

NAVIGATION CONTESTS

WHAT ARE THEY?

A variant of the Predicted Log Contest, popular in D/5 – a form of competition among Power Squadron members that puts into practice what we learn in our courses. Some squadrons participate in two or three contests each year: a squadron event, a regional multi-squadron event, and then the district-level contest. Navigation contests use basic piloting skills such as:

Chart plotting	Calculating times	Taking bearings
Time keeping	Calculating distances	Plotting LOPs
Calculating current	Predicting current	Plotting fixes
Dead reckoning	Helmsmanship	60 D-Street
And maybe advanced techniques such as calculating a traverse		

NOTE: No electronic aids are allowed except depth finders for safety

WHAT HAPPENS ON CONTESTDAY?

Boat owners and observers attend a Captain's meeting - show time as scheduled. The contest chairman covers the rules & starting-line particulars; paperwork is done. Each boat receives a sealed envelope, not to be opened until contest start time. Envelope contains the courses each boat is to run, with specified times on each course. An observer is aboard each boat, representing the contest committee, to ensure the prescribed courses and times are adhered to and that no rules are violated. Each boat has a theoretical running time, called its "contest time" (or "Target Time"), which the contest committee knows and navigators of participating boats must calculate. The boat that gets back to the starting point closest to its "contest time" wins.

WHAT MAKES IT A CONTEST?

You must compute your "contest time." After completing the given course legs, you return to the starting point. The course and time for that last leg is not given - you must determine the course to take you "home" and calculate the time on that last leg. You add your calculated time on last leg to the total time of the given legs to determine your "contest time". Then you try to get home - across the start-finish line - at precisely that time.

You are "locked in" on last leg. However, as you turn to your final leg for home you must tell your on-board observer the course and speed you will run on the final leg. The speed is given as engine RPM. **You cannot change your speed on the last leg.** You may make one course change on the last leg in order to cross the start-finish line between the committee boat and the buoy. In fact, you must pass between them!

Position uncertainty. You will not be where you think you are at the end of the prescribed legs. Due to wind and current during the contest, it is unlikely that your boat will be at the DR plotted position for the turn to the last leg and home. You must be able to fix your actual position from time-to-time during the contest in order to determine the "real course and speed" home that you will need in order to hit your contest time on the nose at the line.

WHAT WILL YOU NEED ON CONTEST DAY?

A navigation crew on your boat to perform various duties. Typical positions are:

Captain/owner
Helmsman
Bearing Taker
Navigator
Time Keeper
Observer

Some positions can be combined. The observer works for the Contest Committee and will be assigned to observe on another boat. **You must provide an observer in order for your boat to run in the contest**

A suitable navigation site on your boat - this can be a formal station or a cooler top

Chart of the contest location - latest edition, appropriate scale - usually 1:40,000

Tide and current tables - extracts or downloads from NOS (NOAA)

Stop watches - for timing each leg and total elapsed time

Wristwatch - set to the official contest time at the captain's meeting

Plotting tools, pencils, erasers

A scientific calculator - must have the trigonometric keys

Binoculars - for identifying navigation aids and committee boat

Hand-held compass - for taking bearings to navigation aids to get LOP'S

A VHF radio - for safety and communicating with the committee boat

Note pads, scratch paper, masking tape

Forms - for calculating a traverse, for tabulating data

A speed curve for your boat - a graph of various RPM's versus knots resulting

Lunch - Sandwiches and drinks for your crew and the observer riding your boat are an expected courtesy as contestant boats are typically underway at lunch time

The proper attitude - I would like to win, but its more important that we have fun"

Bearing Taking 101

Now that we know what a Navigation Contest is, let's get down to the bottom-line.

It's time to apply what we've learned to a real time situation and use our old friend "Sixty Dstreet" ($60D = ST$). Knowing exactly how much time we have from the Traverse or Time Plot, and knowing how to derive our speed from the Speed Curve provided by the Skipper, the leeway we can expect, where the finish line is, and our latest edition charts we have all the information we need except for one equally critical element. **Our position.** *Exactly* where we are now! This we must accomplish by taking bearings as the primary source of positioning during the Nav Contest. In order to win we need to be using good equipment, taking accurate readings, and communicating precisely with our navigator.

Equipment:

1. Handheld pancake compass is best used for emergencies. Perhaps attached to PFD. As an accurate instrument for a Nav Contest, the handheld pancake needs to be relegated to the circular file 13.
2. "Autohelm" Flat NavCard has been used successfully by some of our teams, especially after they have been affixed to a good pair of binoculars. Generally, however, the "Autohelm" is used by pointing it in the general direction of the landmark in question and produces a dubious bearing. The "Autohelm" is best suited for the aforementioned file.
3. The **US Army "full military specification" handheld field compass with aiming guide** works very well and has produced District 5 championships. The card is floating in glycerin, thus minimizing error. Preferably a deviation table should be established for this device. However, its construction and design minimize the effect of onboard deflectors. The Army field compass will serve you well in rough seas where a stable platform is almost impossible. When all else fails, the device will get it done. Remember, a soldier in the field needs to know his location exactly, or he could be having lunch with the wrong bunch. This is his means of survival.
4. The **KVH monocular bearing and range finder (KVH Datascope) is the premier device.** It does pose a problem in heavy weather because the magnification it provides in identifying a measurable object, also magnifies the motion and ability to get a good bearing. In calm to moderate weather the KVH is extremely accurate for bearings while compensating for deviation, and also gives you the added benefit of range/height of object bearings. This can be most beneficial if you have reduced visibility.

Communications:

1. On contest day, venture out early enough to identify the best chart features to use, and establish the nomenclature you will need to make sure the team is on the same page.
2. Take bearings as often as requested by the navigator on all legs. This will give you the necessary confidence for that all important position determination on the last turn home.

If you don't know where you are exactly at that point - YOU LOSE!

TIME KEEPING

Timekeeping is a full time responsibility for a key member of your NavContest crew. The Timekeeper should have a minimum of 3 stopwatches with lap time, and total time elapsed on them.

1. The **first time piece is started at the gun and ended as you cross the finish line** to give you a comparison to the Traverse or Time Plot. You should know how well you did at this point. A few years ago, anything within 2 minutes of the prescribed time was thought to be in the money. Now, we are down to less than 30 seconds and dropping. So, it's important to have this dedicated time piece.
2. The **second time piece is for the 1st and odd numbered legs**. Started at the beginning of the leg and ended upon the completion of the leg, and kept at hand to verify the time for the leg .
3. The **third time piece is for the 2nd and even numbered legs** for the same reason as the secondtime piece.

Now you have a crew of 5 including the Captain/Helmsman, Navigator, Bearing Taker, Timekeeper, and a good Observer. If you and the crew do their jobs, you will be standing in the Winners Circle saying, "we're still the First in the Bay!"