

# FLIGHT SIMULATOR AROUND-THE-WORLD RACE 2016

## Routing and Special Rules

V1.00

February 12, 2016

### Highlights of the 2016 Special Rules

**In Search of A Moonbow: (from wiki: <https://en.wikipedia.org/wiki/Moonbow> )**

Five possible locations are within a few miles of the sites referenced in Wiki. Two are also very nearly antipodean points.

- Limits imposed on use of Normal Category aircraft types. (see Rule 4)
- Changes to use of Jet Transport aircraft. (see Rule 4)
- A number of Special Aircraft and Team Flights are included. (see Rule 5)
  - Formation Flights. Teams may score three closely coordinated legs.
  - Teams may score Team Flights that include a total of six participating pilots.
  - A special set of up to three flights in simple, lower-performance aircraft to provide opportunity for rookie pilots to comfortably carry the baton.
- Rookie Mulligan. (see Rule 9.)
- Credits in 2016. Credits for successful team and formation flights may be used to offset penalty points. (see Rule 7)

#### 1. The Prizes.

This year's winner will receive the Wilhelm "Wilhe" Bendit Trophy. Additionally, two more prizes will be awarded. First, the baton pilot who flies the fastest normal leg over 600nm wins the Roadrunner Prize for speed. And second, the flying pair who performs the best single time in the Formation Flight contest captures the Gemini Award.

#### 2. Start Time.

**The race will begin on Saturday February 20, 2016 at 0000 UTC (that is: 0100 CET, 1900 EST [Friday], 1600 PST [Friday]).**

### 3. Routing.

#### The 2016 Race begins and ends at Liberia, Costa Rica (MRLB)

- 1) Teams must circumnavigate the world, passing through all degrees of longitude, and meet the following requirements:
- 2) The teams must land at one airport on the main landmass of each of the continents (Africa, Asia, Australia, Europe, North America, and South America.)
- 3) The teams must land at latitudes "NORTH" and "SOUTH" such that the difference between the two is at least 60 degrees latitude.
- 4) Airport Requirements:
  - i) Teams must execute a full stop landing at three of the following airports which are entries to nearby Parks where Moonbows may be seen.

**PHUP - Upolu Hawaii 3800' - paved, lit**

**KSME - Somerset-Pulaski Co-Wilson, Somerset KY 5800' paved, lit**

**MRCH - Chacarita (Puntarenas) Costa Rica 4921' Paved, unlit**

**LDRO - Otacac, Croatia 5300' Grass, unlit**

**FLLI - Livingstone Zambia 7500' bitum. lit?**

- 5) Restrictions on Airspace and Landing Rights:

The global character of the race requires working with many countries to obtain legal clearance, including overflight and landing rights, as well as to assure minimal security for our pilots. This year, pilots have free access to all countries with the following exceptions.

- i) Airspace denied and landing rights denied:
  - (1) Iran, Syria and North Korea.
- ii) Airspace is open but landing rights denied or security inadequate:
  - (1) Iraq, Somalia, Gaza (LVGZ), Ukraine and Crimea,
  - (2) the ungoverned Federally Administered Tribal Areas - Pakistan (OPWN, OPMN, OPPC are closed, others are ok)
- iii) Special Restrictions:
  - (1) Polar restrictions: Pilots may not land at latitudes above 80° N or below 60° S.
  - (2) Other Airports closed:
    - (a) The US Navy is testing advanced weapons this long weekend. Point Mugu NAS and the islands along the Los Angeles coastline are closed. (No landings at the following: KNTD, KAVX, L11, KNSI, KNUC, SZN, CA97)

#### 4. Aircraft Options and Requirements for the 2016 Race.

On posting the takeoff for any leg, the pilot must explicitly identify his aircraft. He should announce (a) the aircraft type, (b) the model and (c) the specific simulation modeller. Failure to announce all three in a timely manner (within an hour after releasing the baton) may incur a documentation penalty.

Note: An aircraft "type" is determined by its characteristic airframe and propulsion system. A "model" or a "variant" is a variation of a "type". (For example, the F4F, F6F, F8F are different "types" as they are different designs; various models of the Beechcraft King Air are one "type" as they are variations of one design.). The "White List" - Appendix A – provides the Types and Models allowed along with the specific Flight Sim version(s) approved for use. This does not constitute any change from past practices or application.

(NOTE: The "pilot-of-record" is the one who releases the baton after successful completion of a leg. If this is the original baton pilot, then a wingman is, in effect, a 'non-entity' for the purpose of the flight. Should a transfer take place then the wingman becomes the baton pilot (of record). It should be apparent that a wingman on any flight should therefore be flying an appropriate type that complies with the rules of the leg and the race as a whole. In the case of a Formation or Team Flight, the above still applies but the wingman is now essential for completion of the Formation, or qualifies as a participating pilot in the Team Flight. These extra flights are not counted in the usage limits as they are secondary to the baton leg.)

##### i) Normal Aircraft

- (a) These aircraft are listed in "The White List" – Appendix A.
- (b) Normal aircraft legs may extend to a maximum distance of 750nm and are limited to two hours in duration after which the standard triple time penalty applies.
- (c) No type may be used by a Team more than four (4) times. A 30-minute "maintenance" penalty applies to each excessive use.

##### ii) The Thoroughbreds:

- (a) These aircraft are listed in "The White List" – Appendix A.
- (b) The Thoroughbred list includes all models of the Dornier Do335, P-51H, P-82B, and P-47M, as well as the DH.103 Hornet and F-80 Shooting Star by AlphaSim/Virtavia.
- (c) Thoroughbred aircraft legs may extend to a maximum distance of 750nm and are limited to two hours in duration after which the standard triple time penalty applies.
- (d) Teams may fly no more than a total of ten (10) baton legs in thoroughbred class aircraft and no type may be used more than four (4) times. A 30-minute "maintenance" penalty applies to each excessive use. These 10 thoroughbred legs represent a resource to be used strategically.

iii) Jet Operations:

In certain situations it is desirable to have access to jet aircraft to bridge longer distances at higher speed. Therefore the Committee has made provision for a known list of transport-category jets to be available as a strategic resource. These are divided into two categories with specific usage limits for each, as follows:

- (a) Transport Category 2 (Medium) Jets: Civilian Transports having a MTOW of 100,000 to 190,000 Lbs and powered by no more than two engines (except those listed below).

Available types are shown in Appendix B and generally described below:

- (i) Airbus A320 (family, including A318, A319, A320, A321). Boeing : the B737 (family). Adds the following flying but well-worn classics: McDonnell Douglas DC-9, MD-80/90 (family). Four lovingly restored early classics, the BAC 1-11, the DH.106 Comet, the Hawker Siddeley HS121 Trident, and the SE 210 Caravelle.
- (ii) In addition, Embraer, Bombardier and British Aerospace "regional" jets (E-145/170/190 and CRJ-200/700/1000 and HS/BAC146) that fit below the weight limits above are allowed.

- (b) Transport Category 3 (Large) Jets: Civilian jet transports with 2, 3, or four engines and a MTOW of 170,000 Lbs or more.

Available types are shown in Appendix B and generally described below:

- (i) Airbus A310, A330, A340, A350, A380; Boeing B747, B757, B767, and B777. It adds the following flying but well-worn classics: the Boeing B707, B720, B727, McDonnell Douglas DC-8, DC-10 and MD-11; Lockheed: restored instances of their famous L-1011 TriStar.

- (c) Limitations:

Use of Category 2 (Medium) jets and Category 3 (Heavy) jets are combined for 2016 with the following distance limits –

- (i) Category 2 jets –minimum leg length of 750nm; maximum leg length of 1200nm.
- (ii) Category 3 jets – minimum leg length of 1200nm; maximum leg length of 1650nm, except that ONE (1) leg may be extended to a maximum of 2110nm.
- (iii) A maximum of 7 legs total are permitted.
- (iv) The total combined distance of all Category 2 and 3 legs shall not exceed 6200nm. No time limit is applied to legs.

Teams shall maintain a summary (leg, category and type of aircraft, distance) of Jet legs flown and upon completion of all Category 2 & 3 combined flights shall post these summaries on their respective Race Forum.

Supersonic flight is not permitted. (The Duenna will record if speed exceeds Mach 1.05 and the leg will be examined by the Race Committee.) A momentary transgression will not result in a time penalty for the first instance. Subsequent brief transgressions by a Team may be assessed a minor time penalty per occurrence. Extended flight in excess of Mach 1.0 will result in the leg being rendered invalid and require it to be re-flown without additional penalty, except the incurred time. Pilots wishing to 'fly near the edge' should be prepared to maintain full-time flight monitoring.)

## 5. Special Flights.

Special Flights are either Optional or Required segments specifically set for the current year.

### 1) Beginners' Luck: (200 easy miles in a maximum of three legs) (Required)

- a) Short flights that are ideal opportunities to introduce new pilots to the rigors of RTWR flying as Baton Pilot. Pilots must fly a General Aviation aircraft (single or twin) with a Vne (Maximum Speed) of 200Kts or less (as shown in the aircraft.cfg file). (Typical aircraft include Cessna singles, light Piper twins, a variety of homebuilts and numerous European sport aircraft.) The team must advance the baton a total of at least 200nm during a maximum of three legs. A minimum distance of 50nm for each leg is required and no leg may exceed 120nm. The baton legs are required, a wingman is optional. It is encouraged but not mandatory that the Baton Pilot for these legs be a "Rookie". Any or all of these may also be used to perform a Team Flight (see below)

### 2) Team Flights: (Optional)

- a) Each team may optionally execute Team Flights so that six (6) Participating Pilots (other than baton pilots) complete the legs in accord with the specific conditions below. Team Flights will be rewarded with a credit of five (5) minutes per successful Participating Pilot to a maximum credit of thirty (30) minutes.
- b) The standard rules governing team flights are in Appendix C. No more than three pilot legs can be earned in a single event. (For requirement fulfillment purposes, the wingman counts as a Participating Pilot if he does not handle the baton.)
- c) After each Team Flight, the team must post a summary that indicates the name of the Team Flight and that identifies the participating pilots who scored for that flight. The summary should indicate the cumulative number of participating pilot credits in the race thus far. After the final Team Flight, the team must post a Team Flight summary that indicates the date and time for each of the individual Team Flights, gives the number of participating pilots in each, and then sums up the total.

3) Formation Flights: (Optional)

- a) Teams may optionally complete three Formation Flights in which two pilots complete their legs in close coordination. For any leg the lead pilot initiates, "I have the baton in a Formation Flight." and the wingman declares, "Flying wingman in a Formation Flight."
- b) The leg length must be at least 400nm; both pilots must leave the same airfield within 3 minutes of each other, and both pilots must land at the same destination. To validate their flights, both pilots must use the Duenna online flight tracking software while enabling the "Arm baton auto-pickup" button. For the Formation Flight to count, the next leg may not depart (nor, on the final stop, does the team's race end) until both formation pilots have posted their landings.
- c) A perfect Formation Flight ends when the two pilots complete the leg in such a manner that their individual Duenna-marked Flight Times are equal.
- d) Teams have up to five attempts at such flights and score the best three of the five. The credit for excellence in any given Formation Flight, measured as the difference in the two legs' durations, is as follows:

<u>Duration Difference m:ss</u>	<u>Credit m:s</u>
0:00	12:00
0:01-0:30	9:00
0:31-0:59	6:00
1:00-2:59	4:00

- e) A difference of 3:00 (three minutes) or more will invalidate the Formation Flight with the loss of the opportunity.
- f) For "extra credit", ONE (1) Formation Flight, if flown in accordance with the above rules and utilizing Category 3 (Heavy) Jet transports, will earn double (2x) the applicable credits for that flight. Multiple attempts (of the five available) may be made in Heavy Jets but only one successful flight may be counted. (For example, a 1500nm leg in B747 aircraft, declared as a Formation Flight and successfully landed with a difference of 0:28 seconds would score 18 minutes of credit)
- g) Immediately after releasing the baton and confirming the validations, the lead pilot or a teammate posts in the active thread showing clearly the two flights' durations, the difference, and the calculation of the Formation Flight credit (if any). He declares the Formation Flight and enters the appropriate credit into the team's bank. Of the five (5) opportunities, the top three (3) count (the team throws out the worst score/scores).

- h) Once the two pilots declare a Formation Flight, a failure to complete both parts forfeits the opportunity. (That is, the team gives up one of its five chances to complete a Formation Flight.) Such a failure might occur when a diversion makes the leg length too short, or one pilot crashes, a computer fails, or the interval between the pilots grows too large. The lead pilot merely declares "The Formation Flight is terminated" and the leg reverts to a normal leg. The opportunity is lost.

A Formation Flight may also be expanded to make a Team Flight. Separate summaries shall be posted for each category. The double credit provision [(3f)] only applies to the Formation Flight portion if it is additionally flown as a Team Flight.

## **6. The Consecutive Pilot Rule in 2016.**

Normally, a pilot may not be the pilot-of-record in consecutive legs. (A pilot-of-record is the baton pilot who completes a leg.) However, conditioned on provision "c" below, he may do so in the following circumstances.

A. Emergency Pilot Rule. If the team has no pilot to carry the baton, the just landed pilot-of-record may carry the baton on the next leg, provided:

-On the first instance of the team's using the Emergency Pilot Rule, the pilot waits 5 minutes after the baton release before claiming the baton.

-Thereafter, the pilot waits 30 minutes before claiming the baton.

B. Wingman Transfer. The pilot-of-record on the previous leg may take the Wingman role in the current leg. He may accept a Wingman Transfer at the normal cost of a 30 minute penalty.

C. In no case may a pilot be the pilot-of-record in more than two (2) consecutive legs. (Note this rule may affect a subsequent retrospective wingman transfer.) (This Special Rule supersedes part of Rule 6.b.ii in the General Rules.)

## **7. Credits, Penalties, and the Bank.**

Teams will keep open accounts of their penalty /credit time. Teams incur penalties for wingman transfers and rules violations. They also collect credit for achieving the standards in the Team Flights and Formation Flights. This Bank is public and everyone can quickly keep track of the competition. Care should be exercised to insure as much security as possible. Teams are to keep track of penalties (eg. Wingman Transfers) and credits in the web application located on the official web site here: <http://www.fsrtwrace.com/bank/> . Credits in excess of penalties that remain at the end of the race shall be deleted.

The official Race Time is the time from start to finish plus any penalty time.

## **8. Artificial Vision and Artificial Landing Aids in 2016.**

Pilots may not use artificial (not true to their aircraft) gauges or tricks to enhance their vision or their ability to approach an airport. Standard TAWS gauges or GPS gauges are fine. They simulate real world depictions of terrain and give "non-precision" approach information. However, artificial vision gauges and tricks are not allowed. (Even if realistic, in 2015 they are not allowed because they change the nature of the competition.) Similarly, Glen Copeland's nifty "Satellite Assisted Landing System" (SALS) gauge is not suitable for the Race and is therefore disallowed. Further, 'ad hoc' changes to computer/display settings that enhance the simulation in low-light or low-visibility conditions are prohibited. This ruling expands the General Rules' prohibition of "artificial landing aids" such as third-party Autoland gauges and devices.

(Note: It is anticipated that this will be incorporated in the General Rules at a future date.)

## **9. New Pilots.**

New pilots enjoy a one-time "rookie mulligan." During the Race, each new pilot may exercise a single "wingman transfer" without cost. A new pilot is one who is racing for the first time this year or who is returning to the race after an absence of at least three years. Pilots must declare the wingman transfer as a 'mulligan' in order to claim the relief.

## **10. The Duenna.**

In 2016, all pilots must use the new Duenna v2.0 current release. For FSX (Classic and Steam) and for P3D, this also requires an updated FSUIPC Version 4.938d or higher. Pilots who inadvertently use an older version will have their leg counted normally but will be asked to update their Duenna. (Repeat violations will be penalized.)

## **11. The Weather.**

Pilots may choose their weather engine for the race as long as they stick with their choice throughout. The options are enumerated in the General Rules. Teams will publish a list of their pilot choices so that everyone knows what is going on.

If an individual pilot has unanticipated difficulties with his chosen weather engine, he should appeal to the Racing Committee about switching to the default Jeppesen or another engine.

If the Real Weather system fails for everyone, pilots should switch to the default "Fair Weather" (not the "Clear Weather") theme, contact the Duty Officer, and follow any subsequent instructions.

## **12. Administration.**

The 2016 RTWR will be governed by an Administrative Organization comprised of a number of race pilots who volunteer their time. See the Race Administration document for details.

### **13. Communications.**

The Official Race Site is here: Flight Simulator Around the World Race  
(<http://www.fsrtwrace.com/>)

NOTAMS will be published on the Official Site. Immediate notifications by a Duty Officer or committee member may be posted on the FSRTWR NOTAMS Forum here. (There may be delays moving from the forum posting to the formal website posting.)

Communication with the Duty Officer is accomplished via a posting on the special "Duty Officer" forum on the FSRTWR Forums here. (The Duty Officer will frequently check that forum for new messages.)

You may send a private email to the Executive Committee [rtwrace@gmail.com](mailto:rtwrace@gmail.com) . This email will be checked only occasionally. It is not your main contact point.