

Flywell Air Rally - 2019

(Version 2)

What is the Flywell Air Rally?

An event to challenge airmanship skills in planning and accurately flying a set course using only dead reckoning. You can improve your skills, have fun, and socialize!

How does the Flywell Air Rally work?

- 1) Rally teams work independently and fly on the day of their choosing.
- 2) Pilots are given a prescribed course to fly defined by a series of waypoints. (The approximate length of the course is 125 nm, beginning and ending at KANE.)
- 3) Before the flight: The time to reach each waypoint and the total amount of fuel for the flight is estimated by the pilot and recorded on the Air Rally Score Sheet.
- 4) A device with Foreflight capability (or equivalent) is taken on the flight to record the flown track. (Note: electronic aids for navigation purposes are not allowed. Further described in "Air Rally Rules" section.)
- 5) During the flight, the time of airport departure and arrival at each waypoint is recorded.
- 6) After the flight
 - a. The amount of fuel used is recorded and the difference with estimated fuel usage is calculated.
 - b. The difference between the estimated time to reach each waypoint and the actual time is calculated and recorded. (Write all times relative to "begin acceleration for take-off" = 0.) (If you do not fly over the waypoint, use the time at the closest point on your actual track.)
 - c. Using the recorded flight track data from Foreflight – the closest distance of the actual track from each way point is measured and recorded.
- 7) The data collected above is entered on a score sheet (attached below) and a score is calculated. Penalty points are assessed for over/under deviations from the planned times, waypoints and fuel used. Just as in the game of golf, the lowest score wins.
- 8) The data sheet is mailed to the rally coordinator (Avram Scheiner: avram.scheiner@medtronic.com) for collation with all the other participants.
- 9) A Flywell picnic will be held on July 13th. The location is TBD. A review of the rally results, hanger talk about the rally, as well as fun and food will be had by all. Prizes will be awarded to the top rally teams.

Air Rally Rules

- 1) All pilots from Flywell, Wild River and NorthStar flight clubs are welcome to participate with any aircraft of their choosing.
- 2) Pilots are solely responsible for the conduct and safety of their flight.

- 3) All resources, including electronic planning tools, flight Service, (etc.) or help from other pilots are allowed in the planning phase of the flight.
- 4) The flight can take place any time up until the 2 days before the Flywell picnic. Each rally team fly independently on the day of their choosing.
- 5) Rally teams may consist of as many people as can fit in the aircraft.
- 6) The first try at flying the course is scored. If teams wish to practice, use waypoints away from the course area.
- 7) During the flight, the only tools allowed for navigation are:
 - a. Paper sectional map.
 - b. Pencil and ruler (or equivalent)
 - c. Watch or stop watch (or equivalent)
 - d. Eye balls
- 8) The following cannot be used during the flight
 - a. Portable electronic navigation devices – GPS iPad or other similar devices
 - b. GPS, VOR, NDB, (etc.) that are part of the plane's navigational equipment
 - c. The directional gyro (gyroscopic compass) will be covered during flight
 - d. Electronic fuel flow devices (or equivalent) to accurately track fuel usage.

Note: The above rules may be adjusted for safety needs. For example – A GPS unit may be placed on the “traffic page” if needed to help in avoiding other air traffic (but in no way used for navigation). The directional gyro may be uncovered during takeoff and landing if it is needed for safety reasons.

- 9) To compete for prizes, the score sheet must have been received by the rally coordinator at least 48hrs before the picnic (on July 13th).

If you have any questions please e-mail Avram Scheiner at avram.scheiner@medtronic.com Subject: Air Rally inquiry

Equipment needed to participate in Air Rally

- 1) Airplane
- 2) Twin Cities Sectional chart
- 3) Flywell iPad with Foreflight (or equivalent) to record flight track

Cost: There is no additional cost to participate in the Flywell Air Rally.
(The cost of the airplane and chart are the responsibility of the pilot.)

Waypoints in decimal DD.dd

Start	KANE	Airport
Waypoint 1	45.46°N/92.94°W	Tower (1210 elevation)
Waypoint 2	45.78°N/93.27°W	Small lake
Waypoint 3	45.83°N/93.93°W	Town of Ramey
Waypoint 4	45.46°N/93.76°W	West corner of lake
Waypoint 5	45.22°N/93.45°W	North tip of island
Finish	KANE	Airport

Waypoints in DD°MM'SS"

Start	KANE	Airport
Waypoint 1	45°27'44"N/92°56'17"W	Tower (1210 elevation)
Waypoint 2	45°46'48"N/93°16'17"W	Small lake (center)
Waypoint 3	45°50'03"N/93°55'53"W	Town of Ramey
Waypoint 4	45.°27'20"N/93°45'32"W	West corner of lake
Waypoint 5	45°13'07"N/93°27'10"W	North tip of island
Finish	KANE	Airport

Using Foreflight to record flight track

Use "rec" button in Foreflight to record flight track and then measure deviation from waypoints.

Note: Instruction on how to use Foreflight and record your flight can be found on YouTube. Search "Foreflight How-To: Automatic Track Logging." or "Foreflight Tip for pilots: Track Logging".

After recording your flight path using Track Logging the file can be displayed on the Foreflight map to measure the closest distance of your flight path to each waypoint. Another option is to export the data file for display on google earth where measurements can also be made.

Of course, any flight tracking device/software can be used for flight track recording to determine closest distance from each waypoint.

Note: It is not required, but if the team wants to, please send an electronic copy of your flight path to the rally coordinator. If possible, we will try to merge the flight path data sets from all teams for display at the picnic.

Air Rally Score Sheet

Team Name: _____

Team Members

Date of flight: _____

Time

Waypoint	Estimated Time to arrive at WP (min) <small>(Fill in before flight)</small>	Actual Time (min) <small>(Fill in during flight)</small>	Absolute Difference (min) <small>(Calculate after flight)</small>	Notes
KANE (Accelerate for TO)	0	0	0	
1 (Tower)				
2 (Small lake)				
3 (Town of Ramey)				
4 (West corner of lake)				
5 (North tip of island)				
KANE (Wheels touch down)				
Total deviations (min)				

Fuel

Estimated total fuel usage (Gallons) <small>(Fill in before flight)</small>	Actual total fuel usage (Gallons) <small>(Fill in after flight)</small>	Absolute deviation (Gallons) <small>(Calculate after flight)</small>

Team name: _____

Navigation

Waypoint	Closest distance of waypoint to actual track (Nautical Miles) (Fill in after flight using flight path data)
KANE	0
1 (Tower)	
2 (Small lake)	
3 (Town of Ramey)	
4 (West corner of lake)	
5 (North tip of island)	
KANE	0
Total deviations (nm)	

Total Score

	Total deviations (copied from above)	Multiplication factor	Points (column 1 X column 2)
Time		1 point/min	
Fuel		10 points/gal	
Navigation		10 points/mile	
Total Points			