR and VFR flights are permitted; all flights are subject to air traffic control service and IFR flights are separated from other IFR flights and from VFR flights. VFR flights are separated from IFR flights and receive traffic information with respect to other VFR flights.
Class-D Airspace	CLSD	Airspace in which IFR and VFR flights are permitted; all flights are subject to air traffic control service and IFR flights are separated from other IFR flights and receive traffic information with respect to VFR flights. VFR flights receive traffic information with respect to all other flights.
Class-E Airspace	CLSE	IFR flights and VFR flights are permitted; all flights are subject to air traffic control service and are separated from other IFR flights. All flights receive traffic information as far as practical.
Class-F Airspace	CLSF	Airspace in which IFR and VFR flights are permitted; all participating IFR flights receive an air traffic advisory service and all flights receive flight information service if requested.
Class-G Airspace	CLSG	Airspace in which IFR and VFR flights are permitted; all flights receive flight information service if

		requested.
Conditional Route	CDR	A non-permanent air traffic service route or portion thereof which can be planned and used only under certain conditions.
Contact Point	CP	In air operations, the position at which a mission leader makes radio contact with an air control agency.
Control Area	CTA	A controlled airspace extending upwards from a specified limit above the earth. (AAP-6)
Control Zone	CONTZN	A controlled airspace extending upwards from the surface of the earth to a specified upper limit. (AAP-6)
Coordinated Air Defence Area	CADA	A mutually defined block of airspace between land-based air commander and a naval commander when their forces are operating in close proximity to one another.
Coordinated Fire Line	CFL	A line beyond which conventional or improved conventional indirect fire means, such as mortars, field artillery, and naval gunfire may fire without additional coordination.
Coordination Level	CL	A procedural means to separate fixed and rotary wing aircraft by determining an altitude below which fixed wing aircraft normally will not fly.
Cross Border Area	CBA	A temporary segregated area established over international boundaries for specific operational requirements.
Crossover Zone	COZ	Airspace beyond the missile engagement zone into which fighters may pursue targets to complete interception.
Danger Area	DA	In air traffic control, an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times. (AAP-6)
Drop Zone	DZ	A specified area upon which airborne troops, equipment, or supplies are airdropped. (AAP-6)
Electronic Combat	EC	Airspace established specifically for aircraft engaging in electronic combat.
Entry/Exit Gate	EG	The point to which an aircraft will be directed to commence the transit inbound/outbound from an airfield or force at sea.
Fighter Engagement	FEZ	In air defense, that airspace of defined dimensions

Zone		within which the responsibility for engagement of air threats normally rests with fighter aircraft.
Fire Support Coordination Line	FSCL	Within an assigned area of operations, a line established by a land or amphibious force commander to denote coordination requirements for fires by other force elements which may affect the commander's current and planned operations. The fire support coordination line applies to fires of air, ground or sea weapons using any type of ammunition against surface or ground targets. (AAP-6)
Flight Information Region	FIR	An airspace of defined dimensions within which flight information service and alerting service are provided. (AAP-6)
Force Air Coordination Area	FACA	An area surrounding a force within which air coordination measures are required to prevent mutual interference between all friendly surface and air units and their weapon systems.
Forward Edge of the Battle Area	FEBA	The foremost limits of a series of areas in which ground combat units are deployed, excluding the areas in which the covering or screening forces are operating, designated to coordinate fire support, the positioning of forces, or the maneuver of units. (AAP-6)
Forward Line of Own Troops	FLOT	A line which indicates the most forward positions of friendly forces in any kind of military operation at a specific time. (AAP-6)
Hand-over Gate	HG	The point at which the control of the aircraft, if radar hand-over is used, changes from one controller to another.
High-Density Airspace Control Zone	HIDACZ	Airspace of defined dimensions, designated by the airspace control authority, in which there is a concentrated employment of numerous and varied weapons/airspace users. (AAP-6)
Identification Safety Point	ISP	A point at which aircraft, on joining a maritime force, will attempt to establish two-way communications with the surface force and commence identification procedures.
Identification Safety Range	ISR	The minimum range to which aircraft may close to a maritime force without having been positively

		identified as friendly to ensure that the maritime force does not mistake the aircraft for hostile.
IFF Switch Off Line	IFFOFF	The line demarking where friendly aircraft stop emitting an IFF signal.
IFF Switch On Line	IFFON	The line demarking where friendly aircraft start emitting an IFF signal.
Landing Zone	LZ	Any specified zone used for the landing of aircraft. (AAP-6)
Low-Level Transit Route	LLTR	A temporary corridor of defined dimensions established in the forward area to minimize the risk to friendly aircraft from friendly air defenses or surface forces.
Missile Engagement Zone	MEZ	In air defense, that airspace of defined dimensions within which the responsibility for engagement of air threats normally rests with the designated GBAD/AMD system. In maritime environment, a designated airspace in which, under weapons control status “weapons free,” ships are automatically cleared to fire at any target which penetrates the zone.
Marshalling Gate	MG	A point to which aircraft fly for air traffic control purposes prior to commencing an outbound transit after takeoff or prior to landing.
Missile Arc	MISARC	An area of 10 degrees or as large as ordered by the officer in tactical command, centered on the bearing of the target with a range that extends to the maximum range of the surface-to-air missile.
No Fly Zone	NOFLY	Airspace of specific dimensions set aside for a specific purpose in which no aircraft operations are permitted, except as authorized by the appropriate commander and controlling agency.
Pickup Zone	PZ	Aerial retrieval area.
Prohibited Area	PROHIB	An airspace of defined dimensions, above the land areas or territorial waters of a state within which the flight of aircraft is prohibited. (AAP-6)
Reconnaissance Area	RECCE	Airspace established specifically for aircraft conducting reconnaissance.
Reduced Coordination	RCA	A portion of defined dimensions within which general air traffic is permitted "off-route" without requiring general air traffic controllers to initiate coordination

		with operational air traffic controllers.
Restricted Area	RA	Airspace of defined dimensions, above the land areas or territorial waters of a state, within which the flight of aircraft is restricted in accordance with certain specified conditions. (AAP-6)
Safe Lane	SL	A bi-directional lane connecting an airbase, landing site and/or base defense zone to adjacent routes/corridors. Safe lanes may also be used to connect adjacent activated routes/corridors.
Safety Sector	SAFES	Established to route friendly aircraft to maritime forces with minimum risk.
Ship Control Zone	SCZ	An area activated around a ship operating aircraft, which is not to be entered by friendly aircraft without permission, in order to prevent friendly interference.
Special Corridor	SC	In air operations, an air corridor established to accommodate the special routing requirements of specific missions. (NTMS)
Slow Aviation Assets Flight Route	SAAFR	Route established below the coordination level to facilitate movement of land component aviation assets in the forward area in direct support of ground operations.
Surface-to-Surface Missile System	SSMS	Airspace defined specifically for Army Tactical Missile System and Tomahawk land attack missile launch and impact points.
Temporary Minimum Risk Route	TMRR	A temporary route established to route air traffic between transit routes or the rear boundary of the forward area and their operations area in direct support of ground operations.
Temporary Segregated Area	TSA	An airspace of defined dimensions within which activities require the reservation of airspace for the exclusive use of specific users during a determined period of time.
Terminal Control Area	TCA	A control area normally established at the confluence of Air Traffic Services routes in the vicinity of one or more major aerodromes. (AAP-6)
Training Area	TRNG	Airspace created during a contingency for the purpose of conducting training.
Transit Corridor	TC	Bi-directional corridor in the rear area. Air traffic services not normally provided.
Transit Route	TR	In air operations, a temporary air corridor of defined

		dimensions established in the forward area to minimize the risks to friendly aircraft from friendly air defences or surface forces. (AAP-6)
Traverse Level	TL	That vertical displacement above low level air defense systems, expressed both as a height and altitude, at which aircraft can cross that area. (AAP-6)
Unmanned Aircraft	UA	Airspace of defined dimensions created specifically for unmanned aircraft operations.
Weapons Free Zone	WFZ	An air defense zone established for the protection of key assets or facilities, other than air bases, where weapons systems may be fired at any target not positively recognized as friendly.

Airspace Control Plan

1. Every ACP will be unique and should be based on the requirements and intentions of the JFC's campaign/OPLAN and objectives, the capabilities and limitations of friendly and adversary forces, the contributions and restrictions from host-nation and multi-national forces, and the access required to the airspace by non-belligerent aircraft. Because ASC needs are likely to change throughout an operation, the ACP should be an evolutionary document. The notional outline below can be used in developing the ACP.

a. The conditions under which the orders, instructions, guidance and procedures in the ACP are applicable, e.g., the OPLAN, work-up training, exercise, etc.

b. The boundaries of the ASC-area within which the ACP applies.

c. ACA and the location of the ACA's headquarters.

d. Capabilities that exist within the ASC-area and which are able to provide ASC and the means of communicating amongst them. Locations of radar sites and training areas.

e. Duties and responsibilities of:

(1) The ACA.

(2) The JACC.

(3) Each airspace user. This should also contain any requirements for liaison and coordination with the ACA.

(4) Each element within the ACS.

f. C2 arrangements between the ACA, ADC, component commands, and fire support agencies, along with the procedures for coordinating and de-conflicting AD and operational requirements.

g. C2 arrangements with the host nation and other theatre AD, ACS and ATC systems (military and civil) and/or international and non-governmental organizations.

h. C2 arrangements between NATO and non-NATO forces for de-confliction and coordination of airspace requirements.

i. Plans to provide for ASC operations under degraded conditions, e.g., alternate headquarters, alternatives for key radar and command and control nodes.

j. Positive and procedural ASC methods for all elements of the joint force. These may include:

(1) Control of SACAs, HIDACZs, and ROZs.

(2) Pre-planned/on-order ROZ/kill boxes.

(3) Procedures for entering/transiting ROZs.

(4) Relative priority of ACMs, e.g., TR vs ROZ.

(5) Location of active orbit areas.

(6) Active WFZs and UAS operating areas.

(7) Delineation of coordination procedures and responsibility for the CL.

k. Procedures to propose, approve, promulgate, and modify each procedural ACM available.

l. IFF/SIF and any other combat ID procedures.

m. Procedures and the systems used to compile and promulgate the ACO. The ACO should normally contain:

(1) Modifications to any of the guidance and/or procedures contained in the ACP.

(2) Activation or changes to IFF/SIF procedures.

(3) Activation or changes to positive control of ACMs.

(4) Activation or changes to procedural control of ACMs.

(5) Procedures for entering and transiting ROZs.

(6) The location of active orbit areas.

(7) Active WFZs and UAS operating areas.

n. All conventions used in the ACP, e.g., AOR/JOA geo-reference standard datums, units of measurement, etc.

NOTE: There is no preferred solution for airspace management. Each operation requires thought and innovation to make a plan work, particularly against an adept adversary. The outline above should not be seen as prescriptive, as any ACP should be responsive to operational developments.

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PART I - ACRONYMS AND ABBREVIATIONS

For ready reference, certain acronyms used in this publication and/or in airspace control in general, are given below:

AAP	ALLIED ADMINISTRATIVE PUBLICATION
AAR	AIR-TO-AIR REFUELING
AAW	ANTI-AIR WARFARE
AAWC	ANTI-AIR WARFARE COMMANDER
ACA	AIRSPACE CONTROL AUTHORITY
ACC	AIR COMPONENT COMMANDER
ACM	AIRSPACE CONTROL MEANS
ACMREQ	AIRSPACE CONTROL MEANS REQUEST
ACO	AIRSPACE CONTROL ORDER
ACP	AIRSPACE CONTROL PLAN
ACS	AIRSPACE CONTROL SYSTEM
AD	AIR DEFENCE
ADC	AIR DEFENSE COMMANDER
ADP	AIR DEFENSE PLAN
AEW	AIRBORNE EARLY WARNING
AJF	ALLIED JOINT FORCE
AJP	ALLIED JOINT PUBLICATION
ALTRV	ALTITUDE RESERVATION
AMD	AIR MISSILE DEFENSE
AOA	AMPHIBIOUS OBJECTIVE AREA
AOC	AIR OPERATIONS CENTRE
AOR	AREA OF RESPONSIBILITY
APP	ALLIED PROCEDURAL PUBLICATION
AIRRTE	AIR ROUTE
ASC	AIRSPACE CONTROL
ASUW	ANTI-SURFACE WARFARE
ASW	ANTI-SUBMARINE WARFARE
ATC	AIR TRAFFIC CONTROL
ATO	AIR TASKING ORDER
ATP	ALLIED TACTICAL PUBLICATION

ATS	AIR TRAFFIC SERVICE
BDZ	BASE DEFENCE ZONE
CADA	COORDINATED AIR DEFENSE AREA
CASP	COORDINATED AIR/SEA PROCEDURES
CATF	COMMANDER AMPHIBIOUS TASK FORCE
C2	COMMAND AND CONTROL
C3	CONSULTATION, COMMAND AND CONTROL
CL	COORDINATION LEVEL
COZ	CROSSOVER ZONE
NA5CRO	NON-ARTICLE 5 CRISIS RESPONSE OPERATION
FACA	FORCE AIR COORDINATION AREA
FEZ	FIGHTER ENGAGEMENT ZONE
FLOT	FORWARD LINE OF OWN TROOPS
FSCM	FIRE SUPPORT COORDINATION MEASURE
GBAD	GROUND-BASED AIR DEFENCE
HIDACZ	HIGH-DENSITY AIRSPACE CONTROL ZONE
ICAO	INTERNATIONAL CIVIL AVIATION ORGANIZATION
ID	IDENTIFICATION
IFF	IDENTIFICATION FRIEND-OR-FOE
ISP	IDENTIFICATION SAFETY POINT
ISR	IDENTIFICATION SAFETY RANGE
JACC	JOINT AIRSPACE CONTROL CENTRE
JFACC	JOINT FORCE AIR COMPONENT COMMANDER
JFC	JOINT FORCE COMMANDER
LAC	LAUNCH AREA COORDINATOR
LLTR	LOW-LEVEL TRANSIT ROUTE
MCC	MARITIME COMPONENT COMMANDER
MEZ	MISSILE ENGAGEMENT ZONE
NA5CRO	NON-ARTICLE 5 CRISIS RESPONSE OPERATION
NATO	NORTH ATLANTIC TREATY ORGANIZATION
OPTASK AAW	OPERATIONAL TASKING ANTI-AIR WARFARE
OTC	OFFICER IN TACTICAL COMMAND
RAP	RECOGNIZED AIR PICTURE
ROE	RULES OF ENGAGEMENT
ROZ	RESTRICTED OPERATING ZONE

SAAFR	SLOW AVIATION ASSETS FLIGHT ROUTE
SACA	SUB-AREA AIRSPACE CONTROL AUTHORITY
SAM	SURFACE-TO-AIR MISSILE
SC	SPECIAL CORRIDOR
SCZ	SHIP CONTROL ZONE
SL	SAFE LANE
SPINS	SPECIAL INSTRUCTIONS
TACON	TACTICAL CONTROL
TC	TRANSIT CORRIDOR
TL	TRAVERSE LEVEL
TMRR	TEMPORARY MINIMUM-RISK ROUTE
TR	TRANSIT ROUTE
TS	TIME SLOT
WCO	WEAPONS CONTROL ORDER
WCS	WEAPONS CONTROL STATUS
WFZ	WEAPONS FREE ZONE

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PART II - TERMS AND DEFINITIONS

air defence (AD)
All measures designed to nullify or reduce the effectiveness of hostile air action. (AAP-6)

airspace control (AC) (ASC)
The implementation and coordination of the procedures governing airspace planning and organization in order to minimize risk and allow for the efficient and flexible use of airspace. (AAP-6)

airspace control area
Airspace which is laterally defined by the boundaries of the area of operations. The airspace control area may be subdivided into airspace control sub-areas. (AAP-6)

airspace control authority (ACA)
The commander designated to assume overall responsibility for the operation of the airspace control system in his or her assigned area. (AAP-6)

airspace control boundary
The lateral limits of an airspace control area, airspace control sub-area, high density airspace control zone, or airspace restricted area. (AAP-6)

airspace control means (ACM)
Operational means employed to facilitate the efficient use of airspace to accomplish missions and simultaneously provide safeguards for friendly forces. (This term is a new term and definition and will be processed for NATO Agreed status)

airspace control order (ACO)
An order implementing the airspace control plan that provides the details of the approved requests for airspace control means. It is published either as part of the air tasking order or as a separate document. (This term is a new term and definition and will be processed for NATO Agreed status)

airspace control plan (ACP)
The document approved by the joint force commander that provides specific planning guidance and procedures for the airspace control system for the joint force operational area. (This term is a new term and definition and will be processed for NATO Agreed status)

airspace control system (ACS)
An arrangement of those organizations, personnel, policies, procedures and facilities required to perform airspace control functions. (AAP-6)

airspace restrictions
Special restrictive measures applied to segments of airspace of defined dimensions. (AAP-6)

altitude
The vertical distance of a level, a point or an object considered as a point, measured from mean sea level. (AAP-6)

command and control (C2)
The authority, responsibilities and activities of military commanders in the direction and co-ordination of military forces and in the implementation of orders related to the execution of operations. (AAP-31)

consultation, command and control (C3)
The responsibilities and activities of political, military and civil authorities in political consultation, including crisis management and nuclear consultation, and civil emergency planning, and the authority, responsibilities and activities of military commanders in the direction and coordination of military forces and in the implementation of orders related to the execution of operations. (AAP-31)

rules of engagement (ROE)
Directives issued by competent military authority which specify the circumstances and limitations under which forces will initiate and/or continue combat engagement with other forces encountered. (AAP-6)

tactical control (TACON)
The detailed and, usually, local direction and control of movements or manoeuvres necessary to accomplish missions or tasks assigned. (AAP-6)

weapon control status (WCS)
The degree of freedom granted to a designated weapon system to engage targets in a given environment. (AAP-6)

weapons free
In air defence, a weapon control order imposing a status whereby weapons systems may be fired at any target not positively recognized as friendly. (AAP-6)

weapons hold
In air defence, a weapon control order imposing a status whereby weapons systems may only be fired in self-defence or in response to a formal order. (APP-6)

weapons tight
In air defence, a weapon control order imposing a status whereby weapons systems may be fired only at targets recognized as hostile. (AAP-6)

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REFERENCE PUBLICATIONS

AAP-6, NATO Glossary of Terms
AAP-15, NATO Glossary of Abbreviations
AAP-31, NATO Glossary of Communication and Information Systems Terms and Definitions
AC/92-D/960, Organization and Procedures for Air Traffic Management in Times of Crisis and Hostilities
AJP-01 (B), Allied Joint Doctrine
ATP-1, Allied Maritime Tactical Instructions and Procedures
ATP-8, Doctrine for Amphibious Operations
ATP-31, NATO Above Water Warfare Manual
AJP-3.3, Allied Joint Doctrine for Air And Space Operations
AJP-3.3.3, Air Maritime Coordination
APP-1, Allied Maritime Voice Reporting Procedures
APP-7, Joint Brevity Words Publication
APP-11, NATO Message Catalogue
ATP-3.3.5.1, Joint Airspace Control Tactics, Techniques and Procedures
ATP 3.3.3.1, Air-Maritime Coordination Procedures
Bi-SC Directive 80-80, (Second Edition), 20 September 1999

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