

Navigation Event Rules

[As of 07/01/05]

Current year rule changes are in **red bold print!**

II. Flying Event Rules

C. Navigation

1. This event shall consist of a cross-country flight in **an airplane (that meets General Rule I.A.)** over a **multiple** leg course between 70 and 120 miles in length.
2. Each contestant must submit a flight plan before take-off, including, **but not limited to**, the estimated time enroute for each leg, estimated total elapsed time, and estimated fuel consumption. Planning time shall be determined by the chief judge. Only current NOAA sectional charts are approved for use by contestants in the navigation event. **1:500,000 scale charts must be used in the flight planning portion of the event.**
3. **A team member or safety observer must accompany the navigation contestant. These individuals** must meet the following requirements:
 - a. **Contestants and team members** must be registered members of the same team. If a team cannot meet this requirement, the Chief Judge may appoint a safety observer.
 - b. **Contestants and team members** must meet the eligibility requirements of rule I.C.
 - c. No contestant or **team member** may fly more than one navigation route.
4. **The altitude for the flight may be assigned by the Navigation Judge. Current Federal Aviation Regulations must be observed at all times.**
5. **The aircraft will be flown in a clean cruise configuration.**
6. The airplane must pass directly over each checkpoint in straight and level flight on a **track consistent with a** direct course from the previous checkpoint or point of departure. The turn to the next leg should be started, **immediately** after passing the checkpoint **and in the direction prescribed by the navigation briefing.**
7. **A choice of true airspeeds will be offered by the Chief Judge prior to the event e.g. 85kts, 95kts, 100kts, 120kts. This is to insure that proper spacing is maintained along the routes. The contestant must plan the flight using his selected choice of true airspeed offered by the Chief Judge. This choice must be made prior to the navigation heat sheet being published.**
8. **Airplanes must be fueled prior to the beginning of the navigation event, preferably the night before the competition.**
9. Scoring
 - a. **Fuel penalty points will be assigned based on the accuracy of the estimation of fuel consumption for the entire flight (start to stop engine).**
 - b. **Penalty points will be assigned based on the difference in seconds for the following:**
 - (1) **Estimated vs actual total elapsed time from take-off to time over last checkpoint.**
 - (2) **Estimated vs actual time enroute to each check point.**
 - c. **Scoring parameters for this event may include penalty points for the following metrics:**
 - (1) **Accurate identification of symbols or geographic references placed on the ground at each checkpoint or intermediate point(s) along the route. Penalty points will be assessed for failure to identify the symbol or for recording an incorrect letter or symbol. The symbol must be accurately recorded on the 1:500,000 sectional chart that includes the plotted route that was checked in flight planning.**
 - (2) **Failure to fly within .75NM of a checkpoint on appropriate heading.**
 - (3) **Deviation from average groundspeed along each leg.**
 - (4) **Deviation from altitude along each leg.**
 - (5) **Deviation from course along each leg.**
 - (6) **Excessive bank angles.****Note: These parameters may also be used to break a tie.**
 - d. **The lowest total score will determine the winner.**
10. **The following items will result in disqualification:**
 - a. **Altitude deviation of more than 500 feet except in the interest of flight safety.**
 - b. **Circling and heading deviations in excess of 60 degrees except as necessary to initially establish track on each leg and in the interest of flight safety.**
 - c. **Exceeding estimated flight time on any leg by more than 5 minutes.**
 - d. **Operating the aircraft in an unsafe or hazardous manner, including exceeding a 45 degree bank angle.**
 - e. **Operating during cruise in other than a clean configuration. This includes slow flight or flight at minimum controllable airspeed.**
 - f. **Tampering with GPS recording devices placed on the aircraft by judges.**

- g. The use of a cell phone or texting device in the aircraft except in the case of an emergency.
- h. Plotting checkpoint on sectional more than 2nm from actual location.
- i. Failure to plan at the chosen true airspeed.
- j. Incorrect plotting of course.
- k. Incomplete chart or incomplete filling out of "Flight Planning and Computer Entry Form" within the allotted time.
- l. Use of a fuel dipstick when refueling for scoring purposes.

Note: The final decision shall be made by the Chief Judge.

11. The Judges Manual will identify and explain these and further penalties and/or disqualifications.

05/12/08 - Date of last change to this section

Correction to Original Posting 8-18-08

The original posting of the new Navigation rules for the 2008-2009 competition year included old section II.C.8. which permitted the use of dip sticks during refueling. That section was deleted by the NIFA Council at its meeting on May 8, 2008. The above rules for the Navigation event have the old section II.C. 8. replaced with the new section II.C.8. as well as the addition of II.C.10.I.