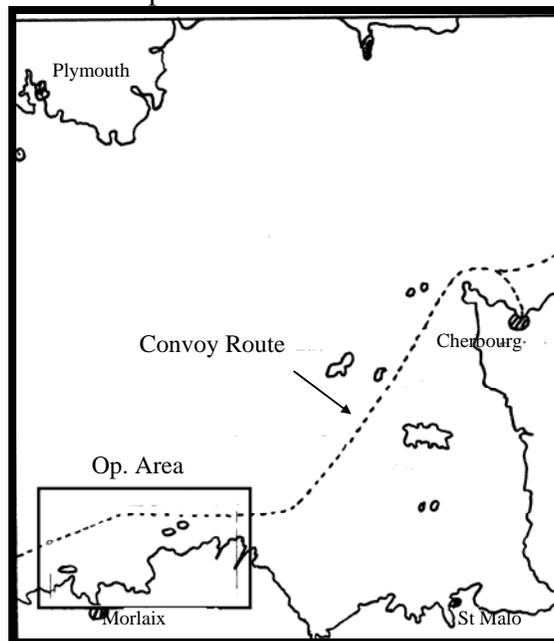


Naval Night Fighting In World War II

During World War II there were a number of incidents when under cover of darkness decisive victories were scored over superior forces. I must admit to a particular interest in these actions. However, few rules reflect the effect of confusion and training in such engagements. I intended to give accounts of a number of actions and then to try to identify the salient points for wargamers to consider for modifications in their rules. During research I found, perhaps not entirely surprisingly that the problems, errors and solutions were much the same for all the major participants and therefore decided to concentrate upon two lesser known actions in the channel in 1943 - 44.

Operation Tunnel : 23rd October 1943

This action came about because of the Plymouth Commands efforts to intercept the blockade runner *Munsterland* en route from Brest to Cherbourg. The Command had other priorities, the primary one being the escort of coastal convoys, subsequently forces available were generally a few Hunt Class Destroyers, with guest appearances from Fleet Destroyers and Cruisers. This had led to the adoption of operational orders; code named Tunnel that were designed so that any ship could be issued them and take part at short notice. Essentially date, time and position were changed but little else. Thus the Germans were given the opportunity to study at close quarters the tactics employed and develop their counters.



Blockade runners were difficult to catch as they generally moved at night in short hops from base to base. Their escort was always strong, consisting of a Cover Group of between four to six T-Boats and a close escort of Sperrbrecher, Minesweepers and as many coastal units that could be mustered. They were able to choose their time of sailing and were operating with experienced units. They also had the advantage of shorebased radar stations. Their objectives were quite simple in principle, contact with any enemy was to be avoided if possible. If not the Covering Force was to draw the enemy away from the convoy attacking any targets of opportunity. The convoy was to go close inshore and make for the nearest harbour. Following usual practice

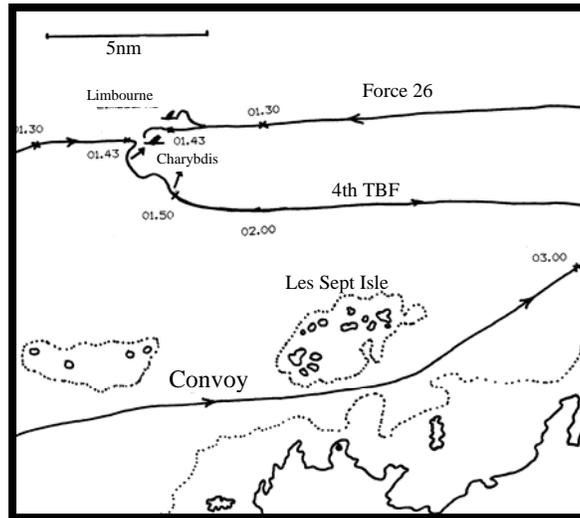
the T-Boats of the 4th TB Flotilla were concentrated at Brest to form the Cover Group while two patrol vessels and six minesweepers formed the close escort.

Available at Plymouth were the cruiser *Charybdis* and destroyers *Grenville*, *Rocket* with three Hunts of the 15th Flotilla and one from the 1st Flotilla. Apart from the diverse composition of the force, command had devolved upon Captain Voeleker of *Charybdis* who had not been in command of a surface strike force before. His ship had spent the previous months escorting aircraft carriers in the Mediterranean. The Senior Destroyer Officer in *Limbourne* had only recently joined the command and had missed most of the briefing due to other duties.

Because of weather conditions and moonlight it was decided to sweep from east to west which made it likely that first contact would be with the Cover Group, but would avoid a long tail chase after the convoy. As the ships had not previously worked together it was decided that the force would operate in a single line ahead under the direction of the Senior Officer. In the event of a chase, in which Hunts were unable to keep up, they would detach and sweep to the west. No mention was made of the target vessel or that T-Boats were likely to be present in some numbers. The commanders were under the impression that this was a 'normal' patrol.

The force left harbour at 19.00hrs on the 22nd October, following an uneventful passage to the patrol area the formation started the sweep to the west at 00.30hrs at a speed of 13 knots. At this stage visibility was poor to the west but was clearing eastwards behind them. They were on a reciprocal course but four miles north of the convoy route. The shore station at Ploumanach detected the formation on its approach and noted the change of course to the west, a general warning was given at approximately 00.45/23rd. Knowing the position, course and strength of the British force was not surprisingly a great bonus, thus the 4th Flotilla moved away from the convoy to the north proposing to take up position five miles north of the convoy route on a parallel course. The British force would be silhouetted against the SE horizon. The intention was then to launch a torpedo attack and retire drawing the surviving British ships with them.

Talybont and *Wensleydale* picked up the warning and tactical orders on their interception equipment and duly passed this information to *Charybdis* indicating that at least five and possibly six units were in close proximity. At 01.30 *Charybdis* made radar contact at 14,000yds ahead. Unfortunately, she failed to pass on this contact, probably assuming that the destroyers also had it. Thus at 01.30 *Charybdis* had definite information on the enemy position but was probably unaware of their strength, the Hunts were aware that five or six enemy torpedo boats were close but were unaware of their position. At 01.35, *Charybdis* signalled the enemy's position by now merely 8,800 yds off on a bearing of 270 degrees. Course was held with the intention of closing to 6,000 yds, at 01.38 *T23* spotted the British. Three minutes later the Germans intercepted a spotting report of two destroyers at 12,000 yds. Allowing for errors in range it seemed unlikely that surprise would be achieved on either side. There was therefore enormous consternation when at 01.43 a cruiser was spotted at 2000yds virtually straight ahead with two destroyers following her. *T23* made an emergency turn to starboard and launched her full complement of torpedoes.



Unfortunately for the British organisation broke down at this critical moment. At 01.42 a signal was made from *Charybdis* to turn the formation starboard and to increase speed together, unfortunately the signal was missed by all but one of the following ships. At 01.45 *Charybdis* opened fire with starshell, at the same time torpedo tracks were spotted, despite turning briskly to Port, at least one hit disabling the ship. In making a sharp port turn while the other ships obeyed the earlier order to turn starboard, *Charybdis* was placed to the port bow approximately 4000yds from the fourth in line *Limbourne*, who assumed she was an enemy and illuminated her with rockets. This was doubly unfortunate as it attracted more torpedoes from *T22*, *T26* and *T27* at *Charybdis* and *Limbourne* which was by this time between them and the cruiser. By this stage the British were more concerned with avoiding collision than anything else, as in attempting to conform to the leaders movements and avoiding torpedoes control had disintegrated. At 01.52 *Limbourne* was hit by a torpedo and shortly afterwards another hit *Charybdis*.

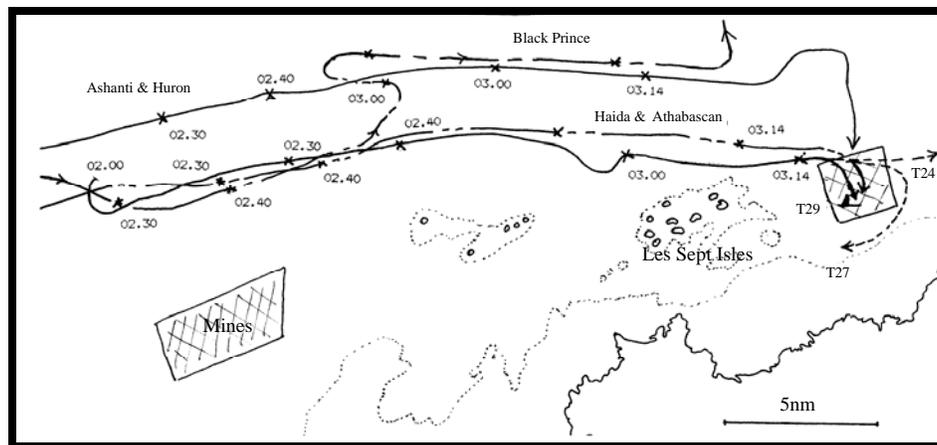
The remaining British ships withdrew to the north west to reform. Some delay was experienced as the Captain of *Grenville* was unaware that he was now in command. The force had reformed by 03.15, after detaching two of the Hunts to pick up survivors from *Charybdis* and leaving one to assist the *Limbourne*. *Rocket* and *Grenville* swept westwards after the convoy, after failing to make contact they returned. The crew was removed from *Limbourne* and the ship was scuttled. The force left the area at 06.30 hours.

The 4th Flotilla rejoined the convoy and successfully escorted it into Lezardrieux. Ironically *Munsterland* was later sunk by long range guns as she passed through the Dover Strait during the night of 20th January 1944. This action was significant for it spurred on the formation of a properly trained and equipped striking force in the channel. This was based upon the cruisers *Black Prince* and *Bellona* with the 10th Destroyer Flotilla, whose action against the torpedo boats in April 1944 is described

If at first you don't succeed.....

In January 1944 a striking force known as Force 26 was formed to take on the Torpedo Boats in the Channel. Based upon the 10th Destroyer Flotilla¹ backed up by the cruisers *Bellona* and *Black Prince*. The whole force exercised together with particular emphasis on night actions and plotting. As German tactics were by now quite well known a new system was adopted to counteract them. Instead of a large force under the tight control of the Senior Officer, a smaller force was employed which was further divided in action into sub - divisions. The destroyers formed two sub-divisions (S.D) placed approximately a mile and a half at 40° to the port and starboard bow of the cruiser. In combat the cruiser would remain astern providing long range fire and more importantly illumination, allowing the destroyers to concentrate upon offensive action. The angle of approach was to be as fine as possible to reduce the risk from torpedoes. To place themselves into a position of torpedo advantage the Germans would have to close with either of the destroyer sub-divisions.

Force 26 was ordered to carry out a 'routine' sweep from West to East on the 25th April. Air reconnaissance was laid on but little was expected of it; such expectations were met and by 01.30/26th no aerial contact had been made. The Germans were also running an operation that night with three T-boats of the 4th Flotilla making a sally from St Malo to carry out defensive minelaying in the vicinity of Les Sept Isles after which they were to proceed to Brest.



Force 26 was picked up by shore station from about 01.00/26th hours and engaged by shore batteries (although no shell splashes were reported). The shore organisation failed to give warning in time and at 02.00 hours *Black Prince* made radar contact with the flotilla on a reciprocal course at 21,000 yards. By 02.05 the range had reduced to 18,000 yds and contact was confirmed. Shortly afterwards the Germans were plotted making a turn directly away from Force 26. In order to close with the retiring enemy Force 26 worked up to 30 knots. *Black Prince* gave the order to finally give the order to engage at 02.19 this allowed the destroyers to increase to full speed. *Black Prince* opened fire with starshell from B Turret at 13,100 yards, caught in the illumination the Germans made smoke.

¹ Part of the flotilla only Huron, Haida, Athabaskan (all RCN) and Ashanti.

Fire was first opened by the 3rd S.D at 02.25 followed shortly afterwards by *Haida* in the 2nd S.D. Unfortunately, as the 2nd S.D moved up it fouled the line for *Black Prince* who therefore turned away to starboard to open the line for A turret. Fire was directed by radar since the T-boats were only rarely visible, ironically when they returned fire sadly lacking flashless cordite. Gunnery throughout the engagement was very difficult, however, all three boats were sustaining damage to which they were unable to make effective reply. By 02.35 two were observed to be on fire. Due to a turret malfunction at 02.48, *Black Prince* was unable to continue with illumination this task devolved to *Ashanti* thence to *Huron*.

Plotting the German ships was extremely difficult. It is likely that around 02.40, *T27* peeled off to the landward side with the intention of returning to Morlaix. She was capable of only 12 knots by this time but fires had been extinguished². It is difficult to accurately establish which ship(s) made torpedo attacks but tracks were reported on *Black Prince* at 02.52³ approaching from starboard, avoiding action was taken to port. Following this, as *Black Prince* was about to turn back in support of the destroyers *Ashanti* warned her that the Germans had launched more torpedoes. Therefore she turned away, taking her further out of the action. It is likely that the tracks were of the three torpedoes launched from *T24* as the track chart at 02.57 indicates the Germans had made a turn to port which would put them almost parallel to the *Black Prince*.

At 02.57 *Black Prince* informed the destroyers that she was disengaging, although she remained in the area until 04.00 hours to cover any backtracking by German vessels. At 03.25 *Haida* made visual contact with *T29* at approximately 5200 yards apparently trying to double back, she was rapidly disabled close range fire from *Haida* and *Athabaskan*. Meanwhile, the 3rd S.D continued the pursuit of the retiring Germans, although with the loss of illumination and poor radar performance due to land masses maintaining contact proved very difficult. A course change to the east into smoke effectively lost contact compounded by a subsequent change of course to the south 'towards' the guns which brought them back to *T29* by now a wreck with the 2nd S.D in close contact.

The final phase epitomised a nasty case of too many cooks spoiling the broth due to faulty torpedo drill 16 torpedoes were fired at ranges between 800 and 2000 yards at a drifting target - none hit! To add injury to insult while reforming *Ashanti* and *Huron* collided causing minor but significant damage. However, having left *T29* sinking Force 26 turned for home at 04.00 hours. Of the others *T24* made St Malo, and *T27* Morlaix. Both had sustained moderate damage, Force 26 had only splinter and close range weapon damage in addition to that caused by the collision. In conclusion it was a clear victory although not entirely decisive, sound tactics and training had certainly paid off although relatively speaking the British/Canadian Force were still inexperienced.

² Note : *T27* was not detected when she doubled back either visually or by radar.

³ It is likely that the torpedoes reported at 02.52 were launched by *T27*.

Ships Involved in Actions Described

<u>Ship</u>	<u>Class</u>	<u>Nationality</u>	<u>Action</u>
Charybdis	Dido	British	Tunnel I
Wensleydale	Hunt III		
Limbourne			
Talybont			
Stevenstone			
Grenville	T-Class		
Rocket	R-Class		
T22	T-22 {1939 type)	German	
T23			
T25-T27			
Black Prince	Bellona	British	Tunnel II
Ashanti	Tribal		
Haida	Canadian		
Athabaskan			
Huron			
T24	As Above		
T27			
T29			

Tassafaronga : 30th November 1942

This action was the result of an attempt by the Japanese 2nd Destroyer Squadron to land supplies on Guadalcanal. The Americans had warning of the operation and were determined to intercept it. Learning from their previous errors they formed a task group under Rear Admiral Kinkaid specifically for the job, regrettably too late to allow proper training but at least briefed in the tactics to be adopted.

Good Intentions

The single line was abandoned instead a loose formation adopted, with destroyers stationed at 30° on the engaged bow of the cruisers. Two other destroyers were on picket duty ten miles ahead. In order that advantage could be taken of air reconnaissance without the fire hazard; the cruisers seaplanes were flown off to Talugi. The destroyers were given freedom to attack at opportunity then to turn away from the enemy leaving the cruisers with a free fire zone. The Japanese were to be engaged with torpedoes and only after these had hit was fire to be opened. The cruisers were to remain 12,000 yards from the enemy 'outside' effective torpedo range. Unfortunately, Rear Admiral Kinkaid was posted away and command fell to Rear Admiral Wright, who modified the plan. The van destroyers, were deployed at 20° on the port bow with the rear destroyer two miles from the leading cruiser. The pickets were omitted, and two additional vessels allocated at the last minute.

The Japanese force composed of the eight destroyers of the 2nd Destroyer Squadron under Rear Admiral Tanaka. Given the nature of the job most of the destroyers were carrying supplies leaving just two with full torpedo complements including re-loads. The others carried torpedoes in tubes without re-loads. American accounts imply that these ships were unable to launch torpedoes however, an account by Tanaka has them capable of launching torpedoes with minimal preparation.

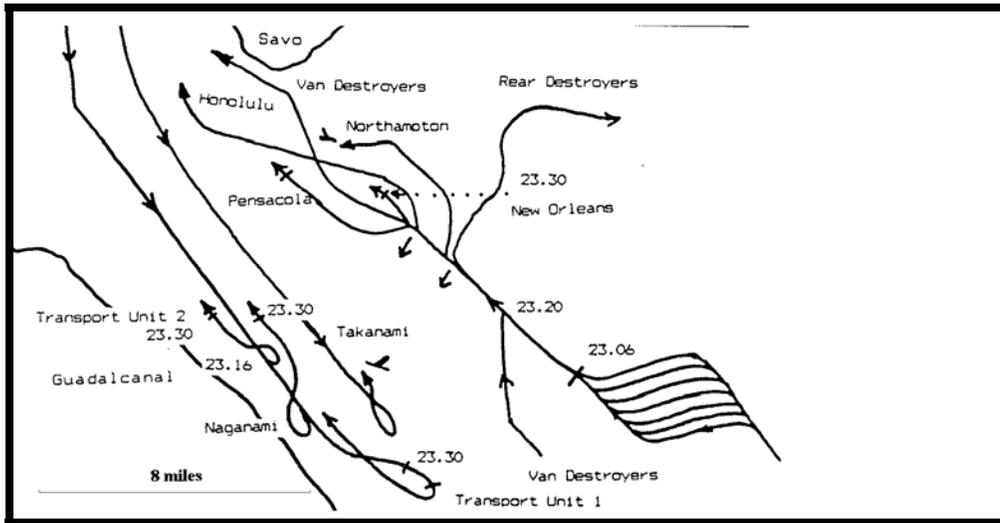
It Will be Alright on the Night.....

Shortly after Task Force 67 entered Iron Bottom Sound at 22.25, two additional destroyers were attached, as it was not possible to brief them these ships joined the end of the cruiser line. The cruisers were 1,000 yards apart, with the second in command Rear Admiral Tisdale in *Honolulu* last but one, the rear destroyers were two miles astern the cruiser line. At 22.38 a change of course took the formation directly towards Tassafaronga, this placed the ships en echelon. At 23.06 the whole formation turned starboard; following a radar contact from *Minneapolis* at 23,000 yds, thus resuming the original sailing order. Subsequently, a port turn placed the US ships parallel to the Japanese within 12,000 yards.

The Japanese Force was divided into two supply divisions the first consisting of four ships followed by a second of two. The flagship *Naganami* sailed in front of the first supply division and the destroyer *Takanami* was placed 2,000 yards on the port bow as scout. Only the *Naganami* and *Takanami* were carrying a full complement of torpedoes and were ready for immediate action. The Japanese passed west of Savo Island just before 23.00 hours, and shortly afterwards changed course to the south west deploying at this time into their respective divisions, visibility in the Sound was approximately 7,600 yards. Approaching the shore at Tassafaronga the ships carrying supplies prepared to deposit them over the side.

Thus the two formations were approaching parallel on almost reciprocal courses. The *Fletcher* spotted the Japanese ships at 23.16 and asked for permission to launch torpedoes. It took four minutes for the order to be given in which time the range was opening, finally at 23.21 torpedoes were launched from *Fletcher* and *Perkins*. Of the other destroyers *Maury* was unable to identify a target and *Drayton* with similar difficulties launched just two. The destroyers turned to join the cruiser line, very soon afterwards the order was given to open fire.

It seems likely that *Takanami* spotted the US ships at about this time, and gave a warning just before the cruiser line opened fire. Tanaka ordered unloading suspended and ships to take battle formation. Once firing opened, this was followed by "Close and Attack". Ships and divisions were forced by circumstances to take independent action, central command was impossible and ships were ultimately operating individually or in pairs. *Takanami* and *Naganami* both turned starboard; only the former managed to launch torpedoes. The 1st Transport Division increased speed and clearing torpedo arcs of stores continued on their course. The 2nd Transport Division turned to port *Suzukaze* firing torpedoes before making the turn. US gunfire concentrated upon the *Takanami* as she was the closest target, she was hit numerous times and badly damaged. The 1st Transport Division reversed course by turning Port at 23.30; over the next few minutes *Kagero*, *Kuroshio* and *Oyashio* launched torpedoes, they were followed by the *Makinami*.



The Americans, were having considerable difficulty plotting targets and although hitting the nearest destroyer, failed to engage the others. The cruiser line maintained a steady course and speed proving an easy target. At 23.27 the first torpedoes hit *Minneapolis*, over the next twenty minutes all the cruisers with the exception of *Honolulu* sustained hits. The Americans degenerated into confusion, the van destroyers lost the Japanese at 23.25 and withdrew towards Savo, where they were later joined by the *Honolulu*. As they withdrew *Drayton* caught a glimpse of the withdrawing Japanese vessels and launched torpedoes to no avail. The rear destroyers lacking the correct recognition signals came under friendly fire and withdrew to the north east.

Tanaka sent *Makinami* and *Kagero* to pick up survivors from *Takanami*. The last phase of the battle occurred when they launched the last of their torpedoes against the damaged cruisers without result at 23.52. Apart from *Northampton* the damaged ships made it to Tulagi where temporary repairs were made allowing them to return for full repairs at Pearl Harbour

Conclusion

The battle had been a clear Japanese victory for the loss of one destroyer they had sunk *Northampton* and badly damaged three other cruisers., additionally they had successfully delivered supplies. The Americans deserved better as they had started to assimilate lessons learnt, perhaps if Kinkaid had been left in charge they may have scored a tactical victory. Unfortunately the modifications to the basic plan fatally damaged it, the removal of the picket destroyers forced reliance upon radar and aircraft. The radar suffered from interference from land and aircraft were unable to take off due to the unusually calm conditions. By bringing the van destroyers closer to the cruiser line the amount of warning was minimal. This resulted in an engagement at close range with little time to react. With a closing speed of approaching 40 knots the window of opportunity for torpedo attack was narrow. This shouldn't have been a problem had the destroyers been allowed to launch at the first opportunity, by waiting for orders they lost their chance. It was perhaps for this reason and the fact that the enemy were much closer than anticipated that the cruisers opened fired earlier than planned. The two extra destroyers added nothing to TF67

these ships weren't briefed and didn't know recognition signals - always a bit of a problem in a night action.

Comments on Tactics Adopted At Night

I was surprised at the amount of common ground between the tactics adopted by the participants. The true encounter where both sides came across the other unexpectedly was extremely rare. In general actions took place because one side was aware that the other was in the area and had decided to do something about it. Sources of such information were many and varied from air reconnaissance, coast watchers and code breaking. It should be noted that while aircraft were often able to give a general warning they proved unreliable for tactical information, there are of course exceptions e.g. Savo Island, further they were known to cause more problems than they solved by inadvertently illuminating friendly vessels. Even with apparently good tactical information it was possible for forces in the know to be surprised. Shorebases took some time to confirm a contact and pass it through the various communication chains until the information reached the ships at sea.

Training in night action was essential not only in the way in which ships were to operate together but in the training of crews in spotting, plotting and engaging targets. Virtually all formations that were not properly trained lost cohesion and control, with the result that attacks were made piecemeal if at all, and that blue on blue became much more likely. Trained units required fewer signals and generally had predetermined responses, thus time in intership communication was much reduced. Significantly, when cohesion was lost, well trained units broke down to smaller subdivisions which were capable of effective independent action. Untrained units had a tendency to break-up once control was lost and took a long time to reform. During the confused period, individual units seemed inhibited from effective action. Fire control for all sides was difficult even with radar or indeed because of radar. There are numerous accounts of fire being concentrated upon the closest or largest contact. Part of the problem was due to the relatively poor resolution with some of the earlier radars which encouraged fire at shell splashes short of the target. It was necessary to check fire to re-establish contact with the target. It is probable that fire distribution and discipline was better with trained and smaller units.

Actions were either decisive very quickly or became an indecisive chase as the apparently weaker side withdrew. At Tassafaronga the time from initial contact to the Americans opening fire was 14 minutes, the first Japanese torpedo hit 7 minutes later, the final torpedoes launched to no effect at 32 minute. The first torpedo hit on *Charybdis* was 17 minutes after the first contact. In both cases most of the damage was done in the first phase of engagement and generally within ten minutes of fire either gun or torpedo fire being opened.

The Force K action seems to be the exception to the rule, first contact to disengagement took nearly two hours. However, it maybe viewed as a number of short engagements with the escort in between which the convoy was destroyed. Force K was deployed and trained to bring overwhelming fire against any warships that appeared. I am surprised that given the apparent inactivity of the convoy and the close range at which the action was fought why greater use wasn't made of torpedoes which would have been rather quicker than gunfire. Both Japanese and Germans relied upon the torpedo in this sort of action because :

- a. They were generally weaker than their opponents and gunnery would disclose their position. They had inferior radar and lacked good fire control radars.
- b. Their standard of training was higher in the type of action fought.
- c. US tactical doctrine emphasised the use of gunnery, the effective use of which required minimal evasive movement. German tactics placed British ships into positions of torpedo disadvantage thus requiring them to rely upon gunnery which led to similar tactics to the US⁴.
- d. At the ranges at which the actions were fought the torpedo was the decisive weapon as one hit would disable any ship.
- e. Doctrine and training emphasised the use of torpedoes.

In each case considered the successful action was fought by the side that had better preparation and had adopted tactics tailored to known enemy operating procedures. Tight control by a single commander in the middle or front gave way to general orders within a predetermined doctrine. This came unstuck in the longer term when the modus operandi was identified and the opposition were able to introduce countermeasures.

In general smaller formations (<5 vessels) operated better than larger ones. Larger closely grouped formations became vulnerable to torpedo attack, a loss of control if a ship missed a signal or turned out of line due to damage. Further the size of the formation meant that it covered too much space thus many of the ships were unable to engage. While multiple small formations risked piecemeal deployment, reaction times could be quicker and formations could mutually support one another either in giving warning or by keeping the enemy busy in one direction while an attack is set up in another.

Clearly however, in such an action radar or efficient lookouts supported by accurate plotting are required to keep track of friendly forces and identify enemy ones. The Allies could afford to keep forces concentrated due to effective radar, the Japanese were forced to rely upon outlying pickets. Hence their fairly standard tactic of picket destroyers or sub-divisions in larger formations. It should be noted that emission control was the order of the day. By 1943 all participants had radar detection devices, which meant that ships kept emission to a minimum until contact had been made. I was surprised at the sophisticated levels of electronic warfare carried out in this period. Many ships were equipped with jamming equipment, H.F/D.F, radio intercept and regular ELINT patrols were carried out to locate and classify shore radars.

Conclusions

- i. That training in night actions is essential.
- ii. Standard of training is absolute, but relative superiority could be decisive⁵.
- iii. Coherent doctrine is required.
- iv. Small units are better suited to night actions.
- v. Actions are usually decisive very quickly (or not at all).
- vi. Torpedoes are the decisive weapon in the surprise situation.
- vii. Gunnery is only decisive in overwhelming strength

⁴ Although documents (ADM199/1038) suggest that torpedo doctrine was not paramount.

⁵ i.e. two poorly trained formations would degenerate into total chaos very quickly

viii. Effective application of technology is required.

Night Fighting Rules : For General Quarters

The problem is representing the factors inherent in a night action in a set of rules without becoming bogged down in detail, if the actual action is finished in half an hour the game will lose the point if it takes two hours to play. I used General Quarters as the starting position but brought in some complicating factors.

Setting Up

The game requires an umpire or some method of randomising the forces involved. It is important that each side has a specific objective and victory conditions. These need not of course be the same, it could be possible for both sides to win or lose. e.g. In an operation against a blockade runner the RN sinks a minesweeper and T-Boat for no losses, the German gets the blockade runner away, both have scored a victory.

Establish weather conditions and visibility. Visibility should have two factors :

- i. When no illumination is used
- ii. Maximum possible visibility when a vessel is illuminated.
e.g. normal night visibility is 36" illuminated vessels are visible to 72".

Planning

After explaining the scenario, the commanders should decide upon and write down their standing orders. Each vessel should have a marker representing it before contact/identification is made, with a few dummies.

Method

Sketch sailing order and decide upon radar activity.
Define Standing Orders

Sequence

- i. Movement
- ii. Communication
- iii. Surprise (on initial contact)
- iv. Torpedo resolution (from previous bound)
- v. Illumination
- vi. Gunnery Combat
- vii. Launch torpedoes
- viii. Repair damage

Standing Orders

Each division must be given standing orders which must include :

- i. Formation and Division
- ii. Course
- iii. Speed
- iv. Action to be taken on first contact with unidentified ships
- v. Emission status - i.e. whether radar is active.
- vi. Challenge and response (if any).

Contact

Ships picked up by radar are identified as either large or small contacts. At this stage the detector may react to the presence of the contact according to standing orders. If standing orders do not state what is required, the formation should wait one bound before it may react. Similarly, if a picket ship makes the contact it should inform the Formation Commander before the formation as a whole may react. Any contact report is signalled to the formation commander if appropriate the opposition should be informed of signalling. The strength of any signal received should be reported, with a corresponding estimate of range in generic terms.

When ships first move into visibility it maybe necessary to do fractions of moves to ascertain the exact point of contact. If for some reason only one side is able to spot the other, irrespective of the result the formation that cannot spot will continue with its standing orders (this enables a unit with first contact to delay response).

Optional Rule

If desired formations maybe allowed to spot beyond the base visibility. A D6 roll of 6 will allow them to spot units up to 2000yds (8" GQ scale) over normal visibility. This maybe used as an advantage for skilled night fighters or for those with the benefit of radar contact.

Surprise

An Average Dice for each formation is rolled to ascertain whether or not one side has been surprised. Movement in the current bound must be completed.

Modifiers

Skilled Night Fighters	+1
Green Night Fighters	-1
Anticipating the Enemy in that Direction (i.e. due to previous contacts or reports from friends)	+2
Anticipating Friendly Approach in that Direction	-1
Radar Contact	+2
ESM	+1

Results

Even	No element of surprise both sides react as per standing orders.
Difference of 1-2	May not engage in the current bound.
Difference of 3	May not engage in the current bound or change course in the next. If contact with a picket ship only assume the picket has failed to spot the higher score.
Difference of 4+	May not fire in current bound. Following Bound : May not change course. Straddle rolls +1 If contact with a picket ship only assume the picket has failed to spot the higher score.

When there is a difference of two or more, a skilled unit with the higher score may change course during the final part of the move.

e.g. In a recent engagement fought in the channel four Hunt Class DD were attempting to intercept a convoy. They picked up the distant escort on radar of five T-Boats. One T-Boat had been placed out on picket duty and had picked up the Hunts on ESM. The Germans were therefore aware that the enemy were in the vicinity and had rough bearings on them. (but no distance). Unfortunately for the British the visibility in their direction was better than towards the Germans, the picket saw them before they saw him, although they were tracking him on radar. The picket boat decided to do nothing until the rest of his formation came into sight and no warning was given! Part of the way through the next bound both formations moved into sight. At this stage a surprise roll was made, the British anticipating the enemy in that direction and tracking on Radar got +4, the Germans also +4 due to skilled night fighters, ESM and anticipating the enemy in that direction (from ESM, note some ESM do not give direction). The British rolled a 5, the Germans 2. Complete surprise was achieved....except of course the picket who had been watching the British approaching for some while! The British brought devastating close range fire against two T-Boats and launched their few torpedoes. The Germans had two vessels wrecked, one of which blew up the was hit and sunk by a torpedo, before they were able to make effective reply They then made smoke and withdrew rapidly.

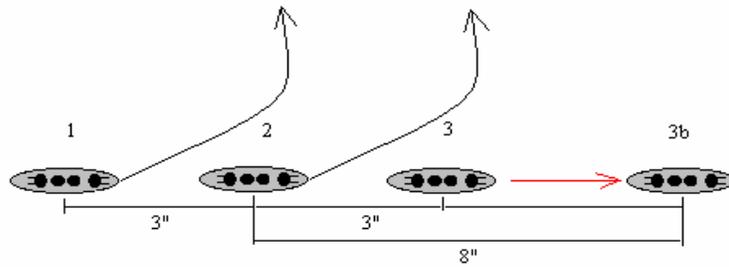
Gunnery

All weapons larger than 6" calibre illuminate when fired. (Flashless/reduced flash charges were still relatively rare during this period.) Guns of 6" and less should only have flashless/reduced flash charges when historically indicated.

Torpedo Attacks

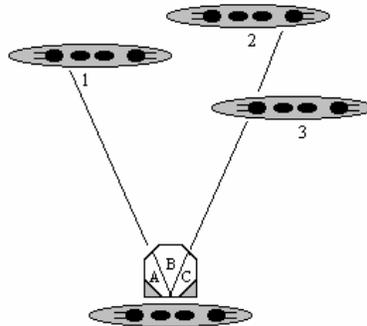
For resolving attacks on individual ships the rules probably do not require modification. While the rules allow attacks to be resolved on ships within 4" of the target vessel if the original attack has failed such attacks are only made if the course estimation is correct. This encourages the defending player to take evasive action with only the likely target vessel. Therefore, I propose that modification is made to the rules to allow area attacks, any ship in the torpedo zone must be possible victim. I suggest two possible alternatives to remedy this.

Firstly, any ships in the nominated zone within 9" of the target vessels starting position must resolve an attack upon them. Starting with the nearest vessel, obviously ships must be within the maximum range of the torpedo, subsequent attacks are resolved with deductions of any torpedoes that hit. e.g. Three cruisers in line ahead come under torpedo attack, they are moving at 9" and are 2" apart. The first one is the nominated target, the course estimation is maintain. The lead cruiser reverses course the others continue. Therefore the rear two cruisers are within 9" of the original target in its "maintain" arc. Therefore both will resolve an attack. 9" is really an arbitrary number, however since it is a fairly average move for WW2 ships it is as good as any.



Using the original rules convention, if an attack is made against ship 2 and the course estimation is 'maintain' the attack will completely miss, even though for part of the time at least ship 3 is in the danger zone.

Alternatively, a mechanism for 'browning attacks' could be adopted. Unfortunately this type of attack will require a new profile. The GQ turning profile is as good a starting point as any since it gives the extreme limits to torpedo firing arc. There are three arcs, the outer arcs between the extreme limit and point 2/4 on the turn indicator, the inner between 2/4 and 2/4. Each ship may launch its torpedoes into any one of them. i.e. a ship with 8 torpedoes in two quad mounts nominates two groups of 4. A torpedo firing marker is placed at the launch position. The marker should have the number of torpedoes and the zone into which they have been fired following movement the profile is placed at the launch site, at the torpedo resolution phase every ship in the threatened arc resolves an attack. Attacks should be resolved on the nearest vessel first, any hits reduce the number of torpedoes in the spread on the next vessel.



In this case a torpedo attack is resolved on targets 1 and 2 if the course estimation is B, on target 3 if the estimation is C, and none at all if the estimation is A.

Modifiers

In both cases standard modifiers should be used with in addition a further -2 being made. Resolve hits using the relevant table in GQ, any factor less than the '-1' result on the adjusted table will mean that hits are impossible. Attacks may only be made into areas when a target is clearly defined visually in the launching bound. i.e. no attacks into smoke because you know something is behind it.

Radar Guided Torpedo Attacks

By mid 1943, radar directed torpedo attacks were possible and although probably never very common there are indications that they were carried out operationally. In order to make a radar guided attack the target must be in radar contact for two full bounds prior to launch. Attacks will be made as usual with an additional -2 to the number of torpedoes. When the adjusted total is -1 or less use the -1 column.

Starshell

- i. Has a maximum range of 2/3 the effective range of the weapon used.
- ii. Any attack made by the battery firing star shell is reduced by 1 box to the right.
- iii. The starshell marker is placed in the desired position then a D6 is rolled.
- iv. Each starshell will last for 2 bounds.
- v. On subsequent bounds the starshell will drift down wind according to the wind strength.
- vi. Starshell ammunition is limited to two per DD/TB or 4 per cruiser and larger.
- vii. Radius of starshell is 4" reduced by 1" per sea/wind state over 4

D6 Roll	Effect	Distance Off Target
1	Right	1+ D6 inches
2	Left	
3	Under	
4	Over	
5 - 6	On Target	

Effect of Illumination

Full Illumination

- i. Vessels within the effective radius of a starshell or held by a searchlight.
- ii. Fully illuminated vessel will be visible to maximum night light visibility.
- iii. Firing vessels get -1 to straddle roll.

Silhouetted Vessels

- i. Vessels outside the burst but within twice the radius, and between the starshell and firing vessel.
- ii. Maybe seen at illuminated visibility attackers do not get straddle modifier.

Smoke Floats

Each DD/TB may carry a maximum of 2 smoke floats, these must be allocated at the beginning of the game. On deploying them a puff of smoke is placed in the starting position of the ship a single cotton wool puff is put down. On the second and subsequent move another is placed down wind in contact, on the 4th the last is removed etc. During this period the float will also drift down wind 1" per wind force.

Training

The key to successful operations at night is training. The better trained formations were less frequently surprised and reacted much more quickly if caught. Furthermore, units tended to naturally form new divisions or sub divisions if disrupted. Consequently formations and units tended to be more effective. It is therefore important that this aspect is brought into the game.

Skilled	Trained in nightfighting with recent combat experience. Only units that have worked together.
Normal	Units with basic training or alternatively skilled units thrown together at short notice.
Green	Units with minimal or no training. Adhoc formations of normal units.

Green formations suffer the following disadvantages:

- i. Fire will be concentrated upon the closest visible opponent or largest contact if non-visual radar control.
- ii. No attacks may be made by vessels out of established divisional formation except in reply to an attack from a vessel in automatic visibility.
- iii. Divisions may not be created (original divisions must be maintained).
- iv. Ships which cannot rejoin their division will attempt to retire.
- v. On a D6 roll of 4 - 6 attacks will be conducted upon any ship in the direction of incoming fire or the anticipated enemy (outside divisional formation or from another division).

Normal formations

(iii.) to (v.) above, except that attacks will only be made on approaching ships on a D6 roll of 5 - 6.

Training Status

This is meant as a rough guide for scenario builders.

RN	Established formations 1939 - 1940 are all skilled. After 1940, Mediterranean Fleet, units regularly operating in the Channel, and a few selected others are skilled. The majority of the remainder are normal. Newly formed or adhoc units at all periods maybe green.
German	Everything smaller than a destroyer and more offensive than a trawler is skilled. Everything else is normal/green.
IJNS	Until 1943 all destroyer flotillas and many other formations are skilled. After 1943 some destroyers units remain skilled, but most cruisers and above become normal.
USN	Until 1943 virtually all are green with a few normal. From 1943 a few skilled units, generally normal with some still green.
French	Mainly normal.
Italian	Mainly green.

Command and Control

To represent a larger formations difficulty in command and control, any with five or more vessels in a will plot movement at least one bound in advance.

ESM and Radar

Unless you have better information, ESM is directional, with a range 10% greater than that of the radar in use. Radar ranges can be taken from the figures supplied in GQ Part II, alternatively use the data published from Mal Wright's article on WWII Radar/ESM equipment printed in Battlefleet Vol. 20 No 2, although another good source would be Rising Sun : Command at Sea.

Example Engagement : Tassafaronga

Setting Up

Both sides should have a map marked with a grid of some sort the actual type is not very important, we use a 'dual grid' system which allows us to make map movement easily using the hex, then translating that movement via a square/rectangular grid onto the floor. (try drawing large scale hexagons on the floor) The perfect solution would be tasteful sea blue/green vinyl flooring marked in hexes.

The scale is dependent upon visibility, at Tassafaronga visibility was about 7,500 yds which using General Quarters scale of 1"= 250 yards is 30". Thus a map/floor conversion of 1mm = 1" not only keeps life simple for everyone, but allows the map to fit on a single A4 sheet. I used a hex size of 25mm, which allowed units in the centre of one to see into the centre of the next, and left enough space for complete formations. Cruising speeds should also be related to the hex size this I fully agree is a simplification but it makes the umpires job much easier.

Units are deployed in their positions at a particular time, what happens afterwards is up to the respective commanders. In order to save time, I asked the respective commanders to plot out movement for 18 games bounds, which equated to six hex. Once contact is established ships out of contact moved a hex every third bound. Units that move out of visibility are given their own map and make their move separately from their main body.

Playing Area

The gap between Savo and Guadalcanal is about 8 miles (64"), that between Savo and Florida Island about 17 miles (136"). Savo can be represented by a misshapen circle 3 miles by 4.5 miles (24" x 36") with the long axis running roughly N-S. If you have the space allow the Japanese to use either approach, if not only the gap between Savo and Guadalcanal. If they withdraw beyond the line of Savo-Cape Esperance or Savo-Florida Island they have escaped.

Notes

When briefing the US players do not mention Lamson (Mahan) or Lardner (Benson), until they have made ready. Then tell them two more destroyers have joined up, with their own commander. i.e. a late comer to the club, if this person is good at role playing so much the better, do not allow the US commander to brief this player.

The spot where the Japanese may unload should be marked on their map at the beginning of the game. For obvious reasons the US players will be unaware of this.

Both sides are anticipating contact, the Japanese are skilled, the Americans are green.

General Instructions

Sketch your sailing order with distances. Assume that the leader of the main body is in the centre of the starting hex. Outlying ships in another hex will have a separate plot. Each division must be given standing orders that will be obeyed to the letter until contact is made.

Baselines

1mm = 1"
 Cruising Speed : All Divisions 8". (3 bounds per hex)
 Full Speed : All Divisions 12". (2 bounds per hex)
 Damaged Ships : 4" (6 bounds per hex)
 Visibility : Dark 30" Illuminated 60"
 Weather : Force 1 Seaplanes cannot launch
 Start Time : 23.00 hours
 Dawn : 06.00 hours

US Briefing : Objectives

Task Force 67 must intercept and destroy the Tokyo Express before they have delivered supplies. Your ships have been briefed but have been unable to exercise together. Japanese destroyers have been located moving up the slot. Intelligence advises you that the Japanese are able to detect radar and TBS.

Radar Range Surface Search 64" (@2 Hex)
 RFC 80" Radar may ONLY aid visual gunnery attacks.

Deployment

Hex D2.

Forces Available

Minneapolis	New Orleans	Flagship
New Orleans	New Orleans	
Pensacola	Pensacola	
Honolulu	Brooklyn	2nd In Command
Northampton	Northampton	
Fletcher	Fletcher	Destroyers (Senior Captain)
Drayton	Mahan	
Maury	Gridley	
Perkins	Mahan	

Japanese Briefing : Objectives

You must off-load supplies at a spot designated at the beginning of the game. To unload approach within 6" of the shore and at <15 knots. Unloading takes two full bounds during which no offensive action maybe taken. US forces are known to be in the vicinity and are equipped with radar.

Deployment

In hex A2.

ESM

Gives warning of radar only not direction. Effective range 72" (@ 3 Hex)

Forces

Naganami	Yugumo	Flagship
Takanami	Yugumo	Picket Ship
Makinami	Yugumo	Transport Unit 1
Oyashio	Kagero	
Kuroshio	Kagero	
Kagero	Kagero	
Suzukaze	Shiratsuyu	Transport Unit 2
Kawakaze	Shiratsuyu	

Naganami and Takanami are immediately ready for action, and carry full torpedo complements. The others do not have reloads and will require a D6 roll to establish how long it takes them to prepare torpedoes for launch. 1 - 3 = 1 Bound, 4 - 6 = 2 Bounds.

Variations

With minor changes in order of battle the action can represent many of the actions off Guadalcanal. The changes that immediately spring to mind comprise the inclusion of a Japanese light cruiser as flotilla leader e.g. Sendai or Nagara. The use of a heavy cruiser division e.g. Aoba and Furutaka or Haguro and Nachi. Battleship support is unlikely for a supply mission. For the US use of other types of cruiser are the most likely e.g. Leander or Juneau to name but two. Other variations could involve use of aircraft, random submarine activity or give one side an intelligence advantage (one side is expecting contact the other isn't)

Victory Conditions

The great advantage in re-fighting an historical battle is the fact that you can judge your results against those on the day. Alternatively use the following conditions for guidance :

Decisive Victory

Japanese deliver stores and withdraw with the loss of no more than one destroyer and inflict twice that amount of damage to the US. i.e. a cruiser with 50% or more damage counts as a lost destroyer.

Tactical Victory

Japanese deliver stores and suffer equal losses to the US forces.

Draw

Japanese fail to deliver stores but inflict greater losses on the US.

Tactical Defeat

Japanese fail to deliver stores and suffer equal losses to the US forces.

Decisive Defeat

Japanese fail deliver stores and suffer greater losses to the US forces.

To reflect Japans inability to replace losses, a weighting factor could be used. Count each damaged destroyer (i.e. >50% damage) as a loss, or each Japanese destroyer as two US or equivalent to a cruiser. Each cruiser counts as three destroyers.

Tassafaronga : Take Two

Not surprisingly the Japanese players were very concerned by the US radar and hoped to negate it by hugging the shore. They adopted a single line ahead formation with the two destroyers fully armed and ready at the front. Their standing orders on contact with an unknown ship were to immediately engage with gunfire if small or torpedoes if large.

The US players, split their original force into two divisions, the cruisers and the destroyers. The destroyers were in line abreast with 6" between ships. the cruisers in echelon port advanced, with 8" between each ship. The destroyer line started 24" in front of the lead cruiser. Their standing orders forbade radar use until contact had been made, and they instituted a recognition sequence of three green flashes, and a response of three red. Only if a ship failed to make the required response was fire to be opened. After working out deployments and standing orders at the game start, the US commander was given his last two destroyers, reluctant to take them into action without the recognition sequence they were given orders to patrol off the SW tip of Florida Island.

The Game

The game opened at 11.00, the US destroyers turned off port so the scouting line covered the front and Guadalcanal side of the cruiser line. At 11.54 *Oyashio* spotted a small ship on the port beam. Responding to standing orders fire was opened immediately, *Drayton* was completely surprised, and was hit badly in the first few minutes, but bravely followed standing orders and flashed the three greens challenge. This only encouraged the other Japanese destroyers who in the succeeding minutes poured fire onto the poor battered *Drayton*, which ground to a halt and started sinking. Meanwhile on the supply destroyers the crews cleared torpedo arcs.

Fortunately, the other US destroyers, recovering from their surprise fired starshells which illuminated two fast moving destroyers close to the coast. Using this illumination the US destroyers and nearest cruiser; *Honolulu* opened fire. Both *Oyashio* and *Makinami* took hits, although the damage was not grievous. TF67 in the traditions of the USN sailed to the sound of the guns and in the next six minutes the Japanese came under inaccurate fire from all the cruisers and destroyers. Realising that it was impossible to complete the mission the escort destroyers *Naganami* and *Takanami* turned away from the coast, intending to launch torpedoes and lay smoke. As the others retired they brought the US destroyers under withering fire and were amazed to see the *Maury* blow up and *Fletcher* stagger under a multitude of hits, *Kagero* took hits which slowed her down and would ultimately seal her fate.

Naganami and *Takanami* came under heavy fire and were seriously damaged. Meanwhile *Oyashio* already slowed by boiler room damage was brought to a halt by fire from the *Pensacola* and *Northampton*. The US destroyers retired on their cruisers and were lucky not to come under friendly fire. To cover their withdrawal the Japanese launched all their torpedoes, unexpectedly the US cruisers turned through the smoke and only *New Orleans* was hit causing significant but non fatal damage. Taking advantage of the smoke and confusion, the fittest Japanese destroyers retired. When the cruisers resumed the chase there were only the battered wrecks of *Takanami* and *Naganami* visible. As they swept west a stationary destroyer was found, which flashed the three green recognition signal, on closing the *Honolulu*

We have used these rules at Deal Wargames Society a number of times and have found that they give the feel of a fast night action. The actions where surprise has been achieved are usually over in six bounds and the losing side normally does its best to break off, often leaving behind a few cripples. The key is to discipline yourself to an immediate response in your standing orders, if communication is required then a bounds delay is a very long time..... It is vitally important that picket vessels are placed some distance in front of the main body to give time to react to their warning. We have found some difficulty when two or more formations come into contact with one in which case we have found that resolving each 'surprise' can result in a formation attempting to respond in different ways to different threats. We feel that under such circumstances the formation should react to its best result to that formation causing it, carry out those actions then resolve actions on/from the others.

Principal References

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