#### Formations Menu

The Formations Menu allows a user to perform any actions relating to the Formations in each Fleet. Before activating any of the options the user needs to select the World and Nation that they are working on – see the relevant section (World Menu and Nations Menu)

# New Formation

After selecting the World and Nation, a New Formation can be created, select the Fleet in which the Formation will be created and enter a unique name for that formation – note it must be unique for the World/Nation combination – each fleet cannot have a BatDiv1 for example. Known Issues, need to ask the user where the formation is going to be placed relative to the Fleet Flagship – this will be an (x, y) offset, assuming the fleet is heading north it will be positive for north and east and negative for south and west. Also need to know what the facing and layout will be (en-echelon instead of line ahead for example).

# Rename Formation

Rename an existing formation, having selected the World/Nation and Fleet. The new name must be unique for the World/Nation pairing.

# Delete Formation

Delete an existing formation, having selected the World/Nation and Fleet. There cannot be any ships in this formation – the ships must be swapped to another formation before the selected one is deleted.

# Join Formations

Not yet working

This will allow a user to join two formations into a single one – all the ships of the second formation selected will be appended to the end of the list of the first. Use “Swap Ships” to move the ships up and down the list. Need to decide whether to keep the second formation or delete it.

Note the same effect can be achieved by using “Swap Ships and selected all ships and transferring them to the first formation – may opt to not create this menu item for that reason.

# Swap Ships

Not yet working

Having selected World/Nation and Fleet, pick two formations – the list of ships in each will be displayed along with a set of buttons – up (^), down (v) for the first formation, left (<), right (>) and up/down for the second formation. This will allow ships to be moved up and down within their formation and left/right between the formations – it is legal to leave one formation empty, in this case the empty formation will not be deleted automatically it and must be deleted manually if it is no longer wanted. If you just wish to change the order of the ships in one formation, it is not necessary to select a second formation.

# Fleets Menu

Similar to the Formations Menu, allows a user to perform any actions relating to the Fleets in any Nation. Before activating any of the options the user needs to select the World and Nation that they are working on – see the relevant section (World Menu and Nations Menu)

None of these items are working yet.

New/Rename/Delete/Swap Formations.

# Battle Menu

The Battle Menu allows a user to build and conduct a Battle between two or more fleets.

## Build a Battle

When the User selects to Build a Battle, they will be offered a window where they can choose a Nation to be the Primary Nation (the data area where the battle file is recorded). Having chosen the Nation, they can select the fleet that is the Primary fleet in the battle.

They then have the option to add a fleet (a battle needs at least 2). They can select the secondary fleet’s nation and fleet and may continue adding fleets in this manner until they are done. They should also note if the secondary fleet is an ally or enemy of the Primary fleet.

The battle will be built with four objects – the Move number (always 0 when it is built), a dictionary of the fleets so that the survivors may be returned to the fleets file, a dictionary of all of the formations from all of the fleets, a dictionary of all of the ships from all of the fleets.

It may be possible to order the formations so that formations with longer ranged gun guns are placed first as they are more likely to open fire first and need a target specifying first, reducing the amount of work that the User has to do when selecting targets (they will be able to select “Done” before they have looked at every ship). The user will be able to select the filename to store the file under which will have a termination of “0BAT.json”.

## Save a Battle

When the User selects to Save a Battle, the current battle will be saved as a JSON formatted file in the Primary Nation’s data area with the name as the current battle ending with the current move number and “BAT” as the last characters of the filename, overwriting any files with the same move number.

## Load a Battle

When the User selects to Load a Battle, a check will be made to see if a Battle is already loaded, if so then they will be asked if they want to save it before loading the new file. Then they will be allowed to select an existing Battle file and it will be loaded.

## Get Movement

When the User selects to Get Movement, a window will be displayed showing all the formations in the Battle with their best speed (the speed that all the ships in the formation can make as a maximum). Also displayed will be the distance that they have to move before they may turn XXXX (which may be 0), how far they have to move between turns.

A combination box will allow them to select the first segment of movement which may be one of Straight On (Ahead), Port in Line (P when they follow the leader in a 45 degree turn to port, all at the same point the leader turned), Port Together (TP where they all turn at exactly the same time so they are in an en echelon formation 45 degrees to port), Starboard in Line (S as with Port in Line but to Starboard), and Starboard Together (TS as with Port Together).

Finally there is an entry box where they can enter a distance to move forwards, this must be at least the minimum they can move before their next turn (unless there is less distance left in the move than this figure). For example, if a ship has turned, moved 8, turned again, moved 8, turned again and can only move 21, their last number will have to be 5 (they will need to move 3 at the start of the next move before they can turn again). When this data has been set up click “Next” and the move description will be added to a display. An example for a formation that has selected turn together starboard, move 8, turn together port (to get back into line ahead), move 8, turn starboard in line, move 5 would be “TS8TP8S5”.

The User can click the “Finish” button when they have added in all the movement they desire (which may be less than the possible maximum). Once the “Finish” button has been clicked the formation will be added to the table showing all the moves entered so far.

Once all the formations have been entered, the entry line will be blank and Apply Moves will be available on the menu bar.

Note, if Get Movement is chosen when the formations haven’t moved, they will be re-displayed with the existing values which can be replaced. The User can cycle through all the formations again clicking “Finish” until they get to the formation they wish to change and re-enter the values – implies you need a clear button as well. XXXX It is only necessary to click on the formations that need to be changed. If they will make the same move the next time as they did the last there is no need to change them.

## Make Movement

When the User selects Apply Moves, move all the formations according to the move instructions read in by Get Moves. Note, if the lead ship turns, the rearmost ships in the formation may not reach the turn point by the end of the move and will have to continue the turn on the next move.

## Get Damage

When the User selects Get Damage, a new window will be opened that allows the User to select one of the ships in the fleet and enter an amount of damage to be added to that ship at the end of the movement phase. This damage comes from torpedoes fired previously or from any form of aircraft and is not handled by this programme though it will be recorded by it. On selecting “Next”, another ship may be selected and damage assigned to it. On selecting “Finish” to show that all of the data has been entered, that damage will be instantly applied to those ships.

Note at present there is no code in the programme to perform the actual battle and it may be necessary to do this manually outside the programme and enter the results via this or a similar option.

## Get Targets

When the User selects Get Targets, a new window will be opened that allows the User to select one of the ships (they will be displayed in order of the formations and the ships in those formations), the target of that ship will then be selected from the list of opponents. The User can select on one of the opponents ships as the target of the current ship and “Next” clicked to select the next ship to supply the target. Previous targets will remain selected allowing the User to just click “Next”. Once all ships that need to have targets assigned have done so the User can click “Done”. Note, not all ships need to have targets assigned to them, though their target should be blank if you don’t wish them to fire.

Note also that at the moment only the main guns of a ship may target another ship, at some stage it is intended to add secondary and possibly tertiary guns to fire at smaller targets.

Once all targets have been assigned and “Finish” has been clicked, the programme will calculate the ranges to all the targets, the angle of bearing from each firer to their target, and the angle of the target ship relative to the direction the firer guns are aimed. If this latter angle is within a set small angle so that the targets bow or stern is pointing directly at the firer, then the firer will get a bonus to hit which might mean that more shells will hit the target. In the Second World War period (and earlier) the amount of explosive in the shell and the effect of that explosive wasn’t as well controlled as it is now meaning that the actual distance the shell traveled wasn’t as accurate as the accuracy of the ability to point the guns at where the shell was going to land (which could be minutes later at long range). Hence a longer thinner target was much easier to hit than a short wide one.

A ship may also record that they have no target XXXX how, if they currently can’t see any target due to smoke or other ships passing too close to the target or themselves.

## Perform Battle

When the User selects Perform Battle, the rules covering how the battle progresses will be applied for the current move, the damage applied to each ship and the move number incremented. The User can then save the state of the battle at that point if they wish and can either continue from Get Movement for the next move or leave it until another day to continue the battle.

## Possible additional menu options

It is possible that additional options may be added to print out a status report for both players to be emailed or posted to them if they aren’t present at the computer that is conducting the battle. This might include the angle of the target and the range band that they fall into and any perceived hits on the target as well as a full description of any damage received by the players on ships and any resultant effect on their speed and gunnery.

No further additions are planned to this menu and effort will be applied to other menus before accepting any requests for changes from Users unless a major bug is discovered. Please note that this programme is being written for the author’s pleasure and to allow me to conduct the game in a solo manner and is being made available free of charge to other Users if they can find a use for it.

Known Issues:

Perform Firing – currently the Move Number is not displayed correctly.

- the Finish button is not in the correct place

- may need to move the TN and belt/deck values to a 2nd line

Get Moves - next button has moved

- finish button has disappeared

- need to sort out next/finish operation

Get Targets - may not be working

Load and Save appear to be working ok, may need to be able to save the file after move and after battle with different names

need to write Additional Damage routine, get damage, apply damage but not straddle.