There are four types of ASDIC, Mk1 was introduced into LIT Destroyers and Destroyer Escorts. It can also be fitted to Trawlers and Mothballed ships (MB) when they are converted. This has a chance to notify a ship that a submarine is within its 90 degree forward arc (45 degrees either side of its centreline), the ship operating it cannot travel faster than 12 knots if it wishes to hunt for submarines. A modified form of the Mk1 (called Mk2) is fitted to all PLT and later designs, it has the dome of a Mk1 and the display of a Mk3 and can be used at speeds up to 15 knots and will also give its approximate range. The ship will have to turn to both sides to narrow down the angle to the submarine or use multiple ships to triangulate the target. Mk2 can also be fitted to Trawlers and Mothballed destroyers (MB).

An improved Mk3 version is available to be fitted to ships started after 1940.x.1. It can tell the ship which 45 degree arc the target is in. It can also warn of more than one target in the 90-degree arc, and give an approximate idea of the depth (2 out of the 3 possible depths Shallow/Medium and Deep), the ship using it may also travel up to 18 knots. It is also easier to spot the target.

A final improved Mk4 version will be available to be fitted to ships started after 1942.x.1 which can tell the ship which 15 degree arc the target is in and the correct depth and a more accurate distance to the target. It can be used at speeds up to 21 knots.

In all systems the ASDIC will report on a running torpedo (if there is one) as the primary report rather than the actual submarine, though it will report the presence of the submarine if it is a Mk3 or 4. The operators won’t know that the main report is for a torpedo though.

Marks 3 and 4 cannot be fitted to Trawlers because of the size of the equipment but they can be retro-fitted to all other applicable vessel types. See the rules for Upgrading Ships During the War XXXX.

Associated with the ASDIC systems are the Depth Charge throwers. DCs from the LIT period up to 1940.x.1 have 5 DCs in the pattern, and up to 6 patterns (attacks against a submarine) can be made before the ship needs to be reloaded. All 5 DCs need to have the same depth setting, one out of Shallow, Medium or Deep. From the start of the PLT period 10 patterns of 5 can be mounted.

From 1940.x.1 a new 10 pattern thrower is available. Up to 12 patterns can be carried on the ship before it needs to be reloaded. 5 of the DCs can be set for one depth and the other 5 for a different depth, though all 10 could be set at the same depth.

From 1942.x.1 onwards a 15 pattern thrower is available, up to 10 patterns can be carried. 5 DCs can be set at each of the three depths, or 10 could be set at one depth and 5 at another or all 15 could be set at a single depth.

Rules to use ASDIC/DC XXXX move to combat rules

The Mk 1 ASDIC system only works if the ship is travelling at 12knots or less.

XXXX add to the TN if travelling faster than this – see notebook in the bedroom

If a submarine or torpedo is in the 90 degree forward arc (45 degrees either side of the centreline) of a ship with an active ASDIC system and within 1500 yards of the ship, then the referee rolls one exploding d10. Add one to the dice if the submarine/torpedo is within the outer 15 degrees of this arc on either side or the outer 500 yards of the range (add 2 if both are true), subtract 1 if it is within the inner 15 degrees either side of the centreline or within 500 yards of the targeting ship (2 if both are true). If the submarine is within 500 yards but in the outer 15 degrees then there is no change to the dice (add 1 and subtract 1). Note if the ASDIC is active the submarine commander knows the bearing to the ship and its approximate range – give or take d10\*20 yards. On a result of less than 4 the object has been spotted – if there is both a submarine and a torpedo within the arc and range then the torpedo is the target that is reported. No other information is given other than that a submerged target has been spotted.

The Mk2 works in the same way but has a range of 2000 yards and may be used up to a speed of 15 knots. If a torpedo or a submarine is spotted, tell the ship commander which 1000 yard segment the object is in – there are only 2 of them (it’s an arc of 90 degrees and 1000 yards wide), but don’t tell them what the object is.

Mk3, only works if the ship is travelling at 18 knots or less, otherwise as above but the maximum range is 3000 yards, if within the outer 1000 yards or the outer 15 degrees then add 1 to the dice (2 if both are true), if within the inner 1000 yards or the inner 15 degrees then subtract 1 as before (2 if both are true). On a result of less than 5 the object has been spotted – if multiple objects eg a torpedo and a submarine then roll for each and give the information for all that are spotted if applicable. Report the 45 degree side of the centreline that the objects are in, and also the real depth and one other adjacent depth determined by a 50/50 roll if it is not obvious. If it’s at shallow then it can only be shallow/medium, if it’s at deep then it can only be medium/deep, if it’s at medium then roll for shallow or deep. If the submarine is running awash or at periscope level then it is considered to be at shallow depth. Tell the ship commander which 500 yard and 45 degree segment the object is in (but not what the object is), there are 12 possible segments.

Mk 4, only works if the ship is travelling at 21 knots or less, on a result of less than 6 the object has been spotted, otherwise treat it as a Mk 3. Report the correct depth that all of the objects are in if they are spotted. Tell the ship commander which 250 yard and 15 degree segment the objects are in – there are 72 possible segments.

On a second move if an object was spotted the previous move then subtract 2 from the dice. If the submarine sinks to the bottom and stops all movement then add 4 to the dice. After being DC’d, the submarine may stop all movement and release some oil and debris and add a further 2 to the dice – it can combine this with sitting on the bottom. It can only release debris twice a day and loses a half day’s worth of cruising range each time it does this. If the ship fails to spot the target on the move after it releases debris then it will believe that it has sunk the submarine and not search for it again unless it is spotted again by a different ship.

Once the ship commander is confident that they have localised the submarine they select the aim point where they want to drop the DCs. The referee marks this on a sheet of graph paper and also the actual location of the submarine. The ship commander selects the depth or depths to set the DCs, runs over the aim point and drop the DCs.

DCs which are two depths from the submarine (deep when the submarine is at shallow, or vice versa) have no effect (the referee might still want to roll dice so that the ship commander doesn’t get extra information from the dice not being rolled). The same is true for DCs dropped 200 yards or more from the submarine. If dropped at the same level or one level away from the submarine then there is a chance to damage it. If dropped below the submarine then it may force the submarine to the surface though it can dive again one move later if it is still watertight.

For patterns that are at the same level as the submarine, roll one non-exploding dice for each group of 5 DCs to give the distance from the aim point that the DCs explode, multiply it by 10 to give a number ranging from 10 to 100 yards. Roll a d8 to give a compass bearing (N/NE/E/SE/S/SW/W/NW). Plot the actual point of impact the number of yards from the aim point in the direction given by the d8. Measure the actual distance from the impact point to the real location of the submarine. If this range is less than 40 then fill two Damage Blocks on the submarine, if it is less than 80 then fill one, less than 120 fill half a Block and if less than 160 fill a quarter of a block.

If the pattern is one level away from the submarine, then perform the above calculations but add 50 yards to the final figure. If dropped at the level below the submarine and damage is actually caused then the submarine is forced up one level. If this happens at shallow depth then they are forced to the surface and must spend at least one move on the surface. They can dive again after spending one whole move on the surface as long as there is no damage in their second damage block.

If a submarine receives damage that completely fills its first damage block and has at least one point in the second then it is no longer watertight. It must either do an emergency surface to either continue the fight on the surface or surrender, or it will sink at the end of the following move. During that following move (before it sinks) it can make any applicable turn, change depth or fire torpedoes (or guns if awash or surfaced), but first must roll a 7+ morale check on a d10 – the captain is effectively committing suicide. A surfaced submarine with at least one point of damage in its second Damage Block cannot dive but may continue fighting if it passes a 7+ morale check and will not sink. A surfaced submarine that is fighting on can be boarded (one move to lower a boat, two moves to load the boarding party into it, then the travel time to the submarine, one move to exit the boat on to the submarine deck. If the hatches are battened down then they may lay charges – these go off 2 moves later sinking the submarine at the end of that move. If the hatches are not battened down and the submarine crew are fighting the guns then the boat will have to survive the AAA fire but can fire back at the crew. If the boat reaches the submarine they can force it to surrender 3 moves after they get on the deck. Of course the ship can continue firing on the submarine until the boat is one move away from reaching it.

Before or after firing (but not both), submarines can perform any or all of the following: turn up to 45 degrees, increase speed XXXX by 3 knot, reduce speed by up to 6 knots, change depth by 1 level (shallow to periscope or awash or surfaced is considered to be one level of change), perform an emergency surface. If performing an emergency surface they can reach the surface in one move if they are medium depth or two moves if they are deep. They must remain on the surface for five moves after an emergency surface before they can dive again, if that is possible (they may be too badly damaged). To change depth (other than an emergency surface) or turn they must be moving at 3 knots or more.

If a submarine is at periscope depth or higher (awash or surfaced), then any escort can attempt to ram it. The escort must pass through the location where the submarine is – split the move into phases depending on the speed of the submarine and allow the escort to move after the submarine. The escort may turn twice by up to 45 degrees each time, once in the final phase and once in the middle phase (the previous one if there is an even number of phases eg phase 2 out of 4). If the submarine and the escort are within 50 yards of each other at the end of any phase then the escort has successfully rammed the submarine, however if the ram occurs on the last phase then the submarine may fire guns or torpedoes as it is rammed. Fill two Damage Blocks on the submarine and 1/4 of a damage block for every 6 knots (or part of six knots) that the escort was travelling at on the escort. If that damage fills the current Damage Block with at least one in the next Damage Block then add another Damage Block’s worth of damage. If the same escort later rams a second submarine before it is repaired, then add two Damage Block’s worth of damage if this occurs again.

Example, an undamaged destroyer rams a submarine at 27 knots and fills the first Damage Block and ¼ of the next, therefore adds another Damage Block to make 2 and ¼ full. Later it rams another submarine but at 15 knots adding a further ¾ of a Damage Block for a total of 3 Damage Blocks full (but none in the fourth). It therefore does not get the extra two Damage Blocks that it would have done if it received 1 more point of damage. Had either submarine done one point of damage with guns as they were rammed then the extra two Damage Blocks would have been added and the ship would have 5 Damage Blocks full and at least 1 point in the 6th, so would be in serious problems.

When submarines fire torpedoes at an enemy, add one to the dice roll for every move (except the move that they fired) that they have observed the target through the periscope. Add 2 for every move (except the move that they fired) that they have observed the target while awash or surfaced.