Carrier Clashes
Fuel Calculation Excel Workbook

1. The fuel use workbook is for use with Carrier Clashes. It requires that each player have a computer running Excel – or a single computer shared by players who trust each other.
2. When using the workbook, ignore the game's usual endurance rules.
3. There is a separate workbook for each scenario.
   a. Each workbook two spreadsheets – one for Allies and one for Axis.
   b. Each side gets a copy of the spreadsheets to use on its computer.
   c. Each side uses Excel to fill in its own spreadsheet.
   d. Each side's spreadsheet is not shown to the other side.
4. Spreadsheet columns.
   a. The first column shows names of naval units in the scenario. It shows optional ships as well as ships that always appear.
   b. Players may wish to use the Excel freeze frame function to freeze the first column of their spreadsheets.
   c. The second column shows the maximum oil capacity of each unit.
   d. The third column shows the amount of oil that each unit uses when moving 4 hexes in a turn. Units use less oil when moving 3 (or fewer) hexes in a turn, and more oil when moving 5 or 6 hexes.
   e. The fourth column shows the amount of oil that each unit has on hand at the start of the scenario.
   f. The fifth through tenth columns repeat for each turn. In order, they show for each unit:
      i. The amount of oil (if any) received by the unit from another unit or base when refueling in a turn,
      ii. The unit's speed that turn in hexes (from 0 through 6),
      iii. The amount of oil used in the turn, **calculated by the spreadsheet** based on the unit's speed,
      iv. The amount of oil (if any) transferred by the unit to another unit in the turn through refueling,
      v. The amount of oil remaining on hand at the end of the turn.
      vi. The endurance remaining (in game turns) assuming that the unit moves 4 hexes each turn.
   g. The box at the bottom of the fifth column is a player aid that computes the amount of oil transferred from units less the amount of oil received by units. Where oil is being transferred between units (as opposed to being received from a base) this box should equal zero.
   h. Ship units always use oil unless they are in port. Even if a TF does not move in a turn, record its speed as 1 unless it spent the turn in port.
   i. Use D6s to record TF speeds as the TFs move. Put the D6 in each TF's box, with the side equaling the distance that the TF moved face up. At the end of the turn, make the entries in the spreadsheet to reflect the movement of TFs.
   j. Players should check the fuel spreadsheets before moving their TFs to confirm that the units in the TFs have enough oil to make the move intended.
5. A player receives the damaged victory point value of any opposing naval units at the end of the scenario that could not reach a refueling point or base due to a lack of oil.
6. Merchant ships do not track oil use as they move. They are assumed to have enough oil on hand to move at their maximum speeds for the entire scenario.
7. Refueling.
   a. Refueling points represent rendezvous with tankers, with the capacity of the refueling point being the amount of fuel that the tanker can transfer. Tankers may transfer oil to all other naval units. This requires that the units receiving fuel remain stationary in the rendezvous hex for an entire turn. The tanker can refuel an unlimited number of units in a turn, up to the total amount of oil that it has on hand. Players use the fuel use spreadsheets to track the amount of oil that a tanker has transferred to other units and the amount that it has remaining.

b. Bases with an "R" rating may also refuel naval units through this procedure. They have an unlimited amount of oil unless a scenario special rule provides otherwise. The ships being refueled are in the port of the base during the refueling process.

c. Players must still designate specific hexes for refueling rendezvous (as provided in scenario rules). Only USN units may refuel at sea at night. All other units may refuel at sea only during day turns.

d. USN carriers, battleships and heavy cruisers may act as tankers for other USN ship units in their TFs, but only at designated refueling points or at USN bases.

e. IJN carriers, battleships, cruisers and auxiliaries with stated fuel capacities may act as tankers for other IJN ship units, but only at IJN bases.