翻译内容：4.7.1.2.2-4.7.1.5

# 4.7.3 Airbase Ruleset

4.7.3 航空基地规则集

## 4.7.3.1 Airbase Overview

4.7.3.1 空军基地概述

The airbase model provides combat-ready flights of aircraft in response to direct scramble requests, CAP fill/refill requests, ground-support flights of aircraft to fly to target locations, and scripted takeoffs of flights at a maximum rate that can vary with time. Airbase modeling consists of an airfield, flights of aircraft, and a commander. The functions of an airfield are modeled, rather than its facilities. Air crews are considered to be part of the aircraft. The functionality of the Sector Operations Center has been distributed between the functionality of the airfield and those commanders requiring support: either a Flexible Commander or Ground Attack Commander ruleset. The Flexible Commander ruleset directly requests aircraft from a subordinated airbase and handles the response for that request. A Flexible Commander must command an airbase to request fighter aircraft from that airbase. The Ground Attack Commander can request aircraft from any airbase listed on its airbase list and to which it has a communications link, and this link can be direct or can include relays using communications routing. A Flexible Commander that can evaluate ground targets may request ground attack aircraft from any airbase listed on its airbase list and to which it has a communications link.

For CAP fill/refill requests, the airbase scrambles aircraft from alert to the CAP identified by the commander. For direct scramble requests, the airbase scrambles fighters on alert to an airborne target’s location or to a target intercept point. Direct scramble requests can be filled using fighters on alert which are still in the airbase queue or fighters which are already in the takeoff queue for CAP fill/refill requests. For scramble requests to ground target locations, the airbase sends flights of ground-attack aircraft to a position requested by a commander. A ground-attack scramble request may be filled by flights of aircraft with the AGAttacker ruleset or with the Fighter ruleset if the evaluate ground targets option has been selected and ground-capable weapons have been deployed on the system. Neither the airbase nor the ground-attack aircraft are required to be commanded by the requesting platform. Scripted aircraft flights are not eligible to fill a request for takeoff by the airbase commander.

对于CAP补给请求，空军基地将战机从警戒状态扰动到指挥官确定的CAP。对于直接争夺请求，空军基地将处于警戒状态的战斗机争夺到空中目标的位置或目标拦截点。直接争夺请求可以使用仍在空军基地队列中的待命战斗机或已经在起飞队列中的战斗机来填补CAP的填补请求。对于地面目标位置的争夺请求，空军基地将对地攻击飞机的飞行送到指挥官请求的位置。如果选择了评估地面目标选项，并且系统上已经部署了可对地攻击的武器，那么对地攻击争夺请求可以由使用AGAttacker规则集或使用Fighter规则集的飞机飞行来填补。空中基地和地面攻击飞机都不需要由请求平台指挥。脚本飞机飞行没有资格填写空军基地指挥官的起飞请求。

Unlike other platforms, airbases are not completely destroyed by conventional weapons. Ordnances impacting on an airbase increase the amount of delay between aircraft flight takeoffs by a specified percentage, and possibly destroy aircraft flights on the airbase. Aircraft flights scheduled for takeoff are destroyed first. If the takeoff queue is empty, then the airbase scramble queues are searched to find the aircraft with the highest alert level. This aircraft is destroyed first. Airbase repairs are modeled by decreasing the takeoff delay, after a specified amount of time, to a minimum of the initial takeoff delay. In the case of a nuclear engagement, the airbase and all the aircraft at the base may be destroyed.

与其他平台不同，空军基地不会被常规武器完全摧毁。撞击空军基地的弹药会使飞机飞行起飞之间的延迟时间按一定比例增加，并可能摧毁空军基地上的飞机飞行。计划起飞的飞机航班首先被摧毁。如果起飞队列是空的，则搜索空军基地争夺队列，寻找警戒等级最高的飞机。这架飞机首先被摧毁。空军基地维修的模式是，在规定的时间后，将起飞延迟降低到初始起飞延迟的最小值。在核交战的情况下，空军基地和基地内的所有飞机都可能被摧毁。

## 4.7.3.2 Airbase Operations

4.7.3.2 空军基地业务

The functionality of the airbase is primarily modeled through the use of multiple queues, representing status of aircraft on alert and planned operations.

空军基地的功能主要是通过使用多个队列来建模的，代表了处于警戒状态的飞机和计划中的作业状态。

### 4.7.3.2.1 Airbase Queue Processing

4.7.3.2.1 航空基地队列处理

Figure 4.7.3-1 illustrates the four distinctive alert queues and scripted takeoff queue that exist on each airbase. A non-scripted aircraft or a flight of non-scripted aircraft deployed at an airbase is placed into one of the four alert queues. The alert queues at the airbase are separated for defensive counter air, ground attack, TBM, and support operations. The criteria for placing aircraft in the alert queues are determined by the ruleset of the aircraft. All aircraft that use the AGAttacker ruleset will be placed into the Ground Attack Operations alert queue.

图4.7.3-1展示了每个空军基地存在的四种不同的警戒队列和脚本起飞队列。部署在空军基地的非脚本飞机或非脚本飞机的飞行会被放入四个警戒队列中的一个。空军基地的警戒队列是分开的，分别用于防御性反空、对地攻击、TBM和支援行动。将飞机放入警戒队列的标准由飞机的规则集决定。所有使用AGAttacker规则集的飞机将被放入地面攻击作战警戒队列。

For all aircraft that use the Fighter ruleset:

适用于所有使用战斗机规则集的飞机。

• If the aircraft has TBM-capable weapons, then the aircraft is placed into the TBM alert queue

- 如果飞机上有可使用TBM的武器，那么该飞机将被列入TBM警报队列。

• If the ground-capable ruleset option is not active, then the aircraft is placed into the Defensive Counter-Air alert queue

- 如果地面能力规则集选项未激活，则飞机将被放入防御性反空警报队列。

• If the ground-capable ruleset option is active, the aircraft has air-capable weapons, and does not have ground-capable weapons then the aircraft is placed into the Defensive Counter-Air alert queue

- 如果地面能力规则集选项激活，飞机有空中能力的武器，没有地面能力的武器，那么飞机就会被放入防卫反空警戒队列。

• If the ground-capable ruleset option is active and the aircraft has ground-capable weapons, then the aircraft is placed into the Ground Attack Operations alert queue

- 如果地面能力规则选项处于激活状态，且飞机拥有地面能力武器，那么飞机将被放入地面攻击行动警报队列中

• If the ground-capable ruleset option is active and the aircraft has no weapons, the aircraft is placed into the Ground Attack Operations alert queue

- 如果地面能力规则集选项处于激活状态，且飞机没有武器，则飞机将被放入地面攻击行动警报队列。

All aircraft that do not use the Fighter or AGAttacker rulesets are placed into the Support queue. Platforms on alert in the dynamic Support Queue can be scrambled only by using the PIC Platform Relocation Command described in Section 9.3.2

所有不使用 "战斗机 "或 "AGAttacker "规则集的飞机都会被放入 "支援队列"。动态支援队列中处于警戒状态的平台只能通过使用第9.3.2节中描述的PIC平台重新定位命令进行扰动。

The scripted aircraft wait in the airbase’s scripted queue until its scripted time to takeoff has been reached. The scripted aircraft is then placed in the takeoff queue in the order of takeoff prioritization for the airbase. An aircraft becomes scripted when the Scripted Takeoff button on the Edit Platform window is selected. The scripted time for the aircraft is set by the value placed for the On-Time for the first waypoint given to the aircraft in the Edit Platform window.

脚本飞机在空军基地的脚本队列中等待，直到达到其脚本的起飞时间。脚本飞机会按照空军基地的起飞优先级顺序被放入起飞队列中。当选择 "编辑平台 "窗口中的 "脚本起飞 "按钮时，飞机就成为脚本飞机。飞机的脚本时间由编辑平台窗口中给飞机的第一个航点的On-Time的值来设置。

The user interface provides a display of the aircraft located at the airbase, their alert levels, and their missions as determined by their rulesets and weapons loadout. The airbase information display shows a list for each of the separate alert queues: 1) defensive counter air, 2) ground-attack operations, 3) TBM operations, and 4) Support Queue The scripted queue is treated as single queue, but to display the information, it is broken into three sections: 1) scripted defensive counter air, 2) scripted ground-attack operations, 3) scripted TBM operations, and 4) scripted Support operations..

用户界面提供了位于空军基地的飞机的显示，它们的警戒等级，以及由它们的规则集和武器装备决定的任务。空军基地信息显示显示了每个独立警戒队列的列表：1）防御反空，2）对地攻击行动，3）TBM行动，4）支援队列 脚本队列被视为单一队列，但为了显示信息，它被分成三个部分。1）防守反空脚本、2）对地攻击脚本、3）TBM脚本、4）支援脚本。

### 4.7.3.2.2 Airbase Alert Levels

4.7.3.2.2 空军基地警戒级别

The alert-level structure for the airbase is determined by the scramble times of the non-scripted aircraft flight leaders deployed at the airbase. These scramble times are specified as a mean and sigma value, to provide for randomization of the flight’s time-to-go. Because the alert levels are created at the aircraft level, but multiple aircraft may be at the same alert level on base, all aircraft deployed at the same base in the same queue which have the same scramble time mean values are required to use the same distribution statistics. During initialization, the scramble time distribution statistics for the first platform in a particular alert level will be used for all platforms placed into the alert level. As platforms are evaluated to determine which alert level they should go into, the platform’s scramble time mean is truncated to an integer value and compared to all existing alert level truncated integer mean values. If the platform’s mean value is equal to an existing mean value, the platform is placed into the already established alert level having that mean value. The distribution values are not truncated when stored for each slot of the alert level. Rather, the truncation to an integer value is only done for the mean comparison to avoid constructing multiple alert levels within less than one second of each other. For platforms having distribution statistics inconsistent with the alert level they are place into, error messages are written to the ScenarioErrors.txt file to indicate the names of the platform having inconsistent statistics and the platform whose statistics were used. For those platforms having scramble time distributions inconsistent with their specified alert level, actions are logged to playback to provide the actual distribution used by the platform during the simulation run. This allows playback to construct an accurate representation of alert levels and alert level slots.

Time-to-go is defined as the minimum time from the current time for aircraft to leave the airbase. The time-to-go for the aircraft is originally set to the mean value of its scramble time. The time-to-go of all aircraft is decremented to account for time passage. The time is decremented until an aircraft’s time-to-go reaches the mean of its current alert level and it will not be decremented further until a command is sent to the airbase requesting an aircraft from the queue. Once a command is received, the aircraft at the highest alert level—i.e., the shortest time-to-go—is then moved into the takeoff queue and its alert level is set to zero. Its actual time-to-go is set by making a random draw. The mean value used is the aircraft’s current time-to-go and the sigma value used is that specified for its alert level when the command was received. Even though the aircraft is in the takeoff queue, the aircraft will not takeoff until its time-to-go has reached zero. The other aircraft in the queue will be moved up an alert level and their time-to-go may begin decrementing accordingly. If more than one flight is needed to fulfill the scramble request, then the additional flights are placed into the takeoff queue. Their actual time-to-go will also be calculated by a random draw using their current time-to-go and their alert level sigma. These additional flights must wait for their time-to-go limit to expire before they can take off. If randomness has been eliminated, the mean value for the alert level will always be used as the aircraft’s time-to-go.

Figure 4.7.3-2(a) shows the initial alert structure for one of the alert queues at an airbase. The chart shows the alert level in seconds, the flight identification letter, and the time-to-go for each flight in the queue. As shown, flights A, B, and C are at the same alert level of 300 sec, flight D is at the 120-sec alert level, flight E is at the 60-sec alert level, while flight F is at the 0 alert level. As previously stated, the time-to-go for the aircraft in the chart is not decremented when it has reached its alert level time until a command is sent to the airbase requesting an aircraft from a particular queue. Therefore, this initial alert structure remains at this setup, no matter how much time has passed, until a request for aircraft from the queue is received from a commander.

图4.7.3-2(a)显示了一个空军基地的一个警报队列的初始警报结构。图中显示了队列中每个航班的警戒级别（以秒为单位）、航班标识字母和进入时间。如图所示，航班A、B、C的警戒级别相同，为300秒，航班D的警戒级别为120秒，航班E的警戒级别为60秒，而航班F的警戒级别为0。如前所述，当图中的飞机达到警戒级别时间后，直到向空军基地发出指令，要求从某一队列中起飞的飞机时，图中飞机的起飞时间才会递减。因此，这个初始警戒结构无论过了多少时间，都会保持在这个设置上，直到收到指挥官对队列中飞机的请求。

Figure 4.7.3-2(b) shows the alert queue after two requests for aircraft from this particular queue have been received from a commander. Flight F moves into the takeoff queue at his user-defined priority level and waits for his takeoff interval. Flight E moves into the takeoff at his user-defined priority level to wait for his time-to-go time of 60 sec to expire and his takeoff interval. The aircraft remaining in the queue at the airbase are moved into the higher priority alert queues to replace the aircraft requested by the commander.

图4.7.3-2(b)显示的是在收到指挥官对该特定队列中的飞机提出的两个请求后的警报队列。航班F以其用户定义的优先级进入起飞队列，等待其起飞间隔。航班E以其用户定义的优先级进入起飞，等待他的60秒起飞时间到期和起飞间隔。留在空军基地队列中的飞机会被移入更高优先级的警戒队列中，替换指挥员请求的飞机。

Figure 4.7.3-2(c) shows the alert queue after 60 sec have passed. Flight E’s time-to-go has expired and it is now free to leave the airbase at its takeoff interval. In the queue, flight A’s time-to-go will not be decremented for the passage of time because the time-to-go of an aircraft in an alert queue cannot fall below its alert level. However, the time-to-go times for flights B, C, and D are decremented to account for the 60-sec time passage, since their time-to-go level has not reached the queue’s alert level. If any aircraft return to the airbase, they are refueled, rearmed, and placed back into the proper airbase queue in one of the available alert level slots.

图4.7.3-2(c)为60秒后的警报队列。图4.7.3-2(c)为60秒后的警戒队列，E航班的起飞时间已过，现在可以在起飞时间间隔内自由离开空军基地。在队列中，A航班的起飞时间不会因为时间的流逝而减少，因为在警戒队列中飞机的起飞时间不能低于其警戒等级。但是，B、C、D航班的去程时间会因60秒的时间流逝而递减，因为它们的去程时间水平还没有达到队列的警戒水平。如果有飞机返回空军基地，它们将被重新加油，重新武装，并被放回空军基地的适当队列中的一个可用的警戒级别的位置。

### 4.7.3.2.3 Aircraft Cycling

4.7.3.2.3 飞机循环飞行

When an aircraft returns to an airbase, all engaged targets are cleared. If the aircraft is a fighter, then any engagements started but not completed during RTB are reported and cleared. Next, a delay for turnaround time is applied. This turnaround allows the aircraft to be rearmed and refueled. If the weapon is a laser, the laser fuel is set to its maximum value. The turnaround time is specified as a standard distribution model in order to randomize the time needed to perform these actions. Turn delays may be defined on the airbase ruleset for individual aircraft systems or classes for each partial damage level associated with the scenario in order to specify the turnaround time needed for that type of aircraft based on its damage level at the time it lands. A default turn delay on the airbase platform will be used if no system specific turn delays have been defined for the ruleset. When an aircraft lands at base, a random draw is made from either the default turn delay or from the distribution model defined for the aircraft system at its current damage level. If a turn delay for its current damage level has not been defined, the delay for the next lowest damage level will be used. If randomness has been eliminated, the constant mean value is used as the turnaround time. The actual turn delay is logged for post processing purposes. If turn delays have been defined for the ruleset, but the landing aircraft’s system or class is not in the table, the airbase is not capable of returning that aircraft to its scramble queues. The aircraft is set to inactive and will no longer be evaluated for assignment by its commander.

If the aircraft can be refitted by this airbase, the aircraft is then assigned to the highest available slot in the scramble queue according to its randomized turnaround time, An aircraft that has the Fighter or AGAttacker ruleset will be placed in the appropriate scramble queue base on the aircraft’s weapons loadout. An aircraft that has a ruleset other than Fighter or AGAttacker will be placed in the Support scramble queue. The aircraft’s initial time-to-go is set to the randomized turnaround time plus the mean setup time from its Tactical Operations phase. The setup time models a minimum time needed to complete FDSC inventory repairs. FDSC/Inventory modeling is described in MM Section 4.15.3. All aircraft in the selected scramble queue whose time to go is currently higher than its alert level are reordered based on the amount of time remaining until it reaches its alert level. This allows aircraft which return to base in a less damaged state, or whose system or class type allows quicker turn around, to move ahead of aircraft already in the queue that require longer repair times. If an open alert level slot is not available, then the aircraft is placed at the end of the scramble queue with an alert time of the highest alert level. The aircraft’s final mean time-to-go is then set by taking the mean time of the aircraft’s selected alert level and adding in its initial turnaround time.

### 4.7.3.2.4 Scramble Request Limit Processing

4.7.3.2.4 争夺请求限制处理方法

The user is able to specify a maximum number of scramble requests that can be filled during the execution of the scenario. The maximum number of scramble requests limits the number of scramble requests allowed for each of the scramble request categories. These limits represent the number of aircraft available to the airbase and the number of missions each aircraft is allowed to perform. The limits are specifiable as a function of TBM, defensive air, and ground-attack scramble requests. The value for the number of scramble requests is an integer with a value between 0 and 9999. The default value is 100 scramble requests for each of the scramble queues. Once this scramble request limit has been reached, the airbase CANTCO’s any request for aircraft from the corresponding alert queue

用户能够指定在场景执行过程中可以填写的最大扰动请求数。争夺请求的最大数量限制了每个争夺请求类别允许的争夺请求的数量，这些限制代表了空军基地可用的飞机数量和每架飞机允许执行的任务数量。这些限制代表了空军基地可用的飞机数量和每架飞机允许执行的任务数量。这些限制可以指定为TBM、防卫性空中和地面攻击争夺请求的函数。扰频请求数的值是一个整数，其值在0到9999之间。默认值是每个扰动队列的扰动请求数为100。一旦达到这个扰频请求上限，空军基地就会从相应的警戒队列中CANTCO任何飞机的请求。

### 4.7.3.2.5 Airbase Takeoff Queue

4.7.3.2.5 空军基地起飞队列

The takeoff queue controls the launch intervals of the aircraft once they meet the requirements for moving out of their particular alert queue. All flights that leave the airbase move through the takeoff queue. The aircraft must stay in the takeoff queue until their time-to-go is reached and the next available takeoff slot becomes available.

起飞队列控制着飞机的发射间隔，一旦飞机满足了移出其特定警戒队列的要求。所有离开空军基地的航班都要经过起飞队列。飞机必须在起飞队列中停留，直到达到其起飞时间，并且下一个可用的起飞空档出现。

### 4.7.3.2.6 Takeoff Prioritization

4.7.3.2.6 起飞优先权的确定

The user selects the prioritization scheme for the takeoff queue. The default prioritization from highest to lowest is TBM scramble requests, defensive air scramble requests, ground-attack operations scramble requests, and scripted takeoffs. Two or more of the scramble queues can have the same prioritization level, thus not allowing one scramble queue to have priority over any other. The priority for each of the queues can be chosen from high to low. Aircraft in the Support scramble queue will always use the takeoff prioritization that is defined for Scripted Takeoffs.

用户选择起飞队列的优先级方案，默认的优先级从高到低是TBM争夺请求、防御性空中争夺请求、地面攻击行动争夺请求和脚本起飞。默认的优先级从高到低分别是TBM扰频请求、防御性空中扰频请求、对地攻击行动扰频请求和脚本起飞。两个或多个争夺队列可以具有相同的优先级，从而不允许一个争夺队列优先于任何其他队列。每个队列的优先级可以从高到低选择。支持争夺队列中的飞机将始终使用为脚本起飞定义的起飞优先级。

### 4.7.3.2.7 Airbase Takeoff Interval

4.7.3.2.7 空军基地起飞时间间隔

The takeoff interval for an airbase is the amount of time from when one flight of aircraft can leave the airbase until the next flight is allowed to leave the airbase. The takeoff interval is specified as a mean and sigma in order to randomize the time between scramble actions. As each flight takes off from base, a random draw is made to determine the next flight’s actual takeoff time. If randomness has been eliminated, the constant mean value is used as the takeoff interval. The takeoff interval is increased when damage occurs to an airbase and is decreased when a certain amount of time has passed since the damage to the airbase occurred. This is explained further in Section 4.7.3.3.1.2, Airbase Damage and Delay Calculation.

一个空军基地的起飞间隔是指从一个航班可以离开空军基地到下一个航班被允许离开空军基地的时间。为了使争夺行动之间的时间随机化，起飞间隔被指定为平均值和西格玛。当每个航班从基地起飞时，随机抽签确定下一个航班的实际起飞时间。如果随机性已被消除，则用恒定的平均值作为起飞间隔。当空军基地发生损坏时，起飞间隔时间会增加，当空军基地损坏发生后经过一定时间后，起飞间隔时间会减少。这一点在4.7.3.3.1.2节 "空军基地损伤和延误计算 "中进一步说明。

### 4.7.3.2.8 Scripted Takeoffs

4.7.3.2.8 脚本起飞

Scripted takeoffs leave the scripted airbase queue at the aircraft’s scripted takeoff time and enter the takeoff queue. The scripted aircraft are placed in the takeoff queue according to the priority level of the scripted aircraft at this airbase. Once the scripted aircraft have entered the airbase takeoff queue, these aircraft are not treated any differently than any other aircraft in the takeoff queue at the time. An aircraft becomes scripted when the scripted takeoff button on the edit platform window is selected. The scripted time for the aircraft is the on-time for the first waypoint given to the aircraft in the window.

脚本起飞在飞机的脚本起飞时间离开脚本空军基地队列，进入起飞队列。脚本飞机根据脚本飞机在该空军基地的优先级进入起飞队列。一旦脚本飞机进入空军基地起飞队列，这些飞机的待遇与当时起飞队列中的其他飞机没有任何区别。当编辑平台窗口的脚本起飞按钮被选中时，飞机就成为脚本飞机。飞机的脚本化时间是窗口中给飞机的第一个航点的准点时间。

## 4.7.3.3 Airbase Battle Management Phases

4.7.3.3 空军基地战斗管理阶段

The Airbase ruleset has two battle management phases: Target Select and User Rules.

航空基地规则集有两个战斗管理阶段。目标选择和用户规则。

### 4.7.3.3.1 Airbase Target Select Phase

4.7.3.3.1 空军基地目标选择阶段

The majority of the airbase performance parameters are site-specific and are on the Edit/Deploy Platform window. The airbase damage management is responsible for assessing the extent of the damage, enabling the airbase if damage is not critical, and repairing the airbase if damage is critical. The airbase’s target select phase is used to launch the aircraft flights at their scheduled takeoff times. The phase execution timing is independent of the start and repeat times on the phase window. Turn delays based on the aircraft’s system or class type may be defined on the target select phase to model the different times needed to refuel and reload various types of aircraft based on their damage level at the time they land. If system-specific timings are defined, the airbase is limited to being able to turn around only those systems and classes of aircraft on its list.

空军基地的性能参数大部分是针对场地的，在EditDeploy Platform窗口中。空军基地损伤管理负责评估损伤程度，如果损伤不严重则启用空军基地，如果损伤严重则修复空军基地。空军基地的目标选择阶段用于在预定的起飞时间启动飞机飞行。阶段执行时间与阶段窗口上的开始和重复时间无关。可以在目标选择阶段上定义基于飞机系统或等级类型的转弯延时，以模拟各种类型的飞机在降落时根据其损伤程度所需的不同时间进行加油和重装。如果定义了特定系统的时间，则空军基地只能对其清单上的那些系统和飞机类别进行转场。

#### 4.7.3.3.1.1Launching Flights of Aircraft

4.7.3.3.1.1飞机的发射飞行

The airbase uses the Target Select phase to launch flights of aircraft from the airbase. Three conditions are tested before airbase operations can begin. If there are no aircraft flights scheduled for takeoff, the phase is exited without rescheduling. If the airbase is down from an ordnance hit or it is too early for any flights to take off, the phase is rescheduled after a delay for the time the airbase will be able to launch the next flight.

空军基地利用目标选择阶段，从空军基地发射飞机飞行。在空军基地作业开始前，要测试三个条件。如果没有计划起飞的飞机航班，则退出该阶段，不重新安排时间。如果空军基地被军械击中而瘫痪，或对任何航班来说起飞时间太早，则在延迟空军基地能够发射下一个航班的时间后，重新安排该阶段。

If all tests are passed, the airbase updates the scramble time for all aircraft flights not scheduled to take off, updates the takeoff time for aircraft that have been scheduled to take off, and launches one flight that is scheduled for the current takeoff time. When an aircraft flight is launched from the airbase, the aircraft flight is either flown to its commanded CAP position, to its commanded target, or through its scripted waypoints. When a fighter flight is direct scrambled to a fuzzy vector position, the aircraft is vectored to the last position received from the commander in either the assignment or a vector update. Any flight leaving the airbase is immediately available for commanded or self-assignments, depending on the appropriate action for the aircraft type. The airbase’s phase is rescheduled if any flights remain in the queue for takeoff.

如果所有的测试都通过了，空军基地就会更新所有未安排起飞的飞机航班的争夺时间，更新已安排起飞的飞机的起飞时间，并发射一个安排在当前起飞时间的航班。当飞机航班从空军基地起飞时，飞机航班要么飞往其指挥的CAP位置，要么飞往其指挥的目标，要么通过其脚本航点。当战斗机飞行被直接扰动到模糊的矢量位置时，飞机飞行会被矢量到指挥员在分配或矢量更新中收到的最后位置。任何离开空军基地的飞行都可以立即进行指令分配或自分配，这取决于飞机类型的适当行动。如果有任何航班仍在起飞队列中，则重新安排空军基地的阶段。

A fighter waiting in the takeoff queue as a result of a direct scramble may receive a stop message before leaving the base. In this case, the fighter is recycled as described in Subsection 4.7.3.2.3. However, the turnaround time is not applied to its new time to go, as the fighter never actually left the base.

因直接争夺而在起飞队列中等待的战斗机，在离开基地前可能会收到停止信息。在这种情况下，该战斗机按4.7.3.2.3小节所述进行回收。但是，周转时间不适用其新的起飞时间，因为该战斗机实际上从未离开过基地。

#### 4.7.3.3.1.2Airbase Damage and Delay Calculation

4.7.3.3.1.2 航空基地损失和延迟计算

The intercept phases (i.e., kill assessment phases) for hostile air-to-surface and surface-to-surface platforms use the routines that assess damage to an airbase. For conventional weapons, these intercept phases first make a random draw from a uniform distribution and compare this with the probability of kill of the impacting weapon. This draw is used to determine if the airbase has been hit. If the airbase is hit, the damage assessment calculations are performed. If randomness is eliminated, the impacting weapon will always hit the airbase.

敌对空对地和地对地平台的拦截阶段(即杀伤力评估阶段)使用评估空军基地所受损害的常规程序。对于常规武器，这些拦截阶段首先从均匀分布中随机抽签，并将其与撞击武器的杀伤概率进行比较。这个抽签是用来确定空军基地是否被击中。如果空军基地被击中，则进行损伤评估计算。如果消除随机性，撞击武器将始终击中空军基地。

The first time the airbase is hit, the airbase is shut down for the length of time specified by the user for the shock delay. This shutdown models the confusion caused by the initial hit on the airbase. The shock delay is specified as a mean and sigma in order to randomize the time of confusion. When the first weapon impacts at the airbase, a random draw is made to determine the actual shock delay. If randomness has been eliminated, the constant mean value is used as the shock delay.

空军基地第一次被击中时，空军基地会在用户指定的冲击延迟时间内关闭。这种关闭模式是模拟空军基地首次被击中所造成的混乱。冲击延迟被指定为平均值和西格玛，以便随机化混乱时间。当第一枚武器撞击空军基地时，随机抽签来确定实际的冲击延迟。如果随机性已被消除，则使用恒定的平均值作为冲击延迟。

The damage-assessment function evaluates whether the impacting weapon caused critical damage. Critical damage is defined as damage to the C2 area, the turnaround facility area, or the runway/taxiway/ramp area of the airbase. Each of these areas is modeled as a fraction of the total area of the airbase. The probability of damaging one of these areas is the sum of the individual fractional areas: i.e., the percentage of the total airbase that contains critical assets. A random draw from a uniform distribution is compared with this total area to determine if critical damage has occurred. If no critical damage has occurred, no damage is assessed to the airbase. If randomness is eliminated, the airbase will not incur any critical damage. If critical damage has occurred, the airbase’s efficiency in scrambling aircraft is affected, modeled as an increase in the airbase’s takeoff interval (TOI). The user-specified takeoff interval increase is the fraction of the current takeoff delay time that is added to the takeoff interval time after a weapon has impacted a critical area of the airbase. The TOI increase is a fractional number greater than or equal to 0.0. The takeoff interval increase is applied to both the mean and sigma values of the current takeoff interval as:

The repairs to the airbase are completed for each bomb attack after the user-defined recovery time has passed. The recovery time is specified as a mean and sigma in order to randomize the time needed to recover from the bomb attack. As each weapon impacts, a random draw is made to determine the actual recovery time, and the airbase repair is scheduled for that time. Recovery time will be limited to values greater than or equal to 0. If randomness has been eliminated, the constant mean value is used as the recovery time. At the time repairs are completed, the TOI mean and sigma values are decreased by the amount represented by a single percentage increase in the TOI. This is limited to guarantee that the TOI is never less than the specified minimum TOI.

每次炸弹袭击后，在用户定义的恢复时间过后，完成对空军基地的修理。恢复时间被指定为平均值和西格玛，以便随机确定从炸弹攻击中恢复所需的时间。当每次武器撞击时，随机抽签确定实际恢复时间，并按该时间安排空军基地维修。恢复时间将被限制在大于或等于0的值，如果随机性已被消除，则使用恒定的平均值作为恢复时间。在维修完成时，TOI均值和西格玛值将按TOI的单个百分比增加所代表的量减少。这是有限的，以保证TOI永远不会小于指定的最小TOI。

Given that critical damage has been achieved, a determination of whether aircraft were destroyed is made. A random draw from a uniform distribution is compared with the probability of aircraft destruction. If aircraft were destroyed, the flight at the top of the queue for takeoff is destroyed. If randomness is eliminated, no aircraft will be destroyed.

既然已经达到临界损害，就要确定飞机是否被摧毁。从均匀分布中随机抽出一架飞机，与飞机被毁的概率进行比较。如果飞机被摧毁，则排在起飞队列最前面的航班被摧毁。如果随机性被消除，则没有飞机被摧毁。

Figure 4.7.3-3 shows how an airbase recovers from damage and how this recovery time affects the airbase’s takeoff interval. The shock delay time for Figure 4.7.3-3 is 120 sec, the takeoff interval increase is 0.5, and the damage recovery time is 60 sec.

图4.7.3-3显示了一个空军基地如何从损伤中恢复，以及这个恢复时间对空军基地起飞间隔的影响。图4.7.3-3的冲击延迟时间为120秒，起飞间隔增加0.5，损伤恢复时间为60秒。

In the example, a bomb impacts the airbase at 30 sec, causing a shock delay of 120 sec to the airbase. The airbase will be operational again at the simulation time of 150 sec. The takeoff interval for the airbase increases from 60 sec to 90 sec. This is found using the formula for calculating an increase in the TOI from an impacting bomb. At the simulation time of 50 sec, a second bomb impacts the airbase. This second bomb does not cause a shock delay to occur but does increase the takeoff interval time for the airbase from 90 sec to 135 sec. The damage recovery time for the airbase is 60 sec, so at the simulation time of 90 sec, the airbase has recovered from the first bomb attack. The takeoff interval decreases from a 135 sec back to 90 sec. At the simulation time of 100 sec, a third bomb impacts the base. This impact causes the takeoff interval to increase back to 135 sec; again, this number is calculated using the formula given for increasing the TOI due to a bomb impact. At simulation time 110 sec, the base recovers from the second bomb attack and the takeoff interval returns to 90 sec. At simulation time 150 sec, the aircraft has recovered from the shock of the first bomb impacting the airbase. At simulation time 160 sec, the base has recovered from the third bomb’s impact and the takeoff interval has returned to its original value of 60 sec. After the initial shock delay from the first bomb attack has expired, an aircraft in the takeoff queue will leave the airbase after the takeoff interval has expired. In Figure 4.7.3-3, the shock delay time for the first bomb expires at 150 sec. The first aircraft will leave the airbase at 150 sec plus the takeoff interval time of 90 sec, or at simulation time 240 sec.

For nuclear engagements, PDCALC is used to assess damage to the airbase. Under this methodology, the entire airbase is killed, including all of the aircraft at the airbase.

对于核交战，采用PDCALC来评估对空军基地的损害。根据这种方法，整个空军基地都被炸毁，包括空军基地的所有飞机。

### 4.7.3.3.2 Airbase User Rules Phase

4.7.3.3.2 空军基地用户规则阶段：

The airbase can execute the User Rules phase in response to events in the scenario, including the death of its commander, or the loss or regaining of its commander through communications checks. It can respond by choosing an alternate commander. The use of User Rules is described in Section 4.12.

空军基地可以针对场景中的事件执行用户规则阶段，包括指挥官的死亡，或通过通信检查失去或重新获得指挥官。它可以通过选择一个替代指挥官来应对。用户规则的使用在第4.12节介绍。

## 4.7.3.4   Airbase Received Message Processing

4.7.3.4 空军基地收到的信息处理

The airbase receives two different types of commanded assignments: the multiple assignment, which is used for direct scramble requests, and the general assignment, which is used for all other scramble requests. The airbase processes a stop command from its commander for the direct scramble request. The airbase can also process communications checks.

空军基地收到两种不同类型的指令分配：多重分配，用于直接争夺请求；一般分配，用于所有其他争夺请求。空军基地处理来自其指挥官的停止指令，用于直接扰频请求。空军基地还可以处理通信检查。

### 4.7.3.4.1  Airbase Commanded Assignment

4.7.3.4.1 空军基地的指挥分配

There are multiple sources of scramble requests. If the commander of the airbase is using a Flexible Commander ruleset, aircraft will be requested to fill/refill CAPs. This can be in response to perceived aircraft or TBM threat. A commander using the Ground Attacker Commander or ground-capable Flexible Commander ruleset can also issue scramble requests to ground target locations. These ground attack requests can come from any commander which is on a network with the airbase and that also has the airbase listed on its airbase list.

争夺请求的来源有很多，如果空军基地的指挥官使用的是灵活指挥官规则，那么飞机会被要求填补CAP。如果空军基地指挥官使用的是灵活指挥官规则，则会要求飞机填补补充CAP。这可能是为了应对感知到的飞机或TBM威胁。使用地面攻击指挥官或地面能力灵活指挥官规则集的指挥官也可以向地面目标位置发出争夺请求。这些地面攻击请求可以来自与空军基地联网的任何指挥官，并且该空军基地也被列入其空军基地名单。

The airbase processes the assignment by updating all takeoff times of aircraft at the base. If the airbase is not already launching a flight, it looks for a flight to launch. If no aircraft are available at the airbase, a CANTCO is transmitted to the commander. Also, if the maximum number of scramble requests for the aircraft in the requested queue has been reached, a CANTCO is transmitted to the commander. The remaining aircraft have their takeoff times updated. An acknowledgment message is sent to the commander if a flight is to be launched. If the airbase does not already have flights in the takeoff queue, the target select phase for the airbase is scheduled.

空军基地通过更新基地内所有飞机的起飞时间来处理任务。如果空军基地还没有发射航班，则寻找要发射的航班。如果空军基地没有飞机可用，则向司令员传送CANTCO。另外，如果请求队列中的飞机的争夺请求数达到了最大数量，则向指挥官发送CANTCO。其余飞机的起飞时间得到更新。如果要启动飞行，则向司令员发送确认信息。如果空军基地的起飞队列中还没有航班，则安排该空军基地的目标选择阶段。

The acknowledgment message is sent to the commander with the status of the assignment. If the airbase is able to completely fill the request, a WILCO is returned to the requester. If the airbase is able to partially fill the request, a WILCO is returned to the requester with a parameter indicating the number of aircraft that were not replaced. An airbase may be able to only partially fill a request for aircraft because either the alert queue from which the aircraft were requested is empty or the maximum number of scramble requests for the alert queue has been reached. When a message is sent to an airbase requesting a flight of aircraft, the airbase begins processing the flight from the aircraft’s alert queue to the takeoff queue.

向指挥官发送确认信息，说明任务的状况。 如果空军基地能够完全满足请求，则向请求者返回一个WILCO。如果空军基地能够部分满足请求，则返回一个WILCO给请求者，其中有一个参数表示没有被替换的飞机数量。一个空军基地可能只能部分满足飞机的请求，因为要么是请求飞机的警戒队列是空的，要么是已经达到了警戒队列的最大争夺请求数。当向空军基地发送请求飞机飞行的消息时，空军基地开始处理从飞机的警戒队列到起飞队列的飞行。

### 4.7.3.4.2  Airbase Multiple Assignment

4.7.3.4.2 空军基地的多次派任

If a Flexible Commander has direct scrambling capability and an aircraft at the airbase is selected to engage the threat, a multiple assignment command is sent to the airbase. The multiple assignment message is used to differentiate between the other types of scramble requests and the direct scramble request. A direct scramble request is processed using the same methodology as described in the previous section, with one major exception. In the direct scramble case, the airbase will first attempt to assign aircraft from the takeoff queue. If there are aircraft in the takeoff queue with weapons capable of dealing with the threat, they are vectored to the threat. If there are no eligible aircraft in the take-off queue, the processing is the same as described previously, with aircraft moved from the appropriate airbase alert queue to the takeoff queue. Once a flight has been selected for the assignment, the airbase forwards the multiple assignment message to the assigned flight leader.

如果灵活指挥官具有直接扰频能力，而空军基地的一架飞机被选中与威胁交战，则会向空军基地发出多次分配命令。多重分配信息用于区分其他类型的扰动请求和直接扰动请求。直接扰频请求的处理方法与上一节所述相同，但有一个主要的例外。在直接争夺的情况下，空军基地将首先尝试从起飞队列中分配飞机。如果在起飞队列中有能够对付威胁的武器的飞机，它们就会被定向到威胁上。如果起飞队列中没有符合条件的飞机，则处理方法与前面所述相同，飞机从相应的空军基地警戒队列移到起飞队列中。一旦选择了一个航班进行分配，空军基地就会将多次分配信息转发给被分配的飞行负责人。

The airbase then sends a multiple assignment acknowledgement message to the Flexible Commander. The multiple assignment acknowledgement is used by the Commander to differentiate between the actions that have been performed by the airbase. If the airbase was able to fill the request, whether completely or partially, the acknowledgement is a WILCO. If the airbase was unable to scramble any aircraft, a CANTCO acknowledgement is sent. Upon receipt of the CANTCO, if only direct scrambled aircraft were assigned to the target, the Commander will no longer consider the target to be assigned, so that the target may be re-evaluated and reassigned in the next Target Select phase.

然后，空军基地向灵活指挥官发送一个多次分配确认信息。多重分配确认信息被指挥官用来区分空军基地已经执行的行动。如果空军基地能够完全或部分地满足请求，则该确认为WILCO。如果空军基地无法争夺任何飞机，则发送一个CANTCO确认。在收到CANTCO后，如果只给目标分配了直接扰动的飞机，指挥官将不再考虑分配该目标，以便在下一个目标选择阶段对该目标进行重新评估和分配。

### 4.7.3.4.3  Airbase Stop Command

4.7.3.4.3 空军基地停止指令

The airbase can also process a stop message from its Flexible Commander. When multiple aircraft report to the Commander that they are engaging on the same target, the Commander chooses an aircraft as the correct engager and sends a stop command to the other aircraft. If the aircraft is still at the base, the stop command will be sent to the airbase. The airbase then forwards it to the flight leader. If the stopped aircraft was originally assigned to a CAP fill/refill before the direct scramble assignment, then the aircraft is reset to its original assignment. If it was not, it is placed back into the appropriate airbase queue.

空军基地还可以处理其灵活指挥官发出的停止信息。当多架飞机向司令员报告它们正在对同一目标进行交战时，司令员选择一架飞机作为正确的交战者，并向其他飞机发送停止指令。如果飞机还在基地，则将停止命令发送给空军基地。然后，空军基地将其转发给飞行队长。如果被停止的飞机在直接争夺任务之前，原本被分配到CAP补位，那么该飞机将被重置到原来的任务。如果没有，则将其放回相应的空军基地队列中。

### 4.7.3.4.4  Airbase Communications Check

4.7.3.4.4 航空基地通信检查

The airbase ruleset can optionally verify communications with its commander. If the communication with the commander is lost, the airbase can execute its User Rules phase to select an alternate commander.

空军基地规则集可以选择验证与指挥官的通信。如果失去与指挥官的通信，空军基地可以执行其用户规则阶段来选择一个备用指挥官。

## 4.7.3.5   Airbase System Configuration

4.7.3.5 航空基地系统配置

The airbase ruleset should only be used on a ground platform. A communications device is required. Weapons and sensors are not used. The airbase cannot be a commander, but it can be commanded by a platform using the Flexible Commander ruleset. The airbase ruleset does not use targets or assets.

航空基地规则集只能在地面平台上使用。需要一个通讯装置。不使用武器和传感器。空军基地不能成为指挥官，但可以由平台使用灵活指挥官规则集来指挥。空军基地规则集不使用目标或资产。

## 4.7.3.6   Airbase Network Recommendations

4.7.3.6 对空军基地网络的建议

A duplex or other two-way communications net with the airbase’s commander is required. The message class type is command. If the vertical capability is specified for the link, the Flexible Commander will not load the network with SAM engagement information. This information is ignored by the airbase anyway.

需要与空军基地的指挥员建立双工网或其他双向通信网。信息类类型为命令。如果为链路指定了垂直能力，那么灵活指挥官将不会在网络中加载SAM交战信息。反正这种信息是被空军基地忽略的。

A command net should also be configured with all associated Ground Attacker Commanders and ground-capable Flexible Commanders. This network needs to support communications both to and from the commander platform.

指挥网还应该配置所有相关的地面攻击指挥官和地面能力的灵活指挥官。这个网络需要支持指挥平台与指挥平台之间的通信。

# 4.7.4     Corps Tactical Operations Center (CTOC)

4.7.4 军团战术行动中心(CTOC)

## 4.7.4.1   CTOC Overview

4.7.4.1 CTOC概述

The Corps Tactical Operations Center represents the highest modeled level of the surface-to-surface chain. It can optionally receive track messages from a source such as the Intelligence Collection and Analysis Center. The CTOC sends the Border Crossing Authority (BCA) and track messages to its subordinates in the surface-to-surface command chain.

兵团战术行动中心代表了地表到地表链的最高模型级别。它可以选择从情报收集和分析中心等来源接收跟踪信息。CTOC向其在地表到地表指挥链中的下属发送边境口岸授权（BCA）和跟踪信息。

## 4.7.4.2   CTOC Battle Management Phases

4.7.4.2 CTOC战役管理阶段

The CTOC's role within battle management is to send the BCA message to its subordinates. Prior to receipt of the BCA message, the subordinates are in a "weapons hold" state. Receipt of the BCA message allows this weapons state to be changed to "not-on-hold."

CTOC在战役管理中的作用是向其下属发送BCA信息。在收到BCA消息之前，下属处于 "武器持有 "状态。收到BCA信息后，可以将这种武器状态改为 "非保留状态"。

The target-select phase for the CTOC ruleset is actually the BCA command routine. The BCA command-generating routine is scheduled to occur at the start time of the target-select phase, and the scheduling occurs only once.

CTOC规则集的目标选择阶段实际上就是BCA命令例程。BCA命令生成例程在目标选择阶段的开始时间发生，调度只发生一次。

## 4.7.4.3   CTOC Received Message Processing

4.7.4.3 CTOC接收到的信息处理

The CTOC receives track messages from an intelligence source. The CTOC determines if the message should be delayed. If the message is to be delayed, the message-delay routine will schedule the processing of the message at a future time. If the message is not to be delayed, the CTOC immediately forwards the message.

反恐委员会收到情报来源的跟踪信息。CTOC决定是否应延迟该电文。如果消息要延迟，消息延迟例程将安排在未来的某个时间处理该消息。如果消息不需要延迟，CTOC立即转发消息。

## 4.7.4.4   CTOC System Configuration

4.7.4.4 CTOC系统配置

The CTOC ruleset can only be used on ground platforms. A communications device is required, and weapons are not used. The CTOC can be a commander to a platform using the Corps Artillery (CArty) ruleset, SAM Commander, or Ground Attacker Commander, but CTOC cannot have a commander. As a ground unit, the CTOC cannot be a flight leader or wingman. The CTOC does not use either the target or asset lists.

CTOC规则集只能在地面平台上使用。需要一个通讯装置，不使用武器。CTOC可以使用兵团炮兵(CArty)规则集、萨姆指挥官或地面攻击者指挥官对平台进行指挥，但CTOC不能有指挥官。作为地面单位，CTOC不能担任飞行队长或僚机。CTOC不使用目标或资产列表。

## 4.7.4.5   CTOC Network Recommendations

4.7.4.5 通訊及科技委員會網絡建議

A simplex or broadcast link with message class command to subordinates is needed. Track links can be set up as desired.

需要对下级进行消息类命令的单工或广播链接。跟踪链接可根据需要设置。