

FLIGHT SIMULATOR AROUND-THE-WORLD RACE
2012 Special Rules FAQ
v1.00
February 15, 2012

Summary of Legs Types: Time, Distances, Aircraft, and Restrictions

- Normal leg: 2 hours, 750 nm. Normal race aircraft. The only restriction is the limited number of times a "Thoroughbred" may be used
- Wildcard: Unlimited time, one of 2,100 nm or less, one of 1,650 nm or less. Minimum aircraft weight 30,000 pounds Gross. Types limited to "normal" race-eligible aircraft or sponsored jets.
- Dangerous Airport leg: sponsored jets (or a DC-3) for a distance minimum and maximum of 250nm and 1,000nm. The time limit is 2½ hours.
- Special Aircraft and Team Flight: 4 Special Flights to be completed by the baton carrier in a particular aircraft over a particular distance. These flights may also be Team Flights with a maximum 3 hour bonus each to TOTAL maximum bonus of 6 hrs (30 min per participating pilot—other than Baton Pilot). Types restricted. Time and distances vary.

Q. Why is the Duenna required?

A. We're requiring the Duenna for a number of reasons. The software has reached a level of maturity at which we are confident that instability on its part will not affect the race. We will be able to track the race's progress online if all participants use the Duenna. Finally, the Duenna allows us to keep closer tabs on race pilots, giving everyone involved in the race additional confidence that competitors aren't attempting to gain an unfair advantage.

Q. Which version of the Duenna is needed? I already have an older one?

A. You need version Rev. 131 or later. (Rev. 131 was available on January 30, 2010. If you already have a version installed, you merely need the update.) Earlier versions do not have the same flight tracking capability. If this is your first race, install Rev. 44 (Feb 2005) and then install version Rev. 131 to update everything. Go here: <http://johannesmueller.com/fs/web/duenna/>

Q. Why start at 1500 UTC?

A. The timing represents a compromise between opening the Race in local daylight and the need to accommodate the real life schedules of our pilots across many times zones. BTW The LA Basin is rather pretty at Dawn.

2. Kickoff "One Six Right"

Q. What is the overall idea here? What are we trying to accomplish?

A. Your team is tasked with picking up eight celebrities and delivering them to Van Nuys KVNY before 1630 UTC.

- If your team has eight or more pilots, then everything is straightforward. Each pilot chooses a General Aviation aircraft and a different one of the many routes, starts from the appropriate outlying airport, flies to pick up the celebrity and guest, and then delivers the passengers to Van Nuys. Some pilots may choose to start in one of the aircraft prepositioned at Van Nuys and conduct the shorter operations directly out of that field.
- If your team has fewer than eight pilots, then you will want some pilots to double up deliveries. Several short pickup/deliveries originate from Van Nuys. With spirited flying, a team of four or five pilots might be able to complete operations within about ninety minutes.

- Note that several of the "special" routes indicate particular passengers or aircraft or timing.
- Please do remember to carry enough payload to properly represent your pilot plus your passengers. Please observe the hard ceiling. Please remind your teammates.

Q. How do we post and authenticate the legs?

A. You use the Duenna in the normal manner, posting both the jpg and txt files. You may additionally use the online tracking software—but please do *not* tick the "Baton carrier" or "Wingman" boxes. (The online system will be completely confused, so we shall rely on your posting the jpg and txt files.) You should post both the departure and landing for each of the passenger pickup-delivery legs. For example, you might post the following sequence:

- (a) "TornadoWilkes Departing KSEE for KAVX in the RealAir SIAI Marchetti SF.260 "
- (b) "Arrived at KAVX" [Post Duenna authentication.]
- (c) "Departing KAVX for KVNY with two passengers"
- (d) "Arrived at KVNY" [Post Duenna authentication]

Teams should make an effort to keep the postings of the multiple flights in a reasonable order. On these short flights, depending on your forum software, an individual pilot may have separate postings as replies to the first, or he may be appending his subsequent announcements to the original posting. (Because these legs are in such quick order, you may want to post the authentications together, after the two flights, in order to keep things tidy. But be sure that you post separate takeoff-landing-takeoff-landing announcements "live" as you takeoff and land.) As long as things are clear, then all will be well.

Q. Please explain more about what GA aircraft are eligible for the Kickoff.

A. Most 3-6 seat piston-powered GA aircraft will be eligible. (Note that the powerplant may be normally-aspirated or turbocharged, but not a turbine or turboprop.) The seat requirement includes both passengers and pilot (a passenger may sit in the right hand seat if he/she wishes.) Some aircraft will be faster than others—but in this event high speed will not be critical except for, perhaps, one or two of the legs.

The eligible class includes: Beech (Bonanza, Duchess, Baron, Duke), Bellanca (Viking, Turbo Viking), Cessna (C172, C177, C182, C185, C195, C206, C210, C310, C337, C340, C414, C421), Cirrus (SR series), Maule (M260), Mooney (M20, Bravo), Piper (Archer, Arrow, Cherokee, Tri-Pacer, Warrior, Comanche, Twin Comanche, Saratoga, Apache/Aztec, Malibu/Mirage, Seminole, Seneca), SIAI Marchetti/Aermacchi SF.260, SOCATA (TB Tobago and Trinidad series), and many others. Perhaps you can find something like a Beech Staggerwing or Twin Bonanza, a Cessna AW, a Cessna Bobcat, a de Havilland Puss Moth, a Messerschmitt Bf108, or a North American Navion. We aim to include 3-6 seat General Aviation aircraft that are/were not mainly commercial transport aircraft. (No Beech 18, Cessna 404, DC-3, Lockheed Electra, or Piper Navajo.) Your aircraft should be piston-powered. (No Beech King Air, Cessna 208, Cessna 441, Piaggio Avanti, Piper Malibu Meridian/JetProp, Piper Cheyenne, or SOCATA TBM.)

As a special treat, TP Aero has made their two flying Howard 500s available. Somehow this pair translates into two Howard 500s available for each team, to be prepositioned at any of the outlying starting airports.

The helicopter leg to (KTOA) may be flown in any rotor-winged aircraft, military or civilian. Otherwise, helicopter usage is limited to models that are widely used in civilian applications. The pilot going to Chino may use a Stearman Kaydet or a North American Texan, but military trainers are excluded from other legs. More generally, military aircraft are not eligible unless otherwise specified. This event spotlights General Aviation.

For 2012, the Nemeth Designs EC135 is a legal helicopter. (The engine modeling mixes MSFS types but produces a realistic and entirely appropriate performance. This is a highly-respected helicopter model and modeler.)

If you have a favorite seemingly eligible aircraft, please let us know and we'll gladly approve it. We are celebrating General Aviation and would like to encourage participants to enjoy flying a variety of aircraft.

Q. At the beginning of the event, how many aircraft are available at Van Nuys? At the outlying airports? How about later in the event?

A. A maximum of seven aircraft are available at Van Nuys. Each team has two C-172s. The team may assign both aircraft to a single route or they may send one aircraft to each of two routes. The same is true for two helicopters. You also have one Piper J-3 Cub, one Stearman Kaydet and one Lockheed Vega. No other aircraft are available at Van Nuys. At the outlying airports, you have available an infinite number of aircraft—and duplicates are allowed. (Parenthetically, each team has available two Howard 500s and no more.)

Once it reaches Van Nuys, you cannot turn an aircraft around for further usage. The last is a minor point. For example, you cannot use a Cessna 421 to carry a passenger to Van Nuys, then turn around and fly the C421 out to a nearby airport and retrieve an additional passenger.

Q. The default Lockheed Vega does not list a passenger capacity. What do we do?

A. The default Vega simulates those used for individual long distance flights. Here we imagine having a more normal Vega which was designed for four-six passengers. (Under Aircraft|Fuel and Payload|Change Payload, you can simply enter a "340 pound" pilot and a "340 pound" navigator to simulate a pilot and three passengers. You may wish to reduce considerably the default fuel load.)

Q. What happens if an aircraft crashes or the leg is otherwise invalidated?

A. If there is no passenger, the pilot returns to the departure airport and re-flies the leg using the same aircraft if he wishes. There is no penalty. If a passenger is on board, the team forfeits this specific bonus opportunity—the pilot can transfer to begin another unassigned passenger-pickup route.

Q. Can the teams employ Wingmen on these flights?

A. Technically, the Wingman Rule is not in effect. Teams may send more than one pilot to each passenger pickup. However, once a team has picked up the passenger, there is no advantage to send a second pilot because there is only one passenger available at each point. Teams are encouraged to send their pilots to as many different routes as they can manage—there are plenty of choices.

Q. If eight pilots arrive at Van Nuys before me, I might as well abort my flight, right?

A. Previous Kickoff experience has shown that small errors creep into pilots' setups, authentications, and so forth—some of which reveal themselves only on close examination of the Duenna logs after the baton leaves the field. Many pilots will be learning about, or refreshing their memories of, the RTWR system. Prudence suggests that teams anticipate having to complete more than eight deliveries to be sure that at least eight count.

Q. Are computer crashes treated differently than pilot-error crashes?

A. No.

Q. The Hard Ceiling altitude restriction is 6,000 ft. What gives?

A. We want our celebrity passengers to feel comfortable—many of our aircraft are without oxygen/pressurization. (As important, this feature brings the mountains into your flight planning.) Note that the Duenna records your maximum altitude. You probably want to give yourself a large margin of error

here—as the 6000ft maximum is a firm restriction. Note that this is the true altitude (feet above sea level) and not "pressure altitude". The only exceptions to the restriction are Big Bear City (L35) and Inyokern (KIYK): these routes have a Hard Ceiling of 9,000 ft—because they will require "high flying". Violations of the Hard Ceiling are treated as a crash and invalidate the flight. Please leave a margin of error when you choose how high you fly.

Q. The rules require that each aircraft carry the weight (170 pounds) of the pilot for the full route and, additionally, the weight of at two passengers (340 pounds) for the delivery part of the route. What if I forget?

A. Your "delivery" does not count—as you simply forgot to pick up your passengers. It might be a good idea to set up your aircraft with a pilot and two passengers before beginning and thus avoid having to "add" passengers at the pickup point. (Imagine that for the first leg you are taking two friends who will give way to the celebrity and guest for the second leg.) You should check the payload weights...twice.

Note that the "Special Passenger Pickup" routes do not include guests. The retired aeronautical engineers (in the Lockheed Vega route) are traveling alone. That pilot need only carry a pilot and three passengers throughout. The other special pickups have only the pilot and a single passenger. (We do not know the true weight of the actress at Aqua Dulce. Allocate 110 pounds, or more, and that will be fine.)

Given the busy nature of the Kickoff, the need to set up unfamiliar aircraft, and the rustiness of the pilots, it is entirely understandable that pilots make mistakes. Teams may wish to remind their teammates to load the proper weights before beginning their routes—to avoid this common oversight.

Q. What if we complete the initial passenger pickup but not the inbound delivery leg?

A. No bonus is awarded until you complete both legs.

Q. May we combine passenger pickups so as to make the flights more efficient?

A. No. Many of the celebrities will be bringing a guest to the gala. One aircraft per pickup, please.

Q. Can a pilot fly in one route and then "magically" jump to another starting airport to fly another passenger pickup route?

A. Yes you may. This "magic jump" destination is limited to the four outlying starting airports or Van Nuys itself.

Q. How about at the pickup airport. Do we have to taxi to the FBO and then taxi back to the active runway?

A. No. Keep it simple. After landing, come to a full stop, declare yourself arrived, and post your verification. Then "magically" position yourself on the active runway (ALT+W+A), *being sure to have the proper passenger weights.* Then declare your takeoff, activate the Duenna, and you are under way. You need not taxi at all.

Q. Late pickups. The Certified Flight Instructor at Santa Paula (KSZP) and the actress at Agua Dulce (L70) are free only after 1600 UTC (0800 PST). May I fly to the pickup airport before 1600 UTC and wait for the passenger to become available?

A. Yes. You may arrive at Santa Paula or Agua Dulce at any time but the delivery leg cannot commence until after 1600 UTC. (These legs may be seen as "backup" legs or ones to be flown by a late arriving pilot.)

Q. What happens if we do not finish the event before 1630 UTC (0830 PST)?

A. You may simply halt operations and take the bonus time that you have already earned. Or you may continue operations until a later time. The only cost to doing so is that you must delay your Round the World Race departure until you halt your "One Six Right" operations.

Q. What if we finish before 1630 UTC? May we start flying around the world?

A. No. The 2012 MSFS Around the World Race begins at KVMY at 1630 UTC (0830 PST). As in years past, teams may not begin the Around the World Race until the official threads releasing the Baton are posted on their forums by the Race Executive Committee. There will be separate forum threads for the Kickoff and the Race.

3. Routing Requirements.

Q. What does airspace denied mean? What constitutes the airspace of a country? What about landing in the country?

A. Race aircraft may not cross the airspace of, nor land in, these nations for any reason. For RTWR purposes, the restricted airspace is defined by the boundaries of a nation's main landmass plus any explicitly designated offshore islands. Small islands and overseas territories and departments do not count for the airspace. Pilots should give these national boundaries a wide 10-20 mile margin because maps can be imprecise. In addition to the airspace, pilots may not land at airports in the nation *nor* in any of the nation's outlying islands. Any race aircraft which crosses the boundaries of, or lands in, those nations may not score a completed race leg or wildcard leg. Should both the baton carrier and the wingman violate the restrictions, the leg should be abandoned and restarted at the airport of the last successful baton landing.

For practical reasons, the rule is slightly different for airspace restrictions and landings. We cannot precisely monitor overflights of small outlying islands while we can surely identify landing at airports on those islands. The weaker "no military landings" restriction also applies to both the mainland as well as the offshore islands. (Our not enforcing the prohibition on overflying small islands is due to our inability to track such overflights with precision. The landings are recorded so that we can enforce a landing restriction.) For example, Myanmar's Coco Islands are far offshore and we cannot truly know whether an aircraft flies over the islands and we don't want to penalize teams who inadvertently fly over some small unknown island chain. However, both the pilot and the race marshals can know with certainty if the pilot lands at VYCI, a Myanmar airport.

Finally, we shall make every effort to ascertain whether a leg has violated prohibited airspace. The standard will be a direct great circle path between the departure and destination airports. If there is additional evidence that the flight made a wide berth of the restricted airspace, we shall take that into account. (The online tracking might help.) The bottom line is to leave a goodly margin of error when you are flying near a restricted airspace. Those Iranian interceptors may not be willing to give you the benefit of the doubt. And we hear the food is terrible.

Q. Of particular importance is the northern mountainous territory of Myanmar. How do we know if we have violated Myanmar's airspace.

A. All normal legs between India/Bhutan and Southern/Eastern China should pass through Chengdu (ZUUU). We shall assume that flights complying with this provision are legal. (That said, pilots should avoid wandering deep into Myanmar's airspace. If they do, they will invalidate their flights.) Similar legs that do not pass through ZUUU will be illegal unless proven otherwise.

Q. What does "airspace is open but no military aircraft may land" mean? What is a military aircraft? The WWII based fighter I fly is modeled on a US registered private aircraft.

A. Two questions—two answers.

A military aircraft may fly over these nations, but that aircraft may not land (or takeoff to begin a baton leg) at any airport in those nations. If you are forced down for fuel, then you should transfer the baton, restart the leg, or abandon the baton. Please do exercise care with the "foreign military sensitive" countries.

A military aircraft is any aircraft designed and built primarily for military usage. This includes all fighters, bombers and military only trainers and cargo aircraft. Warplanes that are now in private service are considered military aircraft.

The DC-3/C-47 is a civilian aircraft for our purposes—but cannot use a military repaint in these nations. Also those many prop liners which began life as WWII transports but their primary role was as an airliner after the war. Along these lines, the Howard 500 is clearly a civilian aircraft. (The On Mark Marksman serves as a modified A-26 Invader and thus as a military aircraft.)

Q. There seem to be fewer "foreign military sensitive" nations this year.

A. Yes. Though some special negotiations and a sense of international goodwill, three nations of the "Arab Spring" have agreed to allow the RTWR to pass through their territory. This conditions holds for this year, but the future remains uncertain.

Q. The continental landmass is a tricky concept for some cases. Can you clarify Turkey and the Ukraine and Kaliningrad as being either European or Asian?

A. For most cases, Russia's western national border from the Arctic to the Black Sea will serve as the demarcation between Europe and Asia. For Turkey, the Bosphorus Strait is the dividing line. Istanbul (LTBA) is in Europe, Samandira AB (LTBX) is in Asia. The Ukraine, including the Crimean Peninsula, is on the European continental landmass. Similarly, Scandinavia is part of the European landmass. Kaliningrad, the Russian enclave between Poland and Lithuania, is treated as part of Asia. Obviously, these are detail interpretations of the RTWR continental landmass requirements and not proclamations of deep geographic principles. The French DOM (*départements d'outre-mer*) are not part of the European landmass...!

Q. May we use airport scenery addons?

A. You may use only airports that are in the MSFS data base. Your observing this restriction is especially important when you are meeting the routing requirements because some addon packages include many extra airports. (This warning is especially relevant for Russia, China, Australia and New Zealand.) You should check with your teammates to be sure that your critical airports are in the MSFS data base. Dangerous Airports excepted, packages that realistically enhance existing airports are just fine.

Q. The runways at Wake Island (PWAK) and Minami Torishima (RJAM) are closed again for 2012. Is this important?

A. Hmm. Perhaps.

Q. I still have a few sceneries from previous RTWR races, ones that were released by the Executive Committed for that year's events. My I use those addons (with extra night lighting and parking slots) in this year's race.

A. No. Please take care to disable those no longer valid sceneries.

4. Sponsored Aircraft

Q. The use of jets in 2012 seems to be limited to a set of civilian transport aircraft by Airbus and Boeing. Is that right?

A. Yes. This is a special feature of the 2012 race which emphasizes the flying of commercial transport jets into dangerous airports. This year we are taking a pause in the expanding employment of other jets. We aim to have an enhanced package for different types of classic and modern jet aviation in 2013 and beyond.

Q. Which models/simulations of these sponsored commercial transport jets are legal for the 2012 RTWR?

A. All popular and properly modeled simulations of these sponsored commercial jets will be eligible. As far as we know, the eligibility list includes: the default MSFS models, POSKY, Project Airbus, Historic Jetliners Group, Ready for Pushback (Ralf Tofflemire), FSND (Alejandro Rojas Lucena), Thomas Ruth, PMDG, Level-D Simulations, iFly, Commercial Level Simulations (CLS) and JustFlight, Aerosoft, Wilco, Flight One, Dreamfleet, Captain Sim, PSS, Aerosim, and Overland (Simmers Sky). The David Maltby and Jens Kristensen Comets and the AFG (HJG) Caravelle are eligible.

Note that eligibility is limited to the specifically designated sponsored civilian transport jets made by the modelers above. Not all jets by these modelers are eligible. (For example, the HJG Boeing B707 is eligible, the HJG Boeing C-135/KC-135/EC-135 is not. The Captain Sim Boeing 7x7 jetliners are fine, the Boeing B-52 is not. Not the HJG L1011 nor the HJG Concorde.)

We are not able to test all of these simulations and would like to know if any of the above are palpably unrealistic. The emphasis here is on flight dynamics and not systems complexity. If you know that a particular simulation is wildly inaccurate in a way that would substantially affect the race, please inform the committee. (It would be helpful to provide as much evidence as you can.) Thus, the above list is tentative: the simulations should be legal—pending our learning otherwise. We shall be happy to restrict the list if doing so makes sense.

If you would like to fly another high quality simulation of one of these aircraft, please let us know well before the event. (Again, you will want to provide a great deal of information about the aircraft's performance.) For 2012, our expectation is that we shall limit our attention to the very popular and often-used simulations of these standard aircraft. Please do not nominate obscure models. Models that were originally designed as "AI" aircraft are not suitable.

Any transport jets with a $Mmo > 0.93$ or $Vne/Vmo > 400$ will need pre-clearance from the Executive Committee. Such requests will receive special and skeptical scrutiny. (Similarly, A320/B737 family jets with a $Mmo > 0.85$ or $Vne/Vmo > 350$ will need special clearance.) The emphasis here is on flying commercial jets into difficult situations and we expect quality simulations to have an appropriate "speed" profile. That said, we want to accommodate pilots who wish to fly their favorite high quality simulation, even if it turns out to be marginally fast. More important, we want to discourage a search for a racing advantage.

Finally, for the DC-3 you may use the default MSFS versions as well as the Manfred Jahn (FS9&FSX), MAAM-SIM (FS9) and Aeroplane Heaven-Just Flight (FSX) versions. (For the MSFS version, the by-now standard modifications by Mark Beaumont, Dave Bitzer, Trev Morson, and Jay McDaniel are fine.)

Q. I understand that the sponsored jets are civilian commercial transports and that their military equivalents are not allowed. What about a normal civilian sponsored transport jet painted with a military livery? Say the default B747-400 portrayed as Air Force One?

A. The spirit of the RTWR says "yes" but we shall have to say "no." We are worried that we will confuse the matter if we allow military paints. (It is easy to imagine someone who sees a military aircraft in the race might want to install a similar military aircraft—one which might not rely on the civilian flight model.) It will be safer if we keep things simple: civilian transport jets with civilian liveries in 2012.

5. Dangerous Airports.

Q. These are not really dangerous airports. Pfffft.

A. These airports were suggested by the History Channel's *Most Extreme Airports* (2011); the list also includes a number of other interesting airfields. The emphasis is on commercial transport aviation rather than, say, bush flying. Many of the designated airports can provide a challenge when the weather and visibility deteriorate. Pilots may wish to plan ahead for the local weather and terrain; a missed approach might be part of the preparations. If you fly under blue skies, then you should find these airports distinctive rather than dangerous.

Several of the airports are far more interesting when the approach is flown with a full passenger load. (Passengers are not required for the RTW Race.) Pilot's choice.

Q. How many times may I land at a given dangerous airport?

A. You may complete each dangerous airport leg only once. (You may fly a normal leg into the airport without limit.)

Q. Three airports (Tegucigalpa, Rio de Janeiro, and Kai Tak) are mandated by the routing requirement and are also dangerous airports. Do we have to fly a dangerous airport leg into those cities?

A. No. A normal or wildcard leg will fulfill the routing requirement with a full stop landing in those city airports. If you choose to fly a dangerous airport leg into the designated airports, you may earn a bonus as well as fulfill the routing requirement.

Q. Two airports (Tegucigalpa and Kai Tak) reward using a specific runway. Do we have to use that runway or is it optional?

A. The runway choice is optional. To earn the extra bonus of 30 minutes for that airport, you must land a transport jet on the designated runway. If you find that the weather mandates an alternate runway, then you may use the alternate runway and eschew the bonus. To authenticate the runway bonus, you should use either the online Duenna tracking (which shows the landing direction) or a screenshot of the MSFS Flight Analysis diagram zoomed in to show the final approach. (Note that the Duenna logfile tracks the final approach and landing. If you are unable to use either the online tracking or the MSFS Flight Analysis, you may notify the race committee of your problem and show the evidence from the Duenna log to confirm your bonus.) The bonus runway for MHTG is referred to here as Rwy 2. It is sometimes labeled Rwy 1. Same runway, whatever the name. Finally, the DC-3 cannot earn this extra bonus.

Q. There are established approaches to these airports. Need I fly the defined approach?

A. No. The established approach procedures may prove helpful for the dangerous airports, but they are not required. You can find many of the approach plates online.

Q. What if the weather is simply awful and I have to divert? What happens then?

A. For the dangerous airport flights, there are no diversions. You may circle and hope the weather improves. Or you may restart or abort the flight. The subsequent flight need not be a dangerous airport leg—you may switch tactics. The possibilities of severe weather conditions should be part of the team's overall routing strategy.

Q. Why would I ever fly the DC-3 rather than the much faster jets?

A. Under ideal conditions, an experienced ATP pilot will prefer the jet. However, in some circumstances it might make sense to take the slow and steady DC-3 into a dangerous airport rather than risk a high-speed jet landing. Your "Dangerous Airport" leg might then be closer to 250nm than 1,000nm. That said, the DH.106 Comet could be an interesting alternative.

Q. My terrain makes landing at one of the airports very difficult. Can I change the terrain to make things easier?

A. Well, no. Terrain is a major factor at a number of these airports. You should check the approaches ahead of time to understand just what is involved. Sometimes the terrain challenge is more subtle than it might first appear. If your own simulation setup prevents you from flying into an airport, please leave that leg to one of your teammates. (The popular addon mesh grids may accentuate the visual impression of a dangerous landing—but will probably not affect the actual danger.) You *may not* disable your mesh simply to make the landing easier. You are on your "pilot's honor" here.

There are exceptions. FSX pilots may use the elevation correction for Madeira's LPMA. (See John Sousa's `lpma_fix.zip` at FlightSim.com.) FS2004 pilots may wish to install Christian Stock's elevation correction for Lake Wakatipu near Queenstown. (See your teammates for availability.) If you have a widely available "fix" for elevation and terrain—one that makes an airport more realistic—you should clear it with the race marshals before installing it. The emphasis here is on realism rather than on ease of landing. As you would expect.

Q. May I make realistic alterations to the Dangerous Airports? How about realistic addon sceneries, both freeware and payware.

A. You may not alter the scenery to either (a) extend the runways beyond the length in default FS2004-FSX or (b) add runways. You may use realistic freeware or payware scenery as long as the runways remain unchanged from the FS2004-FSX standard. For example, in December 2011 the runway at EKVG was extended 1,000 feet. You may not extend the FS2004 or FSX runway—even though doing so would make it more realistic. The airports, and runways, were selected as "Dangerous Airports" based on their configurations in FS2004-FSX. (*This especially strict restriction, barring even realistic runway upgrades, applies only to the Dangerous Airports.*)

Realistic additions of navigation aids, lights, and so forth, are fine. *Fictional* navigation aids, lights, etc, are illegal. If you have no reason to know that the improvement is realistic, assume it is fictional. (For example, if the author explicitly says the improvement reflects reality, then fine. If the author turns a small dark airstrip into a lighted ILS-equipped airport, then you should assume the change is fictional.) If you have already installed an airport scenery, you do not have to remove it unless you know that its nav aids/lights/runways have been upgraded from the default standard. This is a matter of good faith.

DEFAULT SCENERY ONLY. You may not install any addon/replacement scenery for Manizales La Nubia, Colombia (SKMZ) or Mangalore Bajpe, India (VOML) or Sucre Juana Azurduy de Padilla, Bolivia (SLSU). The RTWR permits the default scenery only. (Recent addons extend/add runways or install lights which will eliminate these airports' special role in the RTWR.)

Q. Any freeware scenery additions that you would recommend?

A. There are a number of good sceneries for these airports. These are not required...though they will make the event more fun. Some enrich the approach and landing while others offer more of an aesthetic enhancement. For many of these famous airports, there exist excellent payware representations as well.

Hong Kong Kai Tak, SAR, China (VHHX).

Your best bet is Jim Vile's freeware "Kai Tak 98" scenery which adds the IGS 13 nav aid, the checkerboard, and some additional eye-candy.

For FS2004: `kaitak98.zip` at FlightSim.

For FSX, get `vhhx_ils_jv.zip` and `vhhx_ils_jv_v1.1.zip` at AVSIM

<http://library.avsim.net/search.php?SearchTerm=hong+kong+vile&CatID=fsx&Go=Search> .

Or you can use the compilation by "Fourbe". Look at Simviation:
<http://simviation.com/1/search?submit=1&keywords=kai+tak&categoryId=>

The spectacular 9Dragons (FS2004) scenery is wonderful. However, the designers recommend that the user disable building crashes—a move that is not allowed in the RTWR. You might wish to use another scenery for this race.

Tegucigalpa Toncontín, Honduras. (MHTG).

Henry Carcamo: At FlightSim.com, get flytegv2.zip, mhtgv2up.zip, and mhtgv2af.zip. (FS2004)

Rhett Browning: At FlightSim.com or AVSIM, get mhtg_v06.zip. (FSX)

For a better representation of the surrounding mountains and to make the city buildings appear correctly, you might try Jose Luis Aguila Boudib's Honduras Terrain Mesh and Landclass (FS2004): hondmesh.zip at FlightSim.com. (Even if you have a payware mesh, you might profit from the landclass.) (FS2004/FSX)

These Tegucigalpa additions add to the visual accuracy of the airport environment and may thus help you recognize the appropriate markers used by real world pilots to execute their final approach. The two free-ware airports change the local terrain to reflect reality and slightly ease the approach. Normally this would be illegal—but these two MHTG addons are officially approved. While not tested, the payware LatinVFR Tegucigalpa Toncontín looks fine as well.

Madeira Funchal, Portugal (LPMA).

John Sousa has a correction for the default elevation in FSX. See lpma_fix.zip at FlightSim.com.

Norfolk Island, Australia (YSNF).

Teams may visit Norfolk Island in this year's event. Uncorrected, the island can disappear or appear totally bizarre. Happily, there are several extant corrections for the anomalies. In any case, check the scenery before you commence your leg.

FS2004.

- Ian Thatcher produced a simple fix via a landclass file. This is part of his Australian landclass. The original file is no longer available: see your teammates for a copy of the small landclass file. (Or get Roach's copy...see next.)
- Lawrie Roach designed a Norfolk Island International scenery with Thatcher's landclass fix included. (You can simply install the landclass and ignore the airport, it would seem.) See `norfolk_island_v2_ysnf.zip` at FlightSim.com and at AVSIM.

FSX.

- Robin Corn, Ian Warren and John Manaras built a full scale photoreal Norfolk Island. See `norfolkphotorealfsx.zip` at FlightSim.com or `norfolk-photoreal-fsx.zip` at AVSIM.
- Also, if you have OZX installed and active, you may already have a correction for Norfolk Island.

We wish to emphasize that no additions to the base scenery are required.

6. Normal Legs and Wildcards.

Q. Why do we have to announce the aircraft type and model and modeler? In years past this has been an unobserved formality.

A. This year we have two new restrictions on aircraft. First, the aircraft must be on the "White List" of eligible aircraft. You must fly an aircraft that is on this list—and announce that you are doing so. Second,

we have restrictions on the usage of some very fast aircraft (the thoroughbreds). When you announce your aircraft type and model and modeler, you are also announcing the status of that aircraft as well. Finally, we have a very specific distinction involving different simulations of the DH.103 Hornet—which require knowing the type, model, and modeler. The title of the aircraft, as retrieved by the Duenna, does not identify the actual aircraft. Thus, you are required to announce the type, model, and modeler.

For example, "WombatOne has the baton flying the WBS P-51D," has a different meaning than "Moses03 is flying the A2A P-51H." The latter counts against the thoroughbred leg limit. Obviously, "flying the Mustang" will not do the job. Other examples include: "salt_air has the baton flying the FS2004 default DC-3," or "apollosmith is flying the dcc P-38M," or "buzzbee flying the FlightOne B727-200." Please make the announcement in good faith—typing the extra word or two is not much extra effort. A repeated failure to identify the aircraft will quickly lead to penalties.

Q. "Pilots will remain on board their aircraft." Say what?

A. In all legs, normal legs and others, the pilot will remain on board to fly the aircraft. When the pilot weight is specified in the payload section, the pilot weight should remain. Please do not excise the pilot in an attempt to reduce the aircraft payload. If there is no pilot specified, then don't worry. You might ask, "Why would we mention this silly point?" ... We shall not routinely check for the pilot weight; instead we will assume reasonable competitors. (Savvy pilots will retain extra staff on board...who else will serve coffee?)

Q. The Special Rules now require minimum settings such as autogen/scenery settings at "normal". And they require 3D clouds and cloud density minimally at medium. The General Rules already suggest these settings as a minimum. Why the rule? How is it enforced?

A. This is not an enforceable rule. The Duenna does not assess your scenery settings so no one will know what you do. It is a matter of pilot's honor in complying with the explicit rule.

In prior years, these settings were suggested as norms. This year has a stronger statement. These are the rules and any act to diminish of your scenery/clouds/mesh settings below these minimal levels would be an explicit violation of the rule. (People have a word for this...it's called...er...cheating.) No user-set bald earth and cloudless skies. You have surely been meeting and exceeding these minimal standards. The rule merely gives confidence that everyone else is as well.

If your computer will not allow you to run these settings and retain a fluid frame rate, then you should reduce your settings. No problem. Please send a quick private email to the Committee and the Committee will grant you a waiver. (Please let us know what settings will work for you. We will trust your judgment.) We understand that people's equipment will vary and we surely want everyone to participate. We stand in awe of you all who are nursing your "classic" computers into the current era.

In FSX you may and probably should use Jim Keir's "Lumberjack 5x" program to clear the trees on the final approaches of your airports.

AVISM: <http://library.avsim.net/search.php?SearchTerm=lumberjack&CatID=root&Go=Search>

Q. Normal legs are slightly longer than the permanent rules? And two wildcards?

A. Yes. The extra length might help span gaps between airports in remote areas. Note that the two hour limit remains. You will probably want the wildcards to cross the oceans.

Q. The wildcards impose weight restrictions on the aircraft used. How does that work?

A. The aircraft must have a takeoff weight of 30,000 pounds. (You can check your takeoff weight in the aircraft/fuel menu in MSFS.) You may not overload the aircraft. If you have any questions, ask.

7. Overspeeds and the Flight Regime.

Q. Why the overspeed penalty? How does it get applied? How do I know if I have an overspeed?

A. It appears that FSX does not generate an overspeed-related "aircraft stress crash" in the same way that FS9 does when the pilot exceeds the Mmo (max_mach) parameter. Both simulators enforce a Vne (maximum_indicated_speed) crash. This rule approximately levels the playing field for both FS9 and FSX pilots. It essentially treats 90 seconds in overspeed as though MSFS had created an overstress crash.

The Duenna tracks the amount of time in overspeed. As you fly, you can assess the cumulated overspeed time by looking at the Duenna panel. And at the end of the flight, you can discover your time in overspeed by looking at the Duenna log file.

The overspeed time, however, is not highlighted in the Duenna's graphical report (the jpg file) nor in the online flight tracker report. A flight with excessive overspeed will show "green" and be reported as a valid flight. Thus, to identify a possible penalty it is necessary to examine the Duenna textfile. A pilot should, before releasing the baton, be sure that he has completed a valid leg (all green) and that he has not exceeded 90 seconds duration in overspeed.

If the pilot notes an excessive overspeed during flight or on landing, then he can execute a straightforward wingman transfer (30 minutes penalty) or abort/restart the flight. If he waits until after releasing the baton, the options are less desirable. At best, the team can make a retroactive wingman transfer (which costs 45 minutes). Otherwise the team must return to the initial departure point or take an additional 2 hour penalty. As a pilot, you might want to double check your overspeed before releasing the baton. You might be especially careful to check for overspeed before releasing the baton after a long wildcard leg.

In practice, this rule means that we shall pay close attention to pilots who fly jet legs and high speed civilian turboprop legs. ("Warbird" aircraft typically have an Mmo sufficiently high that it rarely matters—but those aircraft are subject to the overspeed penalty as well.)

Q. Does the overspeed duration penalty apply to both FS2004 and FSX pilots?

A. Yes.

Q. Why the requirement of the Duenna system for jets and turboprops?

A. The Duenna reports the time in overspeed, the Flight Analysis Screen does not. The Duenna requirement applies to the classes of aircraft most likely to be affected by the overspeed restriction rule. (The strong requirement for the Duenna system does not apply to piston-powered aircraft in 2012.) If your system cannot handle the Duenna, then please do not fly jet or turboprop legs. If you forget to activate the Duenna, go back. If the Duenna fails in mid-flight, you should probably restart. You may appeal but it will be difficult to marshal enough evidence to prove you did not overspeed.

8. Formation Flights

Q. Another event? Lots of extra stuff to worry about?

A. These are "normal baton legs" flown more-or-less as any normal leg. The difference is that the lead pilot and the wingman coordinate their takeoffs and landings so that they are in close proximity. If the lead and wing are both ready to go, then the formation flight will take little longer than a normal leg. Not much extra here other than an increased attention to the lead-wingman relationship.

Q. If the lead pilot crashes, can the wingman take the baton and complete the leg? If the wingman crashes, can another pilot become wing?

A. If the lead pilot enacts the Wingman Transfer rule, the Formation Flight is automatically terminated and the leg becomes a normal leg. The normal rules and penalties apply. If the wingman crashes, then again the lead would terminate the Formation Flight and follow the normal leg rules.

Q. What if I do not crash but instead have a computer failure? How about a technical error? What if I forget to start the Duenna?

A. Sorry, a pilot error crash and a computer failure are equivalent here. Equally, a leg that is ruled invalid due to a consequential setup error will also forfeit the FF bonus. The same for a failure to use the Duenna...or a Duenna crash. Both pilots must satisfactorily complete and document their legs to earn a bonus. (If you cannot use the Duenna, do not take on the optional Formation Flight.)

Q. Is there a penalty for failure to complete a Formation Flight?

A. There is no explicit penalty. However, the team will forfeit one of its 6 chances at the Formation Flight bonus of 30 minutes.

Q. This could be awful. If the wingman crashes, then there is an opportunity cost of 30 minutes.

A. Yes, you are correct. The Formation Flight encompasses some risk and should be planned accordingly. However, your team does count only the top five of six attempts...so you can tolerate one bad outcome without it's being a disaster.

Q. Sometimes the weather will make things very difficult. Can the team cancel the Formation Flight and try another time?

A. Once declared, the Formation Flight is active and subject to failure. If things look dicey before the leg, you might choose to postpone the FF opportunity until a later time.

Q. In a Formation Flight, the lead pilot releases the baton only after both pilots have posted their landings. Do both pilots have to post their authentications before the baton is released?

A. No. The authentications and claim of bonus time may follow in the usual timely manner. You are right, however, that the baton may not be advanced until *both* the lead and the wingman have landed and posted that they are down safely. If the baton is passed prematurely, the Formation Flight fails. For this reason, a formation flight might take a few minutes longer than a normal baton leg.

Q. I ain't no math wiz. How do I figger out this high falootin' formula?

A. This is easy. $FF\ Bonus = 30 - |D1 - D2|$ where D1 and D2 are the Duenna-indicated durations of the first and second pilots. You take the absolute value of the difference; you round fractional minutes up to whole minutes. Note that you earn a full maximum bonus when you and your wingman are within a minute of each other. (For example, say you stop 59 seconds before your wingman. Then $FF\ Bonus = 30:00 - 0:59 = 29:01$ which rounds up to 30:00.)

Q. Do we use the Duenna "Flight Time" or "Baton Time?"

A. Flight Time.

Q. What if I forget to use the Duenna's "Auto-arm" feature?

A. You will have to certify the takeoff and landing times, and thus the exact duration of the flight. This information lies in the Duenna's logfile. You should declare your mistake and show all the information in your thread. (You will want to show both your logfile and your partner's logfile. You may ask your teammates for help here.) As long as the Duenna record is complete, and there are no irregularities, all should be well. Repeated failure to use the "Auto-arm" feature will attract a skeptical eye and possible committee action, including voiding the bonus.

Q. Can the pilots cheat to create a false impression of equal flight durations?

A. It is possible to compare the flight durations directly by examining the detailed Duenna flight logs. Those logs show the exact time that each flight took off and landed. Any instance of a team's artificially manipulating the results—such as delaying the Duenna "landing" report or "taxiing" to keep the Duenna alive—will forfeit the Formation Flight *and incur a severe deterrence penalty*. Such actions will be considered an intentional violation of the rules and a breach of the mutual trust that makes the race so enjoyable. (The lead pilot may legitimately delay his landing by circling over the destination airfield until his wing arrives. He may not land and keep the Duenna running until the wing has landed in order to claim a simultaneous arrival.)

9. Special Aircraft Requirements for the 2012 Race.

Q. Why an explicit White List?

A. In response to participants' requests, we are limiting choices so that pilots can concentrate on flying rather than on scouring the libraries seeking an edge from some marginal flight model. The White List includes the race aircraft that have been popular over the years. We add a few more.

Q. Aren't there some aircraft flown in previous years that are not on the list? Are these currently eligible aircraft sure to be eligible in the future?

A. This list applies only to the Special Rules of 2012 and is intended both to simplify pilots' aircraft searches and selections and to create some competitive balance among a larger number of interesting aircraft. About the future, we shall see what happens this year. (This is a "special" rule and not a "permanent" rule.)

Please note that this is an "Interim White List" for 2012. The White List concept will surely be subject for further review in the coming year. In one sense, 2012 is a pause in the hope of our developing a more systematic way to handle aircraft eligibility. There are several difficult issues to be resolved: we in the community all have work to do in the future.

Q. What about port-overs, from FS2004 to FSX? Are they eligible? Under what conditions?

A. Straightforward port-overs from FS2004 to FSX are governed by the same rulings that apply to the original model. For example: porting the FS2004 A2A P-51H is legal, it is implicitly on the "White List," and it is treated as a thoroughbred.

But note well. You may not make "corrections" to the FS9 flight dynamics (in the airfile or the aircraft.cfg) to fit FSX. When you fly a FS2004-native aircraft in FSX you must fly it with exactly the same flight dynamics parameters that were modeled into the original FS2004 simulation. If necessary, read this last sentence again.

Further, you may not fly "port-overs/corrections/updates" by Mark Rooks or Bob Chicilo or any other author who often alters the flight dynamics. (These "port-overs/corrections/updates" have their proper place in our hobby. But they are not suitable for RTWR use.) Any alterations to the flight dynamics parameters will make the aircraft illegal and invalidate any legs completed in the aircraft (and earn a serious penalty if the illegal usage seems intentional).

The only exception, and this is a minor exception, is that you may alter the starter torque (normalized_starter_torque=xx) slightly upward to allow you to start the FS9 engines in FSX and idle friction (idle_rpm_friction_scalar=xx) slightly downward to keep the engines running. But these changes should not affect the performance of the aircraft in any measurable way. (If it does, then the alteration is illegal.)

Q. There are several Hornets on the list. And in different places with different restrictions. What is going on?

A. We are happy to have two quality simulations of the DH.103 Hornet, the older AlphaSim payware Hornet for FS2004 and the newer Rob Richardson freeware Hornet for FSX.

The FS9 AlphaSim/Virtavia DH.103 Hornet is the now familiar aircraft, a favorite during many previous races. The older simulation includes several versions of the Hornet under the same flight dynamics. All visual cues aside, this is a single model for RTWR purposes. It falls under the thoroughbred category.

In 2010, Rob Richardson produced an excellent FSX-native DH.103 Hornet. For our race, it will require special attention—team members should be sure that their teammates are careful about this. First, the original flight dynamics are not suitable for the RTWR. Happily, colleagues from SOH (Larry, Tom, and Dave—we use the "SOH Group" name designation) produced a flight model that is suitable. To be eligible, the Richardson DH.103 Hornet must use the SOH flight model. Call it the RR-SOH Hornet. http://www.sim-outhouse.com/sohforums/local_links.php?action=jump&catid=4&id=3564

Second, the specific aircraft model matters. There is a distinction between the (RAF) Hornet F.1 and the (FAA) Sea Hornet F.20 and NF.21, on the one hand, and the (RAF) Hornet F.3 on the other. The RAF Hornet F.3 does not have external tanks modeled. Although it is technically possible to do so, *when flying the Rob Richardson Hornet F.3, pilots may not use the external tank capacity.* (Note that the Duenna records the fuel on takeoff and landing. Usage of the external tanks for the Hornet F.3 will invalidate any completed leg.) In practical RTWR terms, this means that *pilots should probably choose the F.1 Hornet and not the F.3 Hornet.* (Please check to be sure about not only the type but also the model of Hornet that you are flying.)

We make this extra effort to allow teams to use this splendid freeware FSX-native aircraft that is rather good for RTWR 2012 flying. The DH.103 Hornet F.1 is very competitive in the "normal racers" category. It represents a much needed addition to the FSX racing stable.

We ask teams to take special care to comply with these restrictions. In particular, pilots flying a Hornet should take the time to announce that they are flying either the "Alpha Hornet" or the "RR-SOH Hornet F.1" or the "RR-SOH Sea Hornet F.20" or the "RR-SOH Hornet F.3." If there is any ambiguity, we will assume that the pilot is flying the "Alpha Hornet" and count the leg against the "thoroughbred" limit. (Neither the Executive Committee nor the community of fellow competitors have time to investigate every usage of the aircraft. It is the responsibility of the pilot, and team, to make the proper announcement while the pilot holds the baton.) If you have a teammate who is casual about these sorts of things, please work to be sure that he is in compliance with the rules.

Finally, and this is confusing, the Rob Richardson Hornet F.1 has a default paint that depicts the Prototype Sea Hornet F.20. This appropriately uses the F.1 flight dynamics—the prototype did not have the folding wings and de-rated engines of the active duty F.20. You may legally fly this "aircraft" as an F.1 aircraft because it represents nothing more than an alternative texture.

If all this extra effort is not worth your while, please do not fly the Rob Richardson FSX Hornet.

Q. The David Hanvey-Peter Forster Sea Fury (v2.3) is eligible. How do I use the version with external tanks?

A. Please consult with your veteran teammates. You will need to make two edits to your aircraft.cfg file to enable the external tanks and point to the correct airfile. Normally such edits are prohibited—so please work with your knowledgeable teammates to understand what is legal and what is not.

Q. Why the limitation on the fast aircraft, the Thoroughbreds?

A. Again, we wish to constrain but not eliminate the role of these very fast aircraft in the race. (To paraphrase a long-honored member of the community, they have served very well over the years and have by now paid off any investments.) Teams will fly about 40 normal legs in the race, of which nearly a third may be in thoroughbreds. These 12 fast thoroughbred legs constitute valuable strategic resources, to be used to advantage. The remaining 28 or so legs will be flown in normal racing aircraft. (Note well: you have 12 legs total of thoroughbred aircraft—not 12 legs each.)

Veteran racers will appreciate the push toward variety. With 12 thoroughbred legs, including wingmen, we have 24 slots for their usage. So they are not banned. But the active participant will surely want to develop alternative "rides" among the many competitive aircraft in what is now the top tier of "normal racing aircraft." The use of thoroughbreds may be further reduced in future years.

Q. Do all legs flown count for the thoroughbred frequency of use restriction?

A. Yes. For example, if you could use a thoroughbred for a Wild Card, that usage would count against the limit.

Q. The thoroughbred aircraft collection is leg-limited to 12 baton legs. How about an aborted flight, does that count? A wingman flight?

A. The key here is "baton leg" – which is defined by a takeoff, en route flight, and a successful landing while delivering the baton. The wingman flight does not matter here unless the wingman flight is substituted for the original lead pilot's flight and thus becomes an official "baton leg."

Q. What is an aircraft "type"? Are the Spitfire Ia and Spitfire XIV different "aircraft types"?

A. An aircraft "type" is determined by its characteristic airframe and propulsion system. A "model" or a "variant" is a variation of a "type", perhaps with an extended fuselage, different canopy, maybe refined wings, an improved powerplant, and so forth. (The propulsion "system" means one of the following: piston, turboprop, or jet. Changes within a category of piston engines, turboprop engines, or jet engines do not constitute a change in the "propulsion system".)

The Spitfire Ia and XIV are different "models" of the same aircraft "type". The root idea here is to cluster together aircraft whose main airframe remained similar over time even if the design and motor changed considerably. Further, one aircraft adapted for different roles counts as one "type." The Beechcraft/Raytheon King Air C90, B200, B300 and B350 are of the same type. Ditto for the Douglas A-26 and B-26K and Marksman; the Hawker Typhoon and Tempest; and the Focke-Wulf Fw-190A-2, Fw-190D-9 and Ta-152H. Of the same family but of a different "types" would be the Grumman F4F, F6F and F8F; or the de Havilland Mosquito and Hornet; or the Cessna 421 and 441 (different propulsion). As a rule of thumb, if it seems plausible that two aircraft are actually of the same type, then they are likely to be judged so. If you are in doubt, ask. At the end of the day, the Executive Committee will make the final judgment.

The word "type" is used variously in aviation. For our rules, we use "type" to mean a broad category that allows us to measure aircraft diversity.

A special exception that reflects the special speed restrictions: the thoroughbreds are of a different "type" than their cousins that would otherwise be of the same type. Think P-82B, P-51H and P-47M.

Q. The FSX Acceleration P-51 Racer is eligible this year. Are other "racers" also eligible?

A. The FSX P-51 Racer is a special exception that incorporates a unique form of variety into this year's race. The normal rules apply otherwise: no other special racers are allowed. (On race-eligible aircraft, racing "liveries" or "repaints" are fine as long as the flight dynamics are race-eligible.)

Q. Are all repaints of eligible normal aircraft automatically legal?

A. As far as we can tell, yes. Sometimes a repainter will provide a visual impression of a slightly different model. This is not a problem as long as the flight dynamics are correct. The aforementioned DH.103 Hornet has repaints of the prototypes, of which no 10 were in regular service. Flying those "paints" is fine because they merely decorate the legal model. Similarly, John Terrell has a nice "Gulfhawk" repaint of the Alpha Bleu Ciel Bearcat. It is fine, despite the fact that the "Gulfhawk" Bearcat was technically a different aircraft of which 10 were not in service. CR-1 use repaints to depict slightly different Do-335 models. They are legal. Our intent of allowing repaints is that you can enjoy your favorite visual representation while flying your perfectly legal race eligible aircraft. Please do not take advantage of this ruling by sneaking in a different flight model under the claim of flying a mere repaint.

The only exception is that for the sponsored civilian transport jets you are limited to civilian liveries. (No military liveries for the civilian jets.)

Q. The White List indicates that otherwise-eligible realistically modeled aircraft with a maximum speed of less than 350kts are legal. Is that at level flight?

A. Yes. The speed limit here is 350kts true airspeed (350 KTAS) measured while in level flight at critical altitude (under MSFS "Clear Weather" which approximates ISA). For turboprops, for which there is no critical altitude, the relevant altitude is that which maximizes true airspeed. This provision means to allow usage of a large number of slower aircraft (including four-engined transports) that have their place in the race but are not competitive as "racers".

10. Special Aircraft Legs and Team Flights.

Q. Do teams have to fly every one of these special aircraft legs?

A. Yes. You must fly one baton leg that satisfies each of the requirements. (Note that you will naturally complete a Wildcard Leg in any case.) You may turn one or more into a team flight, but you are not required to do so.

Q. Lots of rules here. What is going on?

A. These are simple affairs in practice. A baton pilot takes a Mooney Bravo and flies 150nm. Other members of the team take aircraft in the same category (maybe a Beech Baron or a Lockheed Vega) and fly alongside. Hence, a Team Flight.

Q. When and where may the team schedule the Team Flights? Why have restrictions?

A. The team may conduct a Team Flight whenever and wherever desired—with two main restrictions. (1) You cannot fly a team flight for the first 12 hours after the race start. This delay is intentional as it separates the team flights from the Kickoff event. (Note that we make an exception for the *Vin Fiz* flight—to encourage you to enjoy the event in sunny Southern California.) (2) You cannot fly the team flight events consecutively. The idea is that you will spread them over the course of the race. Further, the separation of the team flights permits more accurate race tracking. That said, it might be useful to schedule the events during the busy time when both European and North American pilots are available and eager to fly. It is probably a good idea to find congenial terrain and weather conditions. But there is no restriction here.

Q. If I am flying the "Special Aircraft Legs and Team Flights" as a Special Aircraft Leg but not a Team Flight, am I limited by the time schedule for Team Flights?

A. No. If you are flying one of these flights as a baton holder but without participating pilots (or scoring your wingman as a participating pilot), you may fly that flight under the normal leg racing rules. If you score any participating pilot bonus, you must observe the Team Flight restrictions.

Q. Bonus time is earned by participating pilots. What about the baton holder? What about the wingman?

A. The baton holder earns no team flight bonus. The wingman may earn a bonus as long as he does not carry the baton during the event. The wingman is always a participating pilot as long as he does not have the baton.

Q. How many pilots should the team organize for each event?

A. Probably more than the minimum number necessary. Six extra pilots earn the event's maximum bonus. But the team may, and probably should, mobilize more pilots in case one or more encounter difficulties.

Q. How many bonus hours can we earn? Do we fly one or two or more team flights? This is confusing.

A. In each event, your team can earn a maximum of 3 bonus hours. (That is earned by six participating pilots flying authenticated legs.) Your team may earn up to a total of 6 hours for the events that you organize. That is to say, even if you fly four fully subscribed events, your overall maximum remains 6 hours.

You can earn the maximum bonus hours with one event with six extra pilots and a second event with another six extra pilots. (Or any combination over all the team flights that produces twelve extra pilots). The aim is to allow teams to maximize their Team Flight bonus even if they are not able to maximize all team flights. The slack in the system is intentional. The goal of the Team Flight is to have some fun in a social setting.

Q. The timing rule says that participating pilots must land and post no more than 30 minutes after the lead pilot. What about authentication? That can sometimes take a long time?

A. As long as you land and make the appropriate post, you are within the 30 minute window. But you must authenticate properly within an hour of your posting. Even if six pilots have already landed, you might want to land, post, and authenticate just in case one of those pilots has a bad Duenna. (Participating pilots may land at any time before the baton—though they may not take off before the lead pilot claims the baton.)

Note that the authentication for each participating pilot's flight need include only the Duenna's textfile. (The textfile is sufficient and takes less bandwidth than the map. Everyone is flying the same route.)

The time window for the Wildcard Team Flight is 60 minutes rather than 30 minutes. This change reflects the greater distances and variability inherent in a wildcard leg.

Q. The baton holder may release the baton to the next leg's pilot who may take off. My landing as a participating pilot and my authenticating that flight doesn't affect the progress of the baton does it?

A. Right. Your role as participating pilot does not affect the progress of the baton.

Q. What happens if lightning strikes and both lead and wingman crash?

A. No problem. The current baton holder may restart the leg or abort the leg as per the normal rules. If the leg is eventually completed (by someone with the baton – lead or wing) to the same destination in an eligible aircraft, then all the participating pilots' authenticated legs will count toward the bonus. This is true even if those legs were completed before the successful pilot took off. If one of the scoring pilots subsequently carries the baton (in relief of the initial baton pilot), his scoring leg is voided. The team may substitute another valid leg in its place. (Note that the baton carrier aircraft is sometimes more circumscribed than the participating pilots' aircraft.)

Q. So can any participating pilot who completed the flight "carry the baton" retroactively for the team flight if both the lead and wingman crash?

A. No. The participating pilot would have to abandon his successful bonus leg, and restart from the origin airport and complete the leg as baton pilot in an appropriate aircraft.

Q. Why the Team Flight summary? Who posts this and when?

A. The race needs real time scoring: the summary will allow everyone to know each team's standing. The baton pilot (or any substitute) posts the summary indicating the total bonus hours earned during this event—taking care to check the authentications. Then he should provide the total cumulative bonus hours earned in all the Team Flights that have been completed. Finally he should enter the bonus into the official Bonus Bank.

Q. How do we handle the Duenna's inquiry about Baton Holder or Wingman?

A. The Baton Holder (Lead Pilot) and Wingman check the box appropriately. The remaining "participating pilots" do use the Duenna tracking facility but do not check the "Baton holder" box. They should post their authentications on the forum.

Q. The Vin Fiz can be flown on the initial departure from KVMY while other Team Flights may not. Why?

A. The Vin Fiz is limited to the Continental United States (the lower 48 states). The departure from Van Nuys, in Southern California, is an ideal time to enjoy this event. We want to encourage pilots to have a bit of fun. Two excellent initial destinations are Compton (KCPM) and El Monte (KEMT) next to Pasadena: these approximate real stops on Rogers' historic transcontinental flight.

http://www.wright-brothers.org/History_Wing/History_of_the_Airplane/Doers_and_Dreamers/Cal_Rodgers/Vin_Fiz_Revisited/Vin_Fiz_Revisited.htm
<http://www.airspacemag.com/history-of-flight/The-First-Across-the-Continent.html?c=y&page=1>
<http://www.airportjournals.com/Display.cfm?varID=0710006>
http://www.centennialofflight.gov/essay/Explorers_Record_Setters_and_Daredevils/Vin_Fiz/EX6.htm
<http://www.vinfizlongbeach.com/route.html>
<http://www.citizens4freedom.com/Articles/tabid/1387/articleType/ArticleView/articleId/5251/One-100th-Anniversary-of-the-1911-Vin-Fiz-celebration.aspx>
<http://www.nasm.si.edu/collections/artifact.cfm?id=A19340060000>
<http://www.drinkvinfiz.com/>

You are not required to fly the Vin Fiz early in the race—the timing is optional. But do note that you are limited geographically to the Continental United States.

Q. The Vin Fiz team flight requires the active disengagement of the autopilot. Why?

A. Note that you must fly without autopilot. (For historic verisimilitude.) This means not only that you may not install or use an autopilot on your aircraft, but also that you must tick the appropriate box in the Duenna that disables the autopilot. Hand-flying is the nature of this event. Note as well that you may use the default MSFS GPS so that you can find your way. (The GPS was not, of course, available at that time period—for us it serves the place of a good map.)

Paul Beardsley's Wright EX Vin Fiz is available at both AVSIM and FlightSim.com. It is FS2004-native but ports well to FSX. You should fly the "stock" Vin Fiz as designed by Beardsley—no glass cockpit or FMS—with the following exception. Retain the stock pilot weight of 213 pounds to represent the stocky Cal Rogers. You may reduce the stock fuel load if you wish. Several of the entries to Beardsley's model come from the FS2004 Century of Flight Wright Flyer. (If you cannot get those gauges, and need a reference, you should feel free to use the MSFS "Shift-Z" feature.)

Q. I'm flying the Wright EX in FSX and the engine keeps dying. Thought you recommended the ported Vin Fiz!

A. This sort of thing can happen in transition from FS9 to FSX. First, you might try keeping your RPMs at high idle—that should do the trick. Knowledgeable "notepad mechanics" might modify the aircraft.cfg slightly. Under the [piston_engine] section, look for "idle_rpm_friction_scalar" and modify the line as follows:

idle_rpm_friction_scalar=0.900 // 1.000

This change will not alter the flight dynamics but will help keep the engine running. If you stall the engine, reload a default piston-powered aircraft (say the Baron), restart, and then reload the Wright EX. This trick will not always work—best to keep the RPMs high and the engine running. Modifications of the flight dynamics are NOT allowed under the rule. This "idle_rpm_friction_scalar" edit is an exception.

Q. What is "Vol de Nuit" meant to be? Why this?

A. We mark Antoine de Saint-Exupéry's 1931 novel *Vol de Nuit* (or *Night Flight*), one of the very best aviation books of all time. (Highly recommended!) One hopes that Rivière's worries will not befall the team flight's organizer.

Q. Why at night? How do we tell what is technically nighttime?

A. The night flight adds a bit of character to this leg in what are long-time favorite aircraft. You can normally tell nighttime by looking out the window...it will be dark. Of course, given the blend of Dusk to Night and Night to Dawn, you really need a more precise "legal" definition. You can tell nighttime by opening up MSFS *ALT/World/Time* and see whether MSFS thinks it is Dawn, Day, Dusk, or Night. You can plan ahead by estimating your departure time, jumping to the departure airport and setting the clock appropriately, and seeing what "time" MSFS gives you. "Night" is fine, "Dusk" is not. You can repeat for the arrival airport. This process of checking for nighttime is replicable and can be used by observers to validate your team flight's timing. (You might use UTC time to avoid mistakes caused by differentially modeled local daylight savings time.)

Q. For "Vol de Nuit" which alternative aircraft or flight models are available?

A. None. These are all MSFS default aircraft. You may add gauges in the normal manner, but otherwise these are default. Please check your installation to be sure. Minor mistakes will be overlooked on this social flight: for these default aircraft, you may have changed something so long ago that you've forgotten. But please don't install another flight model. We expect default flight dynamics, not turbocharged Barons! (The latter would earn sharp looks and a penalty.)

Q. Why Lockheed P-38s?

Poetry...

For the loveliest thing of which one could sing
 (this side of the Heavenly gates)
 Is no blonde or brunette of the Hollywood set,
 but an escort of P-38s

This leg celebrates that long-time favorite, David Copley's P-38. The baton-carrier, wingman, and participating pilots may fly any of the race-eligible P-38s, of course.

Q. The P-38 operations regions seem large.

A. They are. The P-38 was used extensively in the three theaters as an interceptor, an escort fighter, a fighter-bomber, and a reconnaissance aircraft. If you wish, you may land at the boundary airports WSSS or HLLT. Note well that the Anchorage PANC boundary (longitude W150°) extends directly southward to limit the number of South Pacific islands eligible for the "PTO" operations to those west of Tahiti's NTAA. The P-38 is further constrained by its being a military aircraft—the islands of China are off limits. Finally, if desired the P-38 team flight may be conducted on a "return home" flight to Burbank (KBUR).

11. Weather.

Q. Do we have to use MSFS default weather? I love my Active Sky/REX weather program.

A. Yes. In 2012 we standardize on a single weather engine. We shall all use the default Jeppesen-supplied weather. Each of the different weather programs has many splendid features. But for racing purposes, it is important that all participants compete in identically sourced weather conditions. This is a matter of competitive balance. (You may use your Active Sky/REX cloud and sky textures.)

Veterans will understand that the fact that everyone uses the same weather engine does not guarantee identical weather. However, it is important for the competition that pilots and teams give up the ability to choose their weather by choosing their weather engine.

Q. What happens if the MSFS weather engine breaks down?

A. Two things can happen. First, you may have a temporary glitch in your own internet connection. Sometimes this can trigger an error message that MSFS cannot generate the weather. You should simply finish your leg while handling the annoying error messages. (You might want to cut the leg short or abort if you find the problem bothersome.)

Alternatively, the entire system may fail: Jeppesen has occasionally gone down. Check with your teammates to see if they are all experiencing a failure. Look for an immediate reaction from the Executive Committee. In all likelihood, the entire race will be asked to switch to one of the default weather schemes: Fair Weather. When Jeppesen comes back up, teams will quickly switch back to the standard race settings: Real-world weather (updated every 15 minutes).

12. Bonus Bank

Q. Who does the accounting work here? The pilot will be busy after landing and may forget to make all the entries.

A. The book keeping is the team's responsibility. Teams may assign duties among their members to make sure everything is in good order. For example, teams may want to appoint a "Bonus Banker" to take responsibility here. Or they may form a "Banking Committee." The intent is for everyone to keep current public records so that everyone else knows where we all stand. You can see why this is so important.

Q. What information do I have to enter into the Bonus Bank?

A. Provide the team name, the nature of the bonus/penalty, the minutes earned or penalized, and the details. For the Kickoff details, you enter the number of paired sorties completed. For a bonus airport, provide the ICAO of that airport. For a team flight, provide the name of the team flight ("Vin Fiz" or "An Escort of P-38s"), the location, and the number of successful participating pilots. For a Formation Flight, provide the destination airfield and the bonus score.

Q. What happens if we make an honest mistake in our accounting? After all, we are dumb pilots.

A. There is no penalty. If you make a good faith effort in posting, then you may make corrections without a problem. It is vital that you keep your accounts current--hence the one hour rule on posting time. (If you miss the timing once, you can appeal to the Committee and expect leniency. If you miss your posting time more often, you might expect to pay a price.) Normally, once a record has stood for 24 hours it will not be subject to revisions for any reason. (That is, we do not anticipate reexamining the books from previous days. We do not want to change the race standings upon discovering an ancient accounting error.)

Q. How do we make corrections if we enter the wrong numbers?

A. You go into your team page and hit the "X" marker. That action will cause the entry to turn "purple" to mark a change. While the original entry will remain visible, the bonus/penalty numbers will be eliminated from the accounting. You may then make the correct entry and all will be good.

This system allows everyone to see the error and correction. The transparency reduces the chances of really fouling things up.

Q. After we earn Bonus Hours, how do we apply those hours against a penalty?

You withdraw "hours" from the Bank, drawing down your account, and pay off your penalty. For example, a team completes a Team Flight for a bonus of 3 hours and immediately updates their Bonus Bank to show that they have gained 3 hours and that their net balance is now 3 hours. On a subsequent leg, they have to invoke the Wingman Transfer Rule at the cost of a 30 minute penalty. At their option, the team may post to their Bonus Bank account that they are withdrawing 30 minutes from their account to pay for the penalty, now leaving a balance of 2 hours 30 minutes. The accounting being posted, the team may take off on the next leg without physically waiting out the penalty period.

Q. How do we transfer our bonus hours to erase a penalty?

A. You make sure that the "bonus bank" check box is marked when you enter the penalty. This is the default. If you have a penalty and actually sit it out, then be sure to uncheck that box.

Q. Are we required to pay off penalties with the Bonus Bank? How about partial payments?

A. No requirement here. The team may choose to sit on the ground and serve the penalty without tapping their Bonus Bank account. Understand that the team may not make "partial payments." In using this rule, the team must pay the full amount of the penalty. The team may borrow against the future: the Bonus Bank allows a negative balance. (This is a change for RTWR 2012.)

Q. Does this Bank work for all time penalties?

A. Yes. The same procedure applies to all instances of a penalty or a maintenance delay. The most common case would be the triple time penalty for exceeding the two hour time limit. Alternatively, the Executive Committee may have to impose a minor penalty for minor rules violations. In these cases, the team may use their Bonus Bank balance to pay off their debt and move along right away.

Q. The Bonus Bank is open to all. Why don't I just enter a bunch of withdrawals in the other teams' accounts? No one will ever know that I am responsible.

A. Are you angling for a career in finance? While nothing is proof against a determined effort, please note that we now have a password protection system to remind you of your better self. :-)

14. Penalties for Inadvertent Minor Infractions.

Q. Might you give some examples of what would be an "inadvertent minor infraction" as opposed to a more serious matter?

A. These minor penalties include violations of a technical sort which are extremely unlikely to have had an impact on the team's racing time. Examples from past years include: incorrect aircraft realism settings; momentarily incorrect sequencing of lead/wingman baton claims/transfers; forgetting to post the Duenna authentication in a timely manner (when the evidence for a valid leg is clearly available); daylight flying when real time is nighttime (and the airports are easy); and technically illegal aircraft with no racing benefit. A minor penalty marks the violation—and encourages paying close attention to the rules—but should not dramatically affect the race outcome. Examples of more serious infractions that earn both a compensatory and a deterrent penalty might include: accidentally setting incorrect daylight when flying through mountains or into unlighted airports; or flying into headwinds with "winds aloft" accidentally disabled;

claiming the baton more than a few seconds before it is officially released, or completing legs slightly longer than the legal limit.

Q. Why lump so many things into a "minor infraction" category?

A. We wish to enforce the rules consistently and need to apply penalties. But we do not want inconsequential mistakes to alter the race outcome. These are very minor things and deserve quick summary justice.

Q. What about those serious infractions? What is a compensatory and deterrent penalty?

A. The first principle is to prevent a rules violation from serving the interests of the violator. It is hard to say in advance because the specifics of the event will play an important part in judging the compensatory damages. (The judgment about plausible advantage will stress the protection of fellow competitors.) The deterrent component of the penalty will reflect the specific circumstances as well. The actions of the team itself, including the self-reporting of the violation, will play an important part in the judgment.

Q. And severe penalties?

A. We do not expect to have to impose severe penalties. These are reserved for what appear to be intentional violations of the rules.