

ON PATROL

Solitaire Rules for SUBMARINE

by Robert Harmon

Many of this magazine's readers can testify to the difficulties of finding a live opponent -- even in urban areas. In rural regions, this can be a serious problem, as I found when I moved away from the San Francisco Bay area in 1978. Although living near Mount Shasta does have its advantages, ftf play is much more difficult when opponents are twenty or thirty miles away (as the crow flies.)

My first experiences with SUBMARINE were in solitaire play. A problem with the SUBMARINE rules is that the few scenarios devised for solitaire only involve a sub against randomly moving cargo ships, which are unchaperoned. The resulting game soon becomes reminiscent of wooden ducks under fire on a carnival midway. I decided to produce something more challenging.

The new rules provided below should change that problem, and add to Submarine's enjoyment for many players. In these rules, the player assumes the role of sub commander but will face escorts that can shoot back as well as unarmed merchantmen. Players will find that the escorts will move automatically -- and implacable. The rules may appear complex at first, with added terminology to boot. The aim of the rules is to provide for automatic escorts that will give the player something more than target practice. Once in operation, players will find that the system is fast-moving and playable once the rules have been mastered.

100.0 SOLITAIRE RULES

The solitaire player assumes the role of submarine commander, and opposes the surface vessels in any convenient scenario. The surface ships (escorts, capital ships, and merchantmen) move automatically according to the rules provided below. The solitaire player moves both submarine and surface units, and maintains log entries for all of them. Surface units move and attack as set forth in the rules, automatically rather than by choice of the solitaire player. The player should strive to move these units as the rules dictate. The result will be a real fight against a faceless but *active* enemy.

101. Applicable SUBMARINE Rules

101.1 All rules for SUBMARINE are in force, unless amended or canceled by these rules.

101.2 Players may select to play either the Basic Game, the Optional Rules with the Basic Game, or the Advanced Game (optional rules included). Whichever of these three options are selected, they must be played in the *entirety* with all rules involved (as amended by the solitaire rules). In other words, each of the three possible rules configurations must be used as a "package."

101.3 Any of the "Design Your Own" scenario rules may be used at the player's discretion, except those specifically deleted below.

102. SUBMARINE Rules Deletions

102.1 Disregard rule 20.3.2. In any scenario where escort placement is not dictated by the rules, escorts are placed according to Rule 103.2 at start.

102.2 Disregard all rules in Section 21.0 (Submarine Hidden Movement) except rules 21.2, 21.6, and 21.7. Rule 21.2 is amended to apply to the submarine at all times; the bow hex is to be noted each turn in the Submarine Log. Submarine visibility and "hidden" movement is discussed in Section 104 below.

102.3 Disregard Section 40.0 (Torpedo Hidden Movement) in its entirety. Torpedoes are presumed visible under Rule 21.6 and will have their counters on board throughout their movement.

102.4 Cancel Rule 50.0 (Weather) in its entirety. Presume *Clear* (i.e., calm) conditions unless a scenario specifically states otherwise.

102.5 Delete Section 61.0 and 62.0 (Depth Charge Capacity and Torpedo Availability) entirely. Submarines start each solitaire game with all tubes loaded and the maximum reload allowed by the Data Chart; choice of

torpedo types is left up to the player, subject to the availability restrictions shown on the Torpedo Data Charts. Escorts have *unlimited* depth charge and ATW capacity, and all carry only the latest, heaviest depth charge allowed by the Weapon Availability Chart (e.g., 600l lb. depth charge instead of 300 lb.). ATW are always present when indicated by the Ship Data and Weapon Availability Charts. (EXC: One-ton, MK X depth charges are carried in addition to 600 lb. depth charges on British DDs, with a limit of *one* Mk X per ship under Rule 51.5.1!)

103.0 Starting the Solitaire Scenario

103.1 Convoy Formations:

103.1.1 Formations must adhere to those shown on page 11 of the *SUBMARINE* rulebook or on Chart 103.1 (New Formations Table). The formation is automatically determined by the number of merchantmen available; 18-ship convoys will automatically set up in Formation 1, for example.

NEW FORMATIONS TABLE			
These formations may be added to those detailed in Rules 20.2.7-12 in order to cover all situations that have appeared in print to date.			
Formation 7			
This convoy formation is composed of six ships in three columns with two ships per column.			
Column	1	2	3
Bow Hex	E20	M20	U20
Direction	3	3	3
Formation 8			
This convoy formation is composed of three ships in one column.			
Column	1		
Bow Hex	X22		
Direction	1		
Formation 9			
This convoy formation is composed of five ships in three columns with two ships in each outside column and one in the middle.			
Column	1	2	3
Bow Hex	E20	M20	U20
Direction	3	3	3
Formation 10			
This convoy formation is composed of four ships in two columns with two ships in each column.			
Column	1	2	
Bow Hex	I40	Q40	
Direction	6	6	

103.1.2 If a 12-ship convoy is being set up, roll a die. A roll of 1-3 will require they be placed in Formation 3; a roll of 4-6, Formation 4.

103.2 Escort Formations:

103.2 Escort Station Chart				
	E	A	E	
C	O	C	O	C
	U	E	U	
	T	N	T	
	E	T	E	
	R	E	R	
	M	R	M	
	O		O	
	S		S	
	T		T	
	C	C	C	
	O	O	O	
	L	L	L	
	U	U	U	
	M	M	M	
D	N	N	N	D
	F	B	F	

Convoy Escort	
Station	Position In Formation
A	Stern of escort six hexes ahead of lead ship, center column (5-hex gap).
B	Bow of escort six hexes behind trailing ship, center column (5-hex gap) (position used only with <i>even</i> number of escorts).
C	Even with lead ship in outer columns, and eight hexes to left AND right.
D	Even with trailing ship in outer columns, and eight hexes to left AND right.
E	Even with A, and ahead of outer columns.
F	Even with B, and behind outer columns.
—	Remaining escorts: paired off behind C, with 5-hex gap in front and behind. Must be symmetrical on both sides.

This chart shows you where to place escort ships.

103.2.1 Placement of escorts is mandatory, and is performed according to Chart 103.2 (Escort Stations Chart.). This is done after placement of merchantmen or capital ships, and is based on the number of escorts present as the chart indicates.

103.2.2 Escorts move in unison with the convoy, maintaining their place in the overall formation, until torpedoes are fired or a sub is detected as the Solitaire Movement rules direct.

103.2.3 Placement is in order of priority: Escort Station A being the highest priority. The highest valued escort (i.e., highest VP) is placed in Station A, the next highest in Station B, and so forth in descending order.

103.2.4 Escorts placed in Escort Station B may be placed inside the convoy box in compliance with the Escort Station Chart.

103.2.5 In scenarios where escorts are the only surface units, placement will be directed by the scenario rules, and the escorts will move in unison as directed by Rule 104.2 below.

103.3 Capital Ship Formations:

103.3.1 Capital Ships (defined as carriers, battleships, and cruisers) are placed in convoy formation (i.e., columns) in the patterns dictated by Rule 20.2.7 and Chart 103.1.

103.3.2 Capital Ships, when in a convoy with merchantmen, must be placed in column in the following priorities:

a) The first ship in column, beginning with the center column and working outward (alternately first the nearest left, then the nearest right) toward the outer edges of the convoy.

b) When the lead position in all columns are filled with Capital Ships, any remaining Capital Ships are to be placed in the outermost columns (left and right) in equal numbers each.

c) If the process leaves an odd Capital ship, place it in the rear of the center column.

103.3.3 Placement of Capital Ships is to be by order of Victory Point value, and is done before merchantmen are placed.

104.0 Solitaire Movement

104.1 Submarine Movement:

104.1.1 Submarines are moved by the Solitaire player acting as the sub commander. Submarine movement is voluntary and is performed in accord with normal *SUBMARINE* rules.

104.1.2 Submarine counters are on board and visible to the player at all times. "Hidden" or "visible" status is now determined by the Escort Action Table (Chart 104.2.1) and the Submarine Detection Table (Chart 104.1.3) as the result of searches performed during turn.

104.1.3 Whenever a submarine is contacted by radar or sonar search, or is "visible", an additional submarine marker is placed according to the Submarine Detection Table. This indicates that the sub has been detected by the enemy. Submarine markers may not exceed one per active submarine.

SUBMARINE DETECTION TABLE		
The Submarine counter itself, of course, remains on board at all times, since the solitaire player is the sub commander. However, markers are used to show the various levels of detection by the enemy--and are used to orient escort movements. The markers indicate the target hex--the hex ahead of the markers bow--and provide a convenient basis for using the Escort Action Table at the end of each turn.		
Phase	Event	Action
any	Sub visible or surfaced (depth 0-25)	Place submarine counter (any) of the sub's own nationality <i>under</i> the sub counter. Move the marker with the sub as long as it remains at 0-25' depth. Do <i>not</i> confuse it with your real sub!
8	Sub disappears from visible depth (50+)	Put submarine counter of escort's own color in the exact position sub began its movement, to include precise facing/bow direction. Do <i>not</i> move with sub in sub movement phase.
6	Sub found by radar/sonar search, not visible (50+ day, 0-50+ at night)	Put sub marker of escorts' own color on sub position, pointing in same direction. Do <i>not</i> move with sub in sub movement phase.
6	Sub missed by radar/sonar search, not visible	Invert marker already on board. If there was no sub marker to begin with, continue in Mode 1.
8	Torpedoes appear; sub not previously sighted or contact lost	Place inverted torpedo marker in hex ahead of sub bow (hex B on Submarine Log sheet), pointing in the same direction (this marker IS the target hex for escorts). Remove any inverted sub markers. This marker remains on board till new sub markers appear. This marker is not placed if the firing sub was already visible or in radar/sonar contact.
10	End of turn	Consult Escort Action Table.
NOTE: The actual submarine remains on the board at all times. Only one sub or torpedo marker may be on board for each submarine in play. If the submarine is visible at start, mark it accordingly and consult the Escort Action Table before beginning game.		

104.1.4 A submarine is visible when:

- a) it is on the surface or at 25-foot depth during daylight.
- b) it is on the surface or at 25-foot depth at night *and* is within four hexes of an enemy vessel (including merchantmen) or within seven hexes of a vessel torpedoed on the previous turn and which is still afloat.
- c) it has been sighted under Rule 47.0.

104.1.5 Submarines may only attack vessels visible to the sub under the Submarine Visibility Table (see Data Cards).

104.2 Escort Movement:

104.2.1 Escort movement is automatic and is determined by the Escort Action Table (which itself is based on the Submarine Detection Table's results). The Escort Action Table is consulted at the end of each turn, and will determine movement for the escorts for the coming turn.

ESCORT ACTION TABLE		
Movement of escorts on the following turn is determined by this table at the end of Phase 10 of the preceding turn. Placement of submarine markers, which determines the result on this table, is done using the Submarine Detection Table.		
Sub Marker	Mode	Escort Action
None	1	No previous sightings. Escorts proceed in formation, moving in unison with convoy. All escorts conduct sonar and radar search.
Torpedo Marker	2	Torpedoes launched. Escorts begin RADIAL MOVEMENT at Search Speed, using marker as target hex.
Sub Marker, Escort Color	3	Sonar/radar sighting. Escorts begin RADIAL MOVEMENT, full speed--with the exception of escorts with sonar contact, which move in RADIAL MOVEMENT at Search Speed.
Sub Marker, Sub Color	4	Submarine sighted (25-foot depth). Escorts begin RADIAL MOVEMENT, full speed.
Sub Marker, Sub Color (surfaced)	5	Submarine on surface. Escorts begin DIAMETER MOVEMENT, full speed. All surface vessels open fire whenever LOS permits. Nearest escort to sub this turn begins RADIAL MOVEMENT, orients on bow of sub (not target hex), and will RAM if sub hasn't submerged by then.
Sub Marker, Inverted	6	Contact lost. Begin DIAMETER MOVEMENT, Search Speed.
	7	GAME END. Begin prolonged attack procedure. Escorts are selected for this in order of VP value, as permitted by Rule 34.7.
Two Markers	Double	A second sub is sighted. The nearest escorts (half of them, rounded down) proceed according to appropriate mode.
Three Markers	Triple	A third sub is sighted. The nearest escorts (half of each force detailed to the other two subs) proceed according to the appropriate mode.
<i>NOTE:</i> Sonar search is always conducted by vessels at Search Speed, each turn. Radar search is always conducted by vessels having that capability, each turn.		

104.2.2 The Escort Action Table is also consulted at the beginning of the game, prior to movement. Unless the scenario actually states that contact has been made, or if the initial depth of the submarine is 25 feet or less, the escorts will begin play in *Mode 1*.

104.2.3 As detailed in the Escort Action Table, escorts move in one of three general ways:

- a) In formation. Escorts move in unison with the merchantmen or capital ships, maintaining their convoy stations. Escorts will match convoy movement exactly. They break formation only when the Escort Action Table so dictates.
- b) Radial Movement (see 105.0).
- c) Diameter Movement (see 106.0).

104.2.4 When escorts appear in a scenario alone (with no merchantmen or capital ships), they move according to the Escort Action Table. When in Mode 1, they move according to the Fleet Movement Table (Chart 104.3.1) as *Fast Convoy Speed*. The die roll for movement is done prior to each turn's movement, and is performed for the escorts in unison (i.e., one die roll only, with results applying to all ships).

104.3 Merchant Movement:

104.3.1 Merchantmen (cargo and tanker vessels) move according to the Fleet Movement Table. One die is rolled at the start of each Convoy Movement Phase and is performed *regardless of the tactical situation*. This same die roll will also apply to escorts moving in formation (Mode 1 on the Escort Action Table), but applies to merchantmen every turn regardless of what he escorts do.

FLEET MOVEMENT TABLE						
This table is rolled upon at the start of each Convoy Movement Phase and applies to all merchantmen, Capital ships, and escorts <i>moving in formation</i> .						
Convoy Type	Die Roll					
	1	2	3	4	5	6
Slow Convoy (Speed 1)	L1	R1	1	1	1L	1R
Slow Convoy (Speed 2)*	L2	R2	2	2	2L	2R
Fast Convoy (Speed 2)	L2	R2	2	2	2L	2R
Fast Convoy (Speed 3)*	L3	R3	3	3	3L	3R
Emergency Speed (Speed M)	LM	RM	M	M	ML	MR

**Advanced Game*

104.3.2 Merchantmen move and turn in unison. They maintain their relative positions in formation unless sunk or dead in the water.

104.3.3 Merchantmen will *not* collide with ships dead in the water. If an individual ship is to perform a movement directed by the Fleet Movement Table that will result in collision, the moving vessel stops the moment it comes within three hexes (inclusive) of a stopped ship (i.e., a two-hex gap) and the ship's bow is pointed at the stopped ship. The moving merchantmen halts movement at that point and remains stopped until the Fleet Movement Table dictates a movement that won't bring the bow closer to the stopped ship. Ships stopped by this rule will continue to make all turns dictated by the Fleet Movement Table (i.e., the bow will face the same direction as the remainder of the convoy.)

104.4 Capital Ship Movement:

104.4.1 Capital ships also move according to the Fleet Movement Table. Movement is made in unison with the entire convoy, as directed by the table.

104.4.2 Once torpedoes have been fired, and as long as Capital ships are not in convoy with merchantmen, Capital ships move according to the *Emergency* column on the Fleet Movement Table. When moving in Emergency mode, which begins the turn after torpedoes are fired, Capital ships increase their speed by one hex *each turn* until the maximum speed of that ship is reached. That speed will continue in effect until the end of

the scenario. One die roll for the Fleet Movement Table is made each turn, and the results followed in the appropriate column, for all Capital ships.

104.4.3 If capital ships move off the board in Emergency mode, they may not return to play.

104.4.4 Since Capital ship counters have no ID numbers, the ship's position in a convoy is to be determined by writing the ship's name across the spaces in the convoy section of the Log normally used for merchantmen. (Example: if the *Enterprise* is in Row 1, Column 1, the word "Enterprise" is written across the five boxes in the corresponding location on the Convoy/Escort Log.) Capital ships *will continue* to be shown in the escort group section in the Log; the name in the convoy section merely identifies which counter is which. Since capital ships are set up in convoy formation in solitaire play, and since they may not deviate from it unless sunk or dead in the water, this rule is necessary to distinguish Capital ships despite their lack of ID numbers.

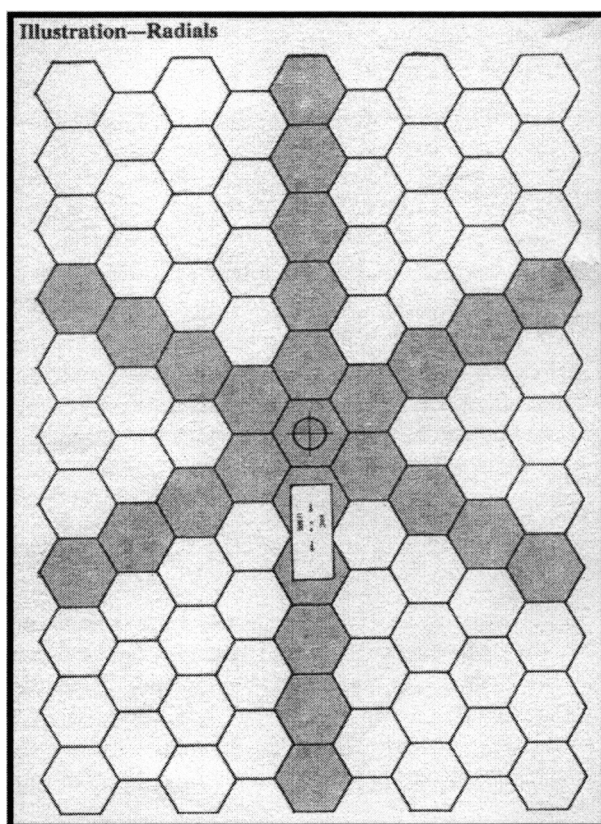
104.4.5 Capital ships perform evasive action as described in 104.3.3, and will not collide with other surface ships in any circumstance.

105.0 Radial Movement

105.1 *Radial movement* is the term applied to the procedure used to move escorts toward a submarine contact. Radial movement also describes the procedure for escort attacks under solitaire conditions.

105.1.1 Radial movement procedures are automatic; and are instigated as dictated by the Escort Action Table. These actions are mandatory in solitaire play.

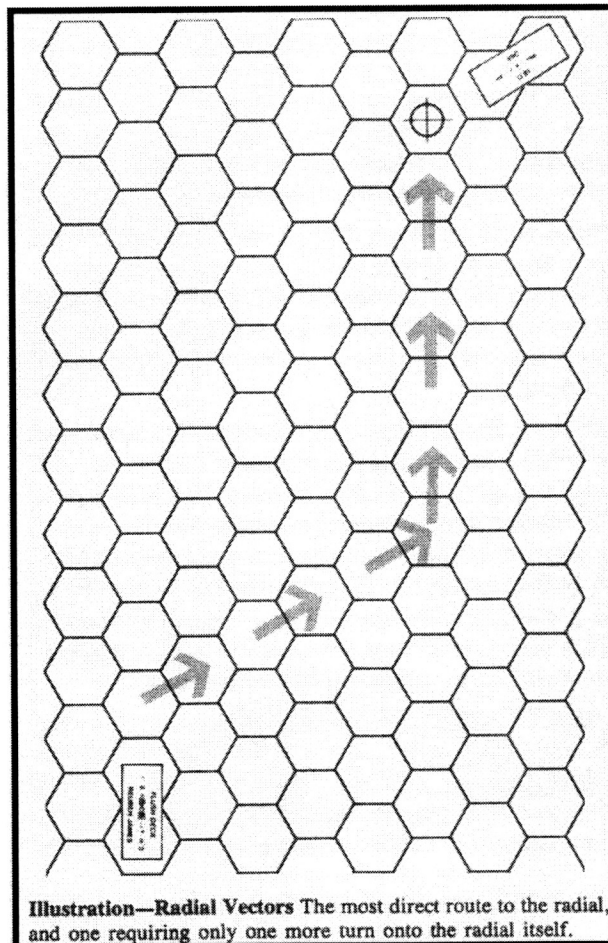
105.1.2 The "radials" used for this movement are the six straight-line hexes extending from each of the six hex-sides. These radials extend from a given *target hex* in all directions towards the board-edges.



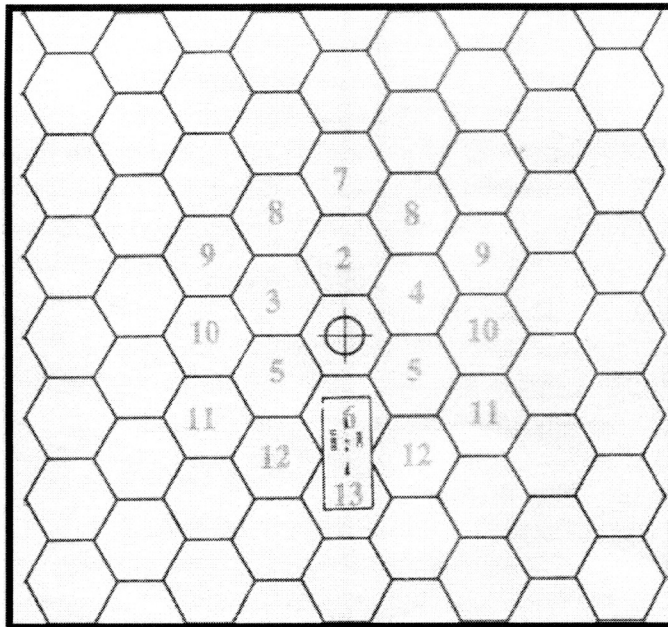
Radials—Note the target hex in front of the submarine.

105.1.3 A "target hex" is one of two locations indicating a point of aim for the escort--either one hex ahead of the bow of a submarine marker, *or* the point of launch of torpedoes (hex "B" on the Submarine Log sheet in all cases). The submarine markers described in Rule 104.1.3 are used to indicate the target hex.

105.1.4 A *radial vector* is the route to be followed to enter a radial; the vector will bring the escort onto the path with only one turn necessary to follow the radial to the target hex (see illustration). Vectors are 60 degrees off the radial itself.



105.1.5 An *assault zone* is the area centered on the target hex and extending two hexes in all directions (see illustration).

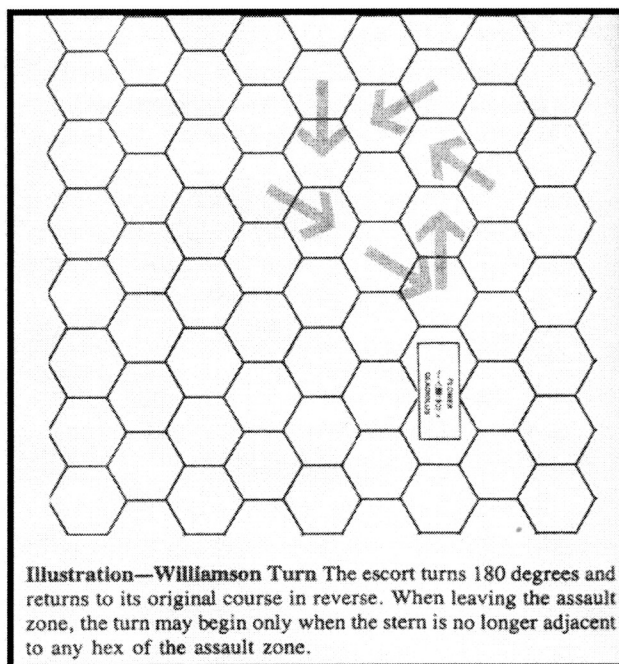


Assault Zones-- priority target is marked with crosshairs.

Other hexes are ranked in order of importance.

This chart is a good representation of where to drop depth charges while playing solitaire or against real opponents.

105.2 A "Williamson turn" is a movement which will bring an escort around 180 degrees (the opposite facing) and *back into the same row of hexes in which it began the maneuver* (see illustration).



105.3 Movement Performance:

105.3.1 Radial movement begins when directed by the Escort Action Table. This determination is made at the end of each turn.

105.3.2 Radial movement proceeds as follows:

- a) Each escort turns (in the general direction of the target hex) till it is on a vector to the *nearest* radial. Escorts then move along the vector in a straight line until the radial is reached. The escorts' turns and movement must comply with *SUBMARINE* rules (i.e. one turn per hex).
- b) The escort, on reaching the radial or if already on it, heads directly toward the target hex. (If the proper vector has been followed, only one 60-degree change of facing will be necessary.)
- c) The escort proceeds in a straight line to the assault zone, aiming at the target hex.

105.3.3 If the escort is already on a radial, but cannot make a legal turn onto the course to the target hex (i.e., facing away from the target hex), the escort performs a Williamson turn on its initial course for the turn and proceeds thus until it is on the radial and on course for the target hex.

105.3.4 When the target hex changes due to new sightings, each escort will correct its movement by the same method as described above (i.e., following a new vector and radial.)

105.3.5 When performing radial movement, escorts speed up to maximum speed (in the progression described by Rules 8.2.1 and 31.1) unless the Escort Action Table states otherwise. Search Speed, when mentioned on that table, is always *three* hexes per turn.

105.4 Escort Attack:

105.4.1 Escorts Attack automatically when they reach the assault zone, as long as radial movement is in effect. All weapons able to reach the assault zone (ATW, depth charges, K-guns) do so, up to their maximum and in as many hexes of the assault zone that can be reached. This is done regardless of the escort's speed. Remember that the assault zone is the target hex and all hexes in a two-hex radius -- effectively, the range of movement of a submerged submarine.

105.4.2 An escort may, in solitaire play, steam across hexes undergoing Hedgehog attack. *No* escort may steam across a hex undergoing depth charge or K-gun attack.

105.4.3 ATW does not take effect immediately in solitaire play. ATW attacks are resolved along with the depth charges in the Anti-Submarine Attack Resolution Phase.

105.4.4 Priority of Attacks: Where range and escort characteristics permit (see 105.4.6), assault zone hexes are to be attacked in the following priority, with at least one ATW, depth charge or K-gun each:

- a) the target hex
- b) the hexes adjacent to the target hex, starting with the hex ahead of the target hex (i.e., two hexes ahead of the sub marker's bow), then the two hexes adjacent to that hex and the target hex. Last in priority of the inner circle of the assault zone is the bow hex of the sub marker (i.e., the hex behind the target hex.)
- c) the hexes at a distance of two from the target hex, starting with the hex directly in front of the sub marker, then proceeding around the circle of hexes evenly in both directions from front to rear.

105.4.5 Order of Attacks: The nearest escort to the target hex (distance counted from the escort's bow) moves first in the Escort Movement Phase. The other escorts move in order of proximity. Where two escorts are equally near, the escort whose bow points the closest to the target hex moves first.

105.4.6 The Attack: each escort moves on a straight line through the assault zone, firing all possible ATW, K-guns and depth charges in such a manner as to put at least one such weapon in all reachable assault zone hexes. When sufficient hexes cannot be reached to allow one-attack-per-hex, weapons will be fired as evenly as possible (e.g., when six depth charges can only reach three assault zone hexes, the escort drops two in each of the available hexes). In all cases, the escort will adhere as closely as possible to the priorities of Rule 105.4.3.

105.4.7 All movement and attack by escorts is final; no die rolls may be made again nor movement retraced.

105.4.8 Escorts may not move through hexes containing previously-moved escorts or depth charges dropped by same. Escorts may deviate from Rule 105.4.6 but will, *in all cases* move parallel to its radial and as close to the target hex as possible.

105.4.9 Escorts move through the assault zone and leave it on the same course they entered it. When the stern of the escort is outside the assault zone, the escort executes a Williamson turn and launches a new attack. Escorts will attack repeatedly, so long as Radial movement is in effect.

105.4.10 If an escort cannot reach enough assault zone hexes to spread its attacks evenly, (especially if K-guns are involved) and no vacant assault zone hexes can be reached, K-guns and ATW may be fired into hexes already containing other attack markers.

105.4.11 Escorts may *only* attack assault zone hexes, *only* when Radial movement is underway, and *must* fire all weapons able to reach the assault zone (see Escort Action Table for surface gunfire, which is not used in Radial movement and not defined herein as "weaponry"). Escorts may not be moved so as to collide with other escorts, or in violation of Rule 105.4.8. Escorts may *not* fire ATW into hexes occupied by other surface vessels.

105.4.12 Attacks are resolved as prescribed by the *SUBMARINE* rules, except that the Submarine Depth Combat Table is rolled *first* for all depth charge and K-gun attacks (including Squid). This represents the enemy's guess as to your depth.

SUBMARINE DEPTH COMBAT TABLE	
This table is rolled on for each depth charge or squid attack launched. This must be done prior to resolution of attack and replaces the announcing of depth by Escort Player. Attacks are then resolved normally, or are not rolled for in the event of a "Miss" at all.	
Dice Roll	Depth Charge Detonation
54-66	Same depth as submarine
41-53	Within 25 feet of submarine
24-36	Within 50 feet of submarine
11-23	Miss. No attack.

106.0 Diameter Movement

106.1 *Diameter movement* is a maneuver used when escorts move *around* a target hex rather than towards it. This is used especially when firing on a surfaced submarine and, in any event, is implemented by the Escort Action Table.

106.1.1 A "diameter", for the purposes of this game, is a circle of hexes that is an equal distance at all points from the target hex. A diameter of six, for example, is that circle of hexes that is six hexes from the target hex in all directions (the circle forming a large hexagon).

106.1.2 Diameter movement is executed by following the diameter and never having the bow hex leaving the path (the bow hex must always remain at the same distance as dictated). This means a 60-degree turn at each radial (as a glance at the illustration will show).

106.2 Movement Procedure:

106.2.1 Diameter movement is directed by the Escort Action Table, and continues as long as the Table directs.

106.2.2 Escorts follow, in order, their respective vectors and/or radials toward the target hex as in Radial movement (Rule 105.3.2). However, upon reaching the assigned diameter distance, each escort will turn and follow the diameter hexes in a *counter-clockwise* direction.

106.2.3 In the diameter pattern, all vessels move at either Search Speed or, when the Escort Action Table is calling for "Full Speed," at the maximum speed of the *slowest* ship in the diameter.

106.2.4 The diameter to be followed is a distance of 12 hexes from the target hex. If a vessel commences Diameter movement already within that distance, it moves to and follows a diameter of six hexes.

107.0 Night Illumination

107.1 Section 107.0 applies whenever Section 25.0 of the original *SUBMARINE* rules is to be followed, and *only* in night scenarios.

107.1.1 Starshells are fired whenever torpedoes or a submarine is detected. This is automatic and is spelled out in detail on the Escort Action Table.

107.1.2 Starshells are fired by the escort *furthest* from the target hex.

107.1.3 Starshells are fired in the target hex and three hexes ahead of it (in the direction of the sub marker or torpedo). Line of sight considerations do not apply when firing starshells; they may be fired over one or more surface ships.

107.2 Tankers and Cargo Ships:

107.2.1 Visibility of submarines at night is described in Rule 104.1.3.

107.2.2 Daylight conditions prevail for a seven-hex radius around any tanker torpedoed on any previous turn (regardless of whether still afloat); cargo ships so illuminate an area only under the provisions of 104.1.3.

107.2.3 Daylight visibility prevails within 20 hexes of any tanker torpedoed while containing aviation fuel. These conditions will prevail until the turn after the ship sinks, ending with the Star Shell Phase. Mark the location until then with a starshell counter in both hexes of the tanker.

108.0 Evasive Action and Searches

108.1 Ships:

108.1.1 Escorts may not move into any hex that a merchantmen might enter on its move that turn, as determined by the Fleet Movement Table. In this case, Escorts may deviate from radials and vectors but must parallel them as close as possible.

108.1.2 Escorts may not move into any hex that a merchantmen's stern might pivot into--that is to say, the hex on either side of the ship adjoining both bow and stern.

108.1.3 Escorts may not move into any hex that a Capital ship might enter on its move that turn, as indicated by the Fleet Movement table, nor any hex that a Capital ship's stern might pivot into (as in Rule 108.1.2).

108.1.4 Capital ships and merchantmen move in unison in the solitaire game, so no collision is possible. Avoidance of vessels dead in the water is discussed in Rules 104.3.2 and 104.3.3.

108.1.5 Surfaced submarines may be rammed by merchantmen and Capital ships if the Fleet Movement Table happens to dictate such. Ramming of surfaced subs by escorts is not only possible, but mandatory under the

Escort Action Table. However, only one escort may ram an individual submarine.

108.2 Torpedoes:

108.2.1 No escort may intentionally steam over a torpedo, nor end its move directly ahead of one, when performing Radial or Diameter movement. Escorts will instead avoid such an event by leaving its vector, radial or diameter and paralleling its former path as close as possible, or by slowing to the point that it will not be in the path.

108.2.2 Capital ships and merchantmen move according to the Fleet Movement Table regardless of where torpedoes may be. The first firing of torpedoes in a scenario will trigger *Emergency* movement for Capital ships; no other response is possible.

108.3 Search:

108.3.1 All ships possessing sonar, and moving at speeds permitting search, are required to do so each turn. The player may dispense with this if all submarines are surfaced or sunk.

108.3.2 All ships possessing radar must conduct radar search each turn. The player may dispense with this if all submarines are at depths of 50 feet or greater.

Webmaster's Notes...

These rules are a great way for the beginning player to learn the rules of Submarine and to learn strategy as well. Be sure to play a few solo games to get a better feel for the system mechanics. *Also... this article is copyrighted material. It is intended for you personal and/or educational use only Copying and selling the information is most likely against the law... so don't do it! Many thanks to Robert Harmon for the excellent Solitaire Rules. Courtesy: General Magazine, 22-4.*