

THE INFAMOUS H2/3 MISSION EDITOR – PART II

Scripting the AI behavior – The professional way

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On the last issue, Part I dealt with the basics of the mission editor – creating new missions, selecting the mission type, assigning forces to each mission etc. In Part II, we'll see all the different types of missions that can be assigned to units in H2/3, together with hints and tips for each of them.

Lesson 3: Understanding the Missions that can be assigned in the game.

Harpoon 3 offers a bunch of specific missions that I hope to explain to you clearly here. There are 13 mission types possible. They are: Plotted, Transit, Ferry, Air Intercept, Ground Strike, Ship Strike, Sub Strike, Patrol AAW, Patrol ASU, Patrol ASW, Support, Recon Ground and Recon Ship. Plotted is a mission that is assigned outside the scenario editor using the tool bar and the rest are assigned from within the mission editor. I will explore each mission type, their functions with each platform type and give some tips and tricks in using each one.

FIRST, AN IMPORTANT NOTE ABOUT MISSIONS AND THE PLATFORMS ASSIGNED TO THEM:

Any unit, which can hold an aircraft, is subject to a certain nuance within the editor. When the host platform, such as a ship, air base etc. are assigned to a mission the aircraft that it holds are assigned to it as well. This is not beneficial in most cases. The reason being is that mission assigned to the aircraft may not be its logical or efficient usage. In fact, you will see that if the parent is assigned to a mission that requires it to reach a reference point the aircraft which has been assigned as well will launch and attempt to reach this reference point. There is some value if you wish the aircraft to scout ahead but in most cases another mission will put better usage to said aircraft. You can avoid this by unassigning the aircraft from the mission (using the "u" key) and then assigning it to a mission of it's own. You may also use the formation editor to give this aircraft another mission with it. As a rule when I am playing, I always go into the mission editor and unassign my aircraft from the missions assigned to the host unit before I start the scenario.

NEXT, A NOTE ON ANY PLATFORM THAT CARRIES A WEAPON:

At the start of game play any platform that carries any sort of weapons will strike the first identified enemy unit if it is not assigned a mission. Tomahawk carriers in particular are guilty of this and may salvo them off at the first land unit detected. This may be a problem, as you may not wish to be the behavior. Assigning them a mission will prevent this behavior from taking place.

PLOTTED MISSION:

This is perhaps the most common mission you can create. It is not done within the mission editor but done with the tool bar on your display window. To create this mission simply select the platform you wish to assign; assign its speed with the speed/altitude tool, assign its course using the navigation tool and assign the EMCON using the sensor tool. The platform you chose will then follow the course you have assigned to the letter (meaning expect no deviations from what you ordered them to do). You will notice that as you click on your map a line will be dropped and a small triangle will appear where you clicked. These work like waypoints. So as you drop them, you may also change the speed and EMCON of your plotted unit, which will change as you reach these points.

Aircraft Assigned to the Plotted Mission: Aircraft can only be assigned this mission if they are airborne (a.k.a. you dropped them into your game using the add unit selection). These platforms cannot be assigned this mission independently if they are landed on a ship or at a facility. Aircraft assigned to the plotted mission will follow the course and speed you give them provided that fuel constrictions allow. They will engage any hostile platforms in their path but will not deviate to engage. Also keep in mind that their sensor arcs are pointing on the course they are traveling. When aircraft reaches the ends of its plotted mission it will it hold at loiter speed and its last assigned altitude. Assigning aircraft to this mission is not recommended if you wish to have a repeatable mission.

Ships assigned to the Plotted Mission: Ships assigned to the plotted mission will follow the course and speed you give them provided that environmental conditions allow. Meaning as you do this you must make sure the navigation paths are clear of land, the weather is agreeable and you have fuel to make the trip. Ships will engage any hostile along their path with any weapon available - however, they will not go out of their way to engage. So if you have Harpoon missiles with a range of 75 miles, the ship is not going to maneuver to engage a target 80 miles away. Also keep in mind that if a



ship must activate its radar, the radar will remain active for the duration of the scenario. When a ship reaches the end of its plotted mission it will set itself to 0 knots and will be facing the course it was traveling on.

Subs assigned to the Plotted Mission: Subs assigned to the plotted mission will follow the course, speed and depth you give them provided that the environmental conditions allow. Meaning as you do this you must make sure the navigation paths are clear of land, the weather/sea state (when surfaced) is agreeable and you have the fuel to make the trip (double check those diesels). Subs will engage any hostile along their path with any weapon in their tubes; however, they will not go out of their way to engage. If you have a target at 25 miles and your torpedo range is 22 miles they will not go the three more miles to attack. They will not load a tube with a harpoon to reach the target either. You must also keep in mind that the sub will change its depth (higher) if the sea gets shallower. It will retain this depth through the rest of the transit even if the sea gets deeper again. Once it reaches the end of its path it will remain at 0 knots, remain at its last traveled depth and be facing the course it was traveling prior to reaching the end of its path.

Facilities assigned to the Plotted Mission: Facilities use this mission when they are assigned an EMCON state. Anytime you assign a sensor state using the tool bar the facility will be marked as being in a plotted mission. It will engage targets if they come into range. If you select the intermittent setting for any radar/sonar there is an extra step involved. This was described above in the Basic Operation of the Mission Editor. Look for the special section titled mission sensor intermittence.

Tips and Tricks of the Plotted Mission:

The plotted mission offers no attack/defense AI enhancements but is the best navigation implementation in the game. It allows you to assign any course, speed, or altitude as the platform allows. So you can have circular paths, zig zags, transit doglegged waters etc. So always think of this mission as just a navigator in nature with no concept of attack or defense.

You can use this mission with AC to design your own little strike groups. For example if you attempt to create a Regimental Backfire Raid using another mission your AC are often bunched up or streamed along in a long line of raiders. If you like, you can use the plotted mission to make each AC independent, creating a regimental raid that is wide not narrow. (Check out Ragnar's scenario, Clash of the Titans for this effect). Keep in mind, however that this takes careful planning.

THE TRANSIT MISSION:

The purpose of a transit mission is to move a platform from one point to another. This is accomplished by placing a reference point (preferably your destination); selecting it (which will make it into a triangle); opening up the mission editor and creating the mission. You will then have to make sure that the unit you want to transit is selected and you press okay. Your platform is now assigned to that mission.

Ships assigned to the transit mission: Moving ships is the primary reason this mission was designed. It is simply a means to move one of these platforms from one point to the destination you chose. Ships will always default to their cruise speed. I suggest using one reference point as H3 has a hard time with multiple reference points at this time. It is a direct path mission and if you wish twists, turns or a custom path use the plotted mission type.

Subs assigned to the transit mission: Moving subs is another reason this mission was designed. It again is a way to move a submarine from a start point to a destination point. Submarines will always default to their creep speed and go to the deepest possible depth. I again suggest using one reference point as H3 has a hard time with multiple reference points. It is a direct path mission if you wish twists, turns or a custom path use the plotted mission type.

Aircraft assigned to the transit Mission: This mission will not work at all for aircraft. If an aircraft is airborne and assigned to this mission it will simply return to base. If an aircraft is grounded and assigned to this mission it will not launch.

Facilities assigned to the transit Mission: Facilities will not work at all for this mission.

Tips and Tricks with the Transit Mission:

To create variability in this mission always set a delay of one minute. This way the actually path will be subject to change every time the scenario is started.

When using this mission always create and assign one reference point. It is possible to assign more but the AI seems to have trouble finding them. It will keep to the general areas around the points but seems to get confused with the order at which to reach them and will often follow strange paths.

Keep in mind that once your platform/group reaches the reference point it will not stop. It will continue trying to reach the reference point but will start a series of turns all around the compass constantly trying to reach the reference point. It will not move a mile from it and will appear to be twisting and turning.

This is actually beneficial as it lets you anchor units to it. Hence if you have a ship in port or a unit which must remain still it is an excellent anchor (the only one by the way). The ships will turn and twist but they will stay there. Units that have a zero speed (such as SOSUS) will stay in place trying to meet a reference point they'll never get to (hence staying in place).

THE FERRY MISSION:

The Ferry mission is specifically designed for the movement of aircraft from one air-capable platform to another. It is accomplished by selecting the destination air capable platform (Air base, Carrier, and Frigate), creating a Ferry mission within the mission editor and selecting the AC to accomplish this mission.

Aircraft assigned to the Ferry Mission: Moving aircraft from one aircraft capable platform to another is the reason this mission was designed. The aircraft will always travel at cruise speed and at high altitude.

Ships, Submarines, and Facilities assigned to the Ferry Mission: The Ferry mission has no function with these platforms and will automatically unassigned if attempted.

Tips and Tricks with the Ferry Mission:

The destination air base must be within the aircraft's fuel radius to work properly. The AI seems to compute fuel as a typical mission. So you could only fly so far out before you have to return to your home base in fear of running out of fuel. The AI doesn't take into account that you are flying to another base that may have fuel. So once your aircraft hit their maximum fuel radius they will return to their home base regardless. It does let you launch the mission (which in other cases it will not if it knows you do not have the fuel) but will send your AC back to base once they hit the fuel radius point. So before assigning this mission change the range to the destination to be sure it is within your fuel radius to ensure this mission works properly.

This is an excellent mission type for neutrals. Its most common use is for airliners and airlift assets. You can assign replacement to be flown out to a carrier but the AI will not do much with them unless it has AC assigned in its formation editor.

THE AIR INTERCEPT MISSION:

The purpose of an intercept mission is, as its name implies, to intercept an enemy aircraft. It is set simply. All that you are required to do is to select the intercept mission in the mission editor, click okay and select the platform you would like to accomplish this mission. The only nuance with this mission is that something must detect the aircraft and identify it as hostile. An undetected or unidentified aircraft will not trigger this mission.

Aircraft assigned to the Air Intercept Mission: The description of the mission above pretty much covers it. Aircraft assigned to this mission will fly at high altitude, the fastest speed and with the EMCON to what you set it until it reaches weapons range or must search. This mission makes AI aircraft very aggressive. Multiple aircraft may be assigned to the same air intercept mission.

Ships assigned to the Air Intercept Mission: Assigning a ship to an intercept mission has no effect. The ship will stay assigned to it, will engage enemy AC or ships in its engagement envelope but will not move to intercept any enemy aircraft. The ship's course, speed will remain constant, which is the default course and speed set when the unit is placed. The ship also keeps the EMCON state assigned to it in the mission editor until an enemy aircraft enters its surface to air missile range where it will go active to engage.

Subs assigned to the Air Intercept Mission: Assigning a submarine to an intercept mission has no effect. In fact assigning one to this mission is detrimental, as the sub will remain at periscope depth. Subs with SAM capability will engage enemy AC but only if they enter the engagement altitude and will not maneuver to intercept.

Facilities assigned to Intercept Missions: Assigning a facility (such as AAA or a SAM unit) has no effect. The facility will stay assigned to it, will engage enemy aircraft that enter its engagement envelope but no further benefit is granted.



Tips and Tricks for the Air Intercept Mission:

This mission is perhaps the best way to produce a very aggressive AI airforce particularly with an enemy AI that has many detection assets available to it. Provided an enemy is detected and identified the air units assigned to this mission will attack relentlessly. Their sensor arcs will always point in the proper direction. As mentioned above it is not without limitation. The enemy aircraft must be identified as a hostile before any intercept is triggered.

THE GROUND STRIKE MISSION:

The purpose of the ground strike mission is to destroy a ground facility. There are two types of ground strike missions you can perform. The first is setting a ground strike mission against a known target. The second is setting ground strike missions against an unknown target.

The ground strike mission against a known target is simple. You can see this target so to set this mission up you just select it, create mission, select ground strike and then assign the platforms you would like to strike it with. This mission ends with the destruction of that target.

The ground strike mission against an unknown target is just as easy. This mission is for targets of opportunity that pop up as your sensors begin detecting enemy facilities. All you need to do is create a mission, select ground strike, assign your platforms and then you are done. The AI will launch strikes as new facilities are detected and will not end until there are no more ground targets, weapons are expended or the game has ended.

Aircraft assigned to the Ground Strike Mission: The designers of Harpoon 3 incorporated a very neat feature with the ground strike mission. It is the ability to create your own strike packages. What this means is that as you assign attack aircraft/bombers to this mission you also have the ability to assign supporting assets with it such as fighters, jammer aircraft and SEAD. Just be aware as these missions are launched they will be broken up by aircraft type and weapon type. So your fighters will be one group, as will your attack AC and SEAD flights. They will, however, support each other. The only limitation is aircraft speed as your fast fighters may arrive much faster than your lumbering bombers. Careful planning and mission mixing can help this. These missions will continue until the assigned target is destroyed or the scenario ends.



Ships assigned to Ground Strike Missions: Ships can be assigned to ground strike missions as well. As above you can strike known targets and targets of opportunity. These missions are assigned as described above.

You do need to keep in mind one thing. If ships have long-ranged weapons such as Tomahawks they may fire them at the first ground facility it sees regardless of the assigned mission. They will then attempt to engage the assigned target with whatever weapons it has available to it.

Subs assigned to a Ground Strike Mission: Subs can be assigned to ground strike missions. Again the same method is used to assign them to this mission and they can engage known and unknown targets. They will again go to periscope depth to engage their target which makes them vulnerable. Again they may strike the first unit that they "see" and in range of their weapons. The best strategy to overcome this is to make sure that the first unit seen is the facility you wish to destroy.

Facilities assigned to a Ground Strike Mission: Facilities can be assigned to a ground strike mission as long as they have a weapon that can perform that function. If they do not they will simply sit there. These missions are assigned by the above mentioned methods.

Tips and Tricks for Ground Strike Missions:

When planning a strike mission against a base (a group of facilities grouped together) I would suggest ungrouping them and assigning your platforms to strike specific targets. The reason why is that the AI may not choose the wisest first targets. In fact, given that runways are nearly indestructible it may not be a wise idea to waste munitions on them. Your best bet is to un-group the base and specifically target the hangars, revetments, ammo dumps and fuel dumps. This will guarantee an airbase's destruction without wasting munitions and aircraft.

Strike missions are generally straightforward but extra planning pays off. Simple time-on-target calculators are available out there on various web pages to assist you. You do not have to always assign your support aircraft/units to the same mission. You can create separate missions within the mission editor to accomplish your tasks. Creativity is key.

If you have a strike package that has aircraft of different types and different numbers you have another challenge to deal with. Few aircraft launch quicker than many. So if you have a strike package that includes 1 Prowler and 4 Intruders (with the same bomb load). Remember that due to the nature of the Strike Mission the Prowler will launch independently and the Intruders will launch as a four-plane group. This means that the Prowler may be well on it's way before the Intruders can begin their journey. This may not be your desired result, as the Prowler would be extremely exposed. To overcome this problem I suggest separate Strike Ground missions with similar number compositions and careful calculation of the times each aircraft will reach the target.

Keep in mind that these missions do not allow you to waypoint. So your attacks will always be on a direct line from their home base.

If your in a situation where many units are detected at once and you've got a ground strike mission of the unknown target assigned the AI tends to strike enemy units in the order that they were created.

Always keep in mind that ground strikes against known targets end when that target is destroyed and that ground strikes against unknown targets are perpetual.

THE SHIP STRIKE MISSION:

The purpose of the ship strike mission is to destroy enemy ships. There are two types of ship strike missions you can perform. The first is setting a ship strike mission against a known target. The second is setting ship strike missions against an unknown target.

The ship strike mission against a known target is simple. To set this mission up you just select it, create mission, select ship strike and then assign the platforms you would like to strike it with. This mission ends with the destruction of that target.

The ship strike mission against an unknown target is just as easy. This mission is for targets of opportunity that pop up as your sensors begin detecting enemy ships. All you need to do is create a mission, select ship strike, assign your platforms and then you are done. The AI will launch strikes as new facilities are detected and will not end until there are no more ship targets, weapons are expended or the game has ended.

Aircraft assigned to the Ship Strike Mission: The designers of Harpoon 3 incorporated the same neat strike package feature with the ship strike mission as with the ground strike mission. You would incorporate it as mentioned above. Always keep in mind that your AC will take the flight characteristics that their weapons require. You may also use this feature to make sure your strike packages strike the correct vessel (s).



Ships assigned to Ship Strike Missions: Ships can be assigned the ship strike mission as well. They can perform both types of strikes (known and unknown). When ships are assigned to this mission and a target is detected and identified they will travel at full speed to reach their weapons launch range. As with other strike missions they will attack the first target identified as hostile.

Subs assigned to Ship Strike Missions: Subs can perform this mission and can engage known and unknown targets. They will run at periscope depth and run at full speed at their assigned EMCON to attack targets. This is very dangerous, as subs are detectable at high speed and periscope depth. This mission is not recommended for submarines.

Facilities assigned to Ship Strike Missions: This mission works well with ground facilities assigned to it provided they have weapons that can engage ships. Ground facilities can perform this mission against known and unknown targets.

Tips and Tricks for Ship Strike Missions:

This mission is perfect for small combatants of the PT variety, aircraft and ground facilities such as SSM's launchers and artillery. It does require that something see them so sensors of some sort are required.

THE SUB STRIKE MISSION:

The purpose of the sub strike mission is to attack and destroy enemy submarines. There are two types of sub strike missions you can perform. The first is setting a sub strike mission against a known target. The second is setting sub strike missions against an unknown target. The latter is most commonly used as a sub is hardly ever seen at the beginning of a scenario. The missions are assigned similarly to the Ground and Ship strike missions that are described above. These missions run until the assigned targets are destroyed, enemy submarines are still visible and weapons are available.



Aircraft Assigned to the Sub Strike Mission: Aircraft are perhaps best suited for this mission. Upon detection of a target they will launch with the intention of attacking the sub target. If the submarine is not pinpointed, the assigned aircraft will begin a search pattern based on the information it has to pinpoint the sub and attack it. This pattern is always based on the detection diamond or circle and will systematically drop sonobouys until they are expended or the contact has been lost.

Ships assigned to the Sub Strike Mission: Ships can perform the sub strike mission. As soon as a submarine is detected and identified they will run at full speed toward the target in an attempt to engage. They will launch their weapons when they are in range and will attempt to "hunt" the submarine until the contact is lost. This mission is highly recommended for smaller

sub chaser types. They will behave as they do in real life and will pursue and hunt offending submarines.

Submarines assigned to the Sub Strike Mission: Submarines can perform this mission. They will sit at periscope depth waiting for detection and then run at full speed toward the target attempting to engage until the target is destroyed or contact lost. This mission is not recommended for submarines, as they are extremely vulnerable at those speeds and depth.

Facilities assigned to the Sub Strike Mission: No known facilities have been built to perform this mission.

Tips and Tricks For Sub Strike Missions:

Aircraft and small sub-hunters perform this mission well. All others can perform the mission but the detriments outweigh the benefits.

This mission is an excellent mission to assign to embarked anti-submarine warfare aircraft. The reason is they will act per naval doctrine. When the surface group detects the submarine with its radar the aircraft will be launched to localize and prosecute. Another benefit is that without missions assigned, embarked AC will be subject to the missions assigned in the formation editor. The end result of that is a mass of ASW dropping sonobouys inefficiently slowing game play needlessly.

PATROL AAW MISSION:

The purpose of this mission is to patrol a specified area for air contacts, identify them and if hostile destroy them. The AAW Mission is assigned by dropping reference points, selecting them (forming the triangles, creating a mission, selecting Patrol AAW and then clicking okay. You will then be able to assign whatever platform you desire to this mission.

Aircraft Assigned to the Patrol AAW Mission: Aircraft are best suited for this mission. When this mission is assigned aircraft will launch to their designated patrol area at high altitude, cruise speed and at their designated EMCON. If they detect any airborne contact they will move to identify at optimum intercept altitude and speed and attempt to identify the airborne contact. If the contact is designated as a hostile the assigned aircraft will attack. If the contact is designated as a neutral the aircraft will return to its patrol area (marked by reference points).

Ships Assigned to the Patrol AAW Mission: Ships assigned to this mission will patrol the designated reference points. However, unlike aircraft they will not move to investigate an air target. They simply patrol the reference points

at cruise speed at the set EMCON. If an air contact enters its patrol and the target is identified as hostile. The surface will go active to engage. It will return to its original EMCON when the hostile contact is destroyed or not other hostile contacts are detected.

Subs Assigned to the Patrol AAW Mission: This mission was not designed to function with submarine units. If assigned to this mission subs will transit at their cruise speed, shallow depth until they reach their first assigned reference points. They will then patrol these points at shallow depth, creep speed. They do come up to periscope depth at each point but have no AAW function. A SAM armed Russian sub was tested with no known benefit.

Facilities Assigned to the Patrol AAW Mission: This mission has no real function with land facilities other than to act as a placeholder.

Tips and Tricks for the AAW Mission:

Understand that this is the least aggressive anti air mission to assign aircraft. Air intercept missions still produce the most aggressive and productive results.

When setting up an AAW patrol mission with aircraft avoid using box patrol areas (4 reference points). The reason is that aircraft tend to turn off axis from an expected attack or the direction of an expected intruder. This leaves your patrolling aircraft extremely vulnerable (as your sensor arc may be pointing away from the intruder) and the enemy typically gets the first shot when a box patrol zone is used.



Instead of using a box we've found the best application of this mission is to use two reference points. The aircraft will move back and forth generally keeping an eye on the expected avenue of attack. This is the closest you will get to a racetrack type search pattern. A common tactic is to set up two of these patrols parallel to one another which models a fighter patrol well.

Assigning ships to this mission is a way to create the infamous SAM trap. This is very useful in most applications and will surprise the enemy once. Remember, the ship keeps its EMCON until an enemy is identified as hostile. It will then illuminate and engage if the target is in range. When the target is destroyed it will return to its original EMCON setting. This is highly dependent on the enemy's detection capabilities but is very useful regardless. Again a ship assigned will not "chase" a target so a careful set up is needed.

PATROL ASU MISSION:

The purpose of this mission is to patrol a specified area for surface contacts, identify them and if hostile destroy them. The ASU Mission is assigned by dropping reference points, selecting them (forming the triangles, creating a mission, selecting Patrol ASU and then clicking okay. You will then be able to assign whatever platform you desire to this mission.

Ships Assigned to the Patrol ASU Mission: Ships assigned to this mission will move toward the assigned reference points at cruise speed at the desired EMCON. If a surface contact is detected and unidentified the ship will move at best speed to intercept in an attempt to identify and attack if hostile. Ships will go EMCON active in this mission if they attack or are attacked. If a target is identified as Neutral the ship will return to patrolling the assigned reference points.

Aircraft Assigned to the Patrol ASU Mission: Aircraft assigned to this mission will move toward the assigned reference points at cruise speed, high altitude at the desired EMCON. If they detect ANY unknown contact they will move to identify and attack if hostile. Aircraft will go EMCON active in this mission if they attack or are under attack. If a target is identified as neutral or destroyed they will return to patrolling their assigned reference points.

Subs Assigned to the Patrol ASU Mission: Submarine platforms that are assigned to this mission will sail at cruise speed, shallow depth and at their assigned EMCON. Once they reach the first reference point they will change their speed to creep, remain at shallow depth and keep the same EMCON. Once, they detect an unidentified unit they will move to identify and attack if hostile. If the target is identified as neutral or destroyed the submarine will return continue patrolling the assigned reference points.

Facilities Assigned to the Patrol ASU Mission: This mission has no real function with land facilities other than to act as a placeholder.

Tips and Tricks for the Patrol ASU Mission:

This is the preferred mission for all surface warfare craft. I suggest using a box like patrol zone with four reference points.

PATROL ASW MISSION:

The purpose of this mission is to patrol a specified area for submarine contacts, identify them and if hostile destroy them. The ASW Mission is assigned by dropping reference points, selecting them (forming the triangles, creating a mission, selecting Patrol ASW and then clicking okay. You will then be able to assign whatever platform you desire to this mission. When this mission is assigned a sub threat zone will be placed in an area matching your patrol zone.

Aircraft Assigned to the Patrol ASW Mission: Aircraft assigned to this mission will move to the place reference point at their cruise speed at high altitude. When they reach the first reference point they will drop to low altitude and lowest speed setting. They will then begin an ASW search routine based on the placement of your reference points. If they are sonobouy capable they will be dropped in patterns and if they are dipping sonar capable they will hover momentarily to search. Aircraft will attempt to search, identify and (if hostile) destroy the hostile contact. They will return to their original search pattern if a contact is lost or destroyed.

Ships Assigned to the Patrol ASW Mission: Ships assigned to this mission will move to the reference points at their cruise speed and chosen EMCON. Once they reach their patrol zone, they will decrease speed to creep and begin search for subsurface contacts. If they detect a submarine contact they will move at best speed to get into weapons range regardless of postures due to the threat zone. Once the contact is lost or the submarine platform is destroyed they will revert back to creep speed and continue patrolling the assigned reference points.

Subs Assigned to the Patrol ASW Mission: Submarines assigned to this mission must be placed within the ASW threat zone (reference points) in order for this mission to function. If they are outside the threat zone they will not be able to carry out this mission properly. Once they are properly placed the submarine will patrol within the threat zone at creep speed, intermediate depth and at their designated EMCON. Once any subsurface contact is detected the assigned sub will move at best speed to attack regardless of posture. Once the contact is lost or destroyed the assigned submarine will continue patrolling the assigned zone at creep speed, intermediate depth and assigned EMCON.

Facilities Assigned to the Patrol ASW Mission: This mission has no function with land facilities.

Tips and Tricks for the Patrol ASW Mission:

As mentioned before, this mission will create an ASW threat zone that will not allow friendly submarines to pass through, and the submarine will be unassigned from any mission that orders them to do so.

Be careful not to assign ASW zones too close to each other if you have subs in your order of battle. The AI always operated under full realism. If another unit of the same side detects one of your subs; it will be prosecuted. The best rule of thumb is to remember that convergence zones are generally thirty miles apart.

When assigning aircraft with sonobouys to this mission, please keep game speed considerations in mind. Too many sonobouys will slow the game down considerably. The best way to overcome this issue is to keep your patrol area size down and carefully plan patrols to be sure there are not hundreds of sonobouys in the water at the same time. Careful planning, timing and the use of sub strike missions can overcome this problem and produce a realistic game.

THE SUPPORT MISSION:

The support mission is simply a mission in which platforms support each other. Sounds vague right? Well it is. This is a mission that you would assign all support ships, aircraft and submarines. You do this by simply dropping reference points, selecting them (forming the triangles), create mission, select support and then click okay. You then assign whatever platforms you wish to this mission.

Aircraft Assigned to the Support Mission: As of today this is the most useful application for the support mission. All aircraft assigned to this mission will fly at cruise speed and high altitude. Once they reach their designated point they will remain at this speed and altitude by facing 45 degrees on the compass. If there are multiple reference points the assigned aircraft will loiter momentarily before returning to cruise altitude to continue on to the next reference point.

Ships Assigned to the Support Mission: This mission works with ship platforms but has no applicable use other than to act as an anchor. If you assign a ship to this mission it will travel to the reference point at cruise speed. Upon reaching this point it will stay on the reference point and be facing 45 degrees on the compass.

Subs Assigned to the Support Mission: This mission works with sub platforms but has no applicable use other than to act as an anchor. If you assign a sub to this mission it will travel to the reference point at the shallow depth and at creep speed.

When it reaches the reference point it will stay in place but be facing 45 degrees on the compass.

Facilities Assigned to the Support Mission: There appears to be no value in using the support mission with a ground facility.

Tips and Tricks For the Support Mission:

Support aircraft are best assigned to this mission. AEW and tankers are preferred as the reference points anchor them down preventing them from wandering into enemy AAW range or wandering aimlessly around the map.

Rumor: It's been said that the original intent of this mission was for refueling and replenishment. I have yet to actually confirm this so for now it's just a rumor.



THE RECON GROUND MISSION:

The purpose of the ground recon mission is to identify any facilities along a path marked by reference points. To assign a unit to the recon ground mission you simply create a reference point (points), select them (forming the triangles), create mission, select the recon ground in the menu, click okay and then assign the aircraft you wish to assign this mission to in the next menu.

Aircraft Assigned to the Recon Ground Mission: These are the units this mission was designed for and therefore should be the only platform types assigned. When you assign an aircraft to this mission it will fly to the reference points in the way they were assigned (click to triangle). If a distance is required to be flown the aircraft will take off and fly at medium altitude and it cruise speed. When it reaches a certain distance away it will drop to low altitude to reach the reference point. Once it reached the final reference point it will move to return to base at high altitude and cruise speed. This mission is perpetual. The aircraft will rearm/refuel and then is sent out on the same mission again. This continues until the aircraft is destroyed or the game has come to an end. Only one aircraft can be assigned to this every particular ground recon mission you assign. Anymore that are assigned will sit awaiting a launch that will never happen.

Ships assigned to the Recon Ground Mission: Ships cannot be assigned to this mission.

Subs assigned to the Recon Ground Mission: Submarines cannot be assigned to this mission.

Facilities assigned to the Recon Ground Mission: Facilities cannot be assigned to the Recon Ground Mission.

THE RECON SHIP MISSION:

The purpose of the recon ship mission is to identify any ships detected as a platform travels along a path set by reference points. To assign this mission to a unit simply drop your reference points, select them (the reference point turns into a triangle), create mission, select recon ship, click okay, select the platform you would like to assign to the mission and then click okay. If you delay the mission by one minute the first destination reference point will change each time the mission is run.

Aircraft Assigned to the Recon Ship Mission: Aircraft assigned to the recon ship mission will fly out to the reference points. Upon detection through any means of any ship contact they will change course to investigate, once they achieve identification they will return to searching each reference point. The aircraft assigned will fly at high altitude and cruise speed. Aircraft assigned to this mission will continue traveling to reference points and identifying contacts until they run out of fuel and return home.

Ships Assigned to the Recon Ship Mission: Ships assigned to the recon ship mission will transit out to the reference points. Upon detection through any means they will change course to investigate, once they achieve identification they will return to searching each reference pint. The ship assigned will travel at cruise speed. Ships

will continue traveling to the reference points and identifying contacts until they run out of fuel and the scenario duration ends. Ships will only act in self-defense while assigned to this mission.



Subs Assigned to the Recon Ship Mission: Submarines assigned to the recon ship mission will transit out to the reference points and upon detection will change course/speed to investigate. When the investigation is made they will return to transiting reference points. Subs assigned to this mission always transit at shallow depth and travel at creep speed. If a new contact is found it will move to cruise speed to attempt to move into range to make identification. Once this is made it will return to creep speed and continue traveling to reference points. Subs will defend themselves

Tips and Tricks to the Recon Ship Mission:

There is a bug with this mission. Assign more than one reference point to this mission. If only one reference point the unit will hang on the reference point at cruise speed and facing forty five degrees.

The kind of EMCON you use is a toss up. Active and passive settings have their advantages and disadvantages. Notably, if our active your enemy can detect and id you quicker. If you're passive, your platform must move closer to identify. The situation will call for which one to use. Just remember those MPAs do not often have enough SSMs or countermeasures to protect themselves and more often than not will get caught by a high-end SAM.

ERRATA:

Strike Timings:

Getting the AI to conduct coordinated strikes is one of the more difficult aspects of building a strike mission. Of particular difficulty is determining proper strike timings to coordinate your time on target. The easiest way to get accurate timing is to build a spreadsheet (MS Excel, etc). These are relatively easy to build however there is one gray area which is launch timings. In researching a recently asked question I have put together a little chart showing these times. Keep in mind these were determined by the Mk. 1 eyeball watching the clock and the selected units at the same time. I may be a few seconds off but this should get you close. Please let me know if there are any problems with these.

Launch Timings:

| Plotted/Manual Launch | Strike Mission | Area Mission * | Recon Mission* |
|------------------------|-----------------|------------------------|------------------------|
| 1 AC 2 minutes 15 sec. | 1 AC 8 minutes | 1 AC 2 minutes 15 sec. | 1 AC 2 minutes 15 sec. |
| 2 AC at 4.5 | 2 AC 10 Minutes | 2 AC at 4.5 | 2 AC at 4.5 |
| 3 AC at 6.5 | 3 AC 12 Minutes | 3 AC at 6.5 | 3 AC at 6.5 |
| 4 AC at 8.5 | 4 AC 14 Minutes | 4 AC at 8.5 | 4 AC at 8.5 |

* Keep in mind that these missions will launch aircraft independently (not in groups) and each AC (aircraft) will move toward their assigned reference points as they launch.

This manual will continue to be updated as new information becomes available. You will always be able to find the most updated version at <http://www.harpoonhq.com>

Okay that's it...All done...Get out of here...Have fun with it and build me a new scenario to play :-)