FLIGHT SIMULATOR AROUND-THE-WORLD RACE 2017

Routing and Special Rules

Version 1.01. Release.

Highlights of the 2017 Special Rules

- Routing limited to a portion of the globe.

- The Racing Time is limited to 48 hours after the start.

- Limits imposed on use of Normal and Thoroughbred Category aircraft types. (Rule 4)

- Limited use of Jet Transport aircraft. (Rule 4)

- Special Rotorcraft requirement. (Rule 5)

- Formation Flights. These have no effect on the Race. Entirely optional. (Rule 6)

- Rookie Mulligans. (Rule 11)

- Special penalty options provided for crashes. (Rule 9)

- All penalties will be served in place in real time. (Rule 8)

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 Finish, and the Winner.

The race will begin on Friday February 17, 2017 at 2200 UTC (that is: 2300 CET, 1700 EST, 1400 PST). The Racing Time is capped at 48 hours after the start.

The first team to complete the Race (including waiting out any not-yet-served penalties) is the winner. If no team has finished after 48 hours, each team's baton will revert to the last airport at which the team made a baton transfer. The team nearest the finish airport (the distance measured by the FSX flight planner) is the winner.

3. Routing.

The 2017 Race begins and ends at Phoenix Williams Gateway International Airport, AZ, USA (KIWA). Teams must follow the prescribed clockwise route, subject to the following conditions:

    The teams must perform a full-stop landing at each prescribed mandatory airport, travelling in a clockwise direction from KIWA.

The teams may select and use any intermediate airports of their choice.
Airport Requirements. Teams must execute a full stop landing at each of the following airports.

> KIWA –Williams Gateway Intl, Phoenix, AZ, USA (start)
> L06 – Furnace Creek, Death Valley CA, USA 3065' paved
> CYXT – Terrace, British Columbia, Canada 5931' paved, lit
> CYZF – Yellowknife NT, Canada 7408' paved, lit
> CYQM – Moncton, NB, Canada 7953' paved, lit
> KRDU – Raleigh Durham, NC, USA 10000' paved, lit
> MUGM – NAS Guantánamo Bay (Cuba) USA, 8000' paved, lit
> TBPB – Grantley Adams Int'l, Barbados 11,027' paved, lit
> SBRF – Guararapes - Gilberto Gilberto Freyre, Recife, Brazil 9824' paved, lit
> SAZS – S C De Bariloche, Argentina 7709' paved, lit
> SLLP – El Alto, La Paz, Bolivia 13116' paved, lit
> MGGT – La Aurora Intl, Guatemala City, Guatemala 9838' paved, lit
> KIWA –Williams Gateway Intl, Phoenix, AZ, USA (finish)

4. Aircraft Options and Requirements for the 2017 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. For these normal aircraft, a 10-minute "maintenance" penalty applies to each excessive use. That said, the race eligible P-38(F-J,L) and P-51(B/C/D) may be flown as many times as desired.
> > (d) Normal racing aircraft with a maximum speed of no more than 350 Knots True Airspeed may be flown without usage restriction.

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 eight (8) 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 thoroughbred use. These 8 thoroughbred legs represent a resource to be used strategically.

iii) Transport 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). Add the following flying but well-worn classics: McDonnell Douglas DC-9, MD-80/90 (family) and 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. Teams optionally fly no more than two specially restricted Transport Jet flights as follows.

            Teams may optionally fly any Category 2 or Category 3 Transport Jet on a direct route for one or two of the following three connections: Moncton-to-Raleigh Durham (CYQM-KRDU), Raleigh Durham-to-NAS Guantánamo Bay (KRDU-MUGM), NAS Guantánamo Bay-to-Barbados (MUGM-TBPB). There is no time limit for the completion of these legs.

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 Flight Requirement.

Rotorcraft. In eligible rotorcraft (with a Vne of <200 Kts), teams must complete two or more legs, each a minimum of 25nm, that together total at least 100nm. The Bell Boeing V-22 Osprey, Wilco Tilt-Rotor, other tilt-rotors, variants of the mythical "Airwolf", and the Westland G-LYNX (speed record-holder) are not eligible to fulfill this requirement.

6. 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. (Note that, unlike previous years, the next leg may depart as soon as the baton is released.)

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) 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, and the difference between the two. He declares the Formation Flight.

e) The Formation Flight does not affect the Race outcome. The best Formation Flight wins the Gemini Award.

7. The Consecutive Pilot Rule in 2017.

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, 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:

- The pilot invokes the Emergency Pilot Rule and accepts a 3 minute transfer penalty. The pilot officially posts both the "baton is free" and the "I have the baton" messages in the team forum, and then proceeds.

- On each subsequent invocation of the Emergency Pilot Rule, the pilot accrues an additional 3 minute transfer penalty – there is no escalation. On each such instance, the pilot shall update an open tally of the transfer penalties he accrues.

- When a new pilot is ready to take the baton, the team must serve the accumulated transfer penalty time after the baton is released and before the baton is officially claimed by the new pilot.

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 plus a 3 minute penalty to be served when he then officially releases the baton to a new pilot.

8. Penalties.

Teams will serve each penalty in real time at the next available moment. Any penalty under review need not be applied until the final decision is made at which time it will be served as soon as possible. Normally, teams must clear all outstanding penalties before they depart on the final leg.

Serving a penalty:

When serving a penalty, the team holds the baton stationary on the ground. Importantly, the team must ensure that the wait time on the ground, the difference between the last baton release and the new baton claim, is at least as long as the penalty.

The correct procedure requires attention to detail. For an example, consider a one (1) minute penalty. If the last baton release is marked at 12:00 on the forum clock, the new baton may not be claimed before 12:02 on the forum clock. Note that the forum clocks are marked in hours:minutes and not hours:minutes:seconds. Thus, a forum clock time of 12:00 may have been registered at any time between 12:00:00 and 12:00:59. Only a 12:02 departure can ensure that one full minute has expired. Similarly, a five (5) minute penalty would mean that the team could not reclaim the baton until 12:06, a fifteen (15) minute penalty waits until 12:16, … and so forth.

Penalties include:

- *Triple Time Excessive Leg Duration.* Teams serve a penalty 3 times the time they have exceeded any leg duration limit. (See General Rule 6.d.iii.)
- *Timing and Sequence Errors.* The team must serve the error time as a penalty at the next baton transfer with a minimum penalty of one full minute. Immediate self-reporting (before the next baton is claimed) and voluntary correction is sufficient to clear the error. However, if Race Committee action is required a two-minute Administration Penalty will be added.
(Example one. Based on the sequence of forum posts, it is evident that a departing pilot claims the baton before the arriving pilot releases the baton. The forum clock times may be identical. Nevertheless, the improper sequencing carries a minimum penalty of one minute – and so the team must serve a one minute penalty at the next baton transfer. Example two. The departing pilot leaves 5 minutes before a tardy arriving pilot remembers to release the baton. The team serves a penalty equaling the discrepancy in posting times. Example three. The team aims to serve a penalty but they accidentally leave one minute too early. The team serves a penalty of one minute at the next baton transfer.)

- *Administration Penalty.* Two (2) minutes. Incomplete posting and documentation errors that persist more than one hour after the leg's completion. These minor errors would include the lack of a timely Duenna, absence of a starting Baton/Wingman post, incorrect ICAO descriptions, incomplete aircraft type information, etc. This administrative penalty applies when there is solid evidence that the leg was completed, that the baton/wing pilots did the right thing, the aircraft was properly eligible, and so forth. (Absence of evidence for a leg completion, or start time, or aircraft probity, and so forth will activate more serious penalty regimes than the administrative penalty.) If the team corrects the error before an administration action is required, then there is no penalty. Edits to forum posts must clearly indicate the nature of the change. Simple deletions or additions are not acceptable. (This should become part of the General Rules at a later date.)
- *Consecutive Pilot Rule.* The wait times are not penalties in the sense of a rules infraction. The mechanism is the same. See Special Rule 7 above.
- *Crash Penalties.* See Special Rule 9 below.
- *Invalid Leg Penalties.* Any completed leg that is later declared to be an invalid leg for technical reasons will be subject to an ordinary Crash Landing Penalty plus any Compensatory Penalty to be assessed by the Racing Committee. The full penalty will be served at the next available opportunity. (Note that the Racing Committee may judge some technical violations to be largely inconsequential and assess a minor penalty rather than invalidate the leg.)
- *Other Penalties.* Other penalties assigned by the Race Administration are also to be served in real time.

9. Crashes or voluntary or involuntary termination of a leg.

In 2017, the Special Rules provide penalty options for these events.

a. In the case of a crash, simulator program failure, computer error, or other reason, it may be necessary to prematurely terminate a flight. In such case, the baton holder chooses from the following options:

i. Restart the flight.
The baton holder may restart the flight. In this case, the pilot need not make a formal announcement. He merely relocates his aircraft at the last departure airport and restarts. The leg duration clock continues to be measured from the lead pilot's original "I have the baton" post, except in the case of a pilot restarting due to failure of the previous pilot to authenticate. A subsequent wingman transfer still requires calculation of time from the original baton post on legs where there is a time limit.
[Note that this quick restart option works best when the pilot crashes on takeoff or the pilot quickly realizes that he has not triggered the Duenna or that he has the wrong realism settings.]

ii. Abort the leg.
The baton holder may abort the leg. This option:
- Requires the pilot to announce a formal Abort;
- Returns the baton to the last departure location;
- Vacates any penalties accrued on the aborted leg;

- Allows the pilot to retain the baton (without penalty) or relinquish it to another pilot. [Note this is different than the General Rules]

The team begins a new leg as normal with both the baton pilot and wingman making the proper posts.

iii. Transfer to wingman.
The baton holder may transfer the baton to the wingman, as provided for in General Rule 9. A five (5) minute penalty is assessed. (Note that this provision modifies General Rule 9 which specifies 30 minutes)

And some special alternatives.

iv. Crash on landing at the declared destination airport (where the Duenna reports the position as the actual airport). The pilot posts the crash on the forum. The team may optionally move the baton to the declared airport and incur a 15 minute penalty to be served immediately from the crash post time. It then departs on a new leg. (When available, the team may optionally choose a normal wingman transfer.)

v. Crash enroute: relocation-and-leg-completion. The pilot posts the crash on the forum. *When no wingman is present, and when the Duenna indicates the geographic location of the crash (or the last known location before the crash),* the pilot may optionally relocate to an alternative airport and fly a new leg to the previously declared destination airport. The pilot may make a Baton Post and start a new leg (with a new duration clock) from any airport (a) not nearer to the destination airport than the last known flight location and (b) within 150nm of the direct great circle route tracing back from the crash site to the original departure airport. [Note that this relocation airport need not be directly on the original routing pathway.] In the new start, the pilot may without penalty retain the baton or he may relinquish it to a teammate; the aircraft may be kept in service (at no usage cost) or it may be substituted (consistent with other rules); and/or it may be refueled. The team must wait 15 minutes after the crash post time and then flies the new leg to the previously declared destination airport.

[Note that this option is the standard one for a mid-route crash due to flight into terrain, fuel starvation, overspeed stress, or simulator crash. On a crash, the pilot should immediately turn his attention to the currently running Duenna. *After waiting no more than a second or two, the pilot should ABORT the leg.* The Duenna will confirm and then close and issue a report. The report will indicate the last known enroute position of the baton. Failing to abort the leg may leave the pilot in the position of improperly closing the Duenna and thus missing the chance to get a report of the last known location. Pilots might well plan what to do before they actually face the shock of an enroute crash.]

vi. Crash enroute: false leg. The pilot posts the crash on the forum. *When no Wingman is present and no location is shown by the Duenna,* the Team may, <u>one time during the race,</u> optionally choose to execute a "false leg." The team moves the baton to the previously declared destination airport. It then calculates a "*wait time*" as follows:
(i) Generate the *leg distance* as the great circle distance (nm) between the departure and declared destination airports;
(ii) Calculate an estimated *leg time* in minutes as: (*leg time = leg distance*/5.50) [for Transport Jets, *leg time = leg distance*/6.80];
(iii) Determine the *elapsed time* (the forum time between the initial Baton Post and the Crash Post) in minutes;

(iv) Calculate the *wait time* as: (*wait time = leg time + 15 - elapsed time*).
The team then commences a new leg after waiting the calculated *wait time* (minutes) after the Crash Post. This option vacates any Triple Time leg duration penalty beyond that which might be incurred due to the actual *elapsed time*. The crashed baton pilot becomes the official pilot-of-record for the false leg. The false leg pilot's aircraft usage counts against any usage limits.

This provision represents a partial solution for a computer crash in which all information is lost – and it may be better than re-flying the entire leg but not so good as a wingman transfer or a relocation-and-leg-completion.

10. Artificial Vision and Artificial Landing Aids in 2017.

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 2017 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.)

11. New Pilots.

New pilots enjoy a two-time "rookie mulligan." Twice during the Race, each new pilot may initiate a "wingman transfer" without cost. Pilots must declare the wingman transfer as a 'mulligan' in order to claim the relief. A new pilot is one who has not yet been an official pilot of record or who is returning to the race after an absence of at least two years.

12. The Duenna.

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.)

13. 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.

14. Administration.

The 2017 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.

15. 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. This email will be checked only occasionally. It is not your main contact point.