

# MARCO POLO AIR RALLY - ROUTE PLANNING -



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**JOIN THE MARCO POLO ULTRALIGHT RALLY AND  
BECOME A PIONEER IN AVIATION HISTORY**

# **MARCO POLO AIR RALLY**

## **ROUTE PLANNING**

The forming of 150 “Ultralights” in Paris and then moving them across the World to Beijing 6000 miles miles away, would not be simple matter as Monsieur Bernard Lamy had remarked, at the outset. He should know very well as Bernard is an Air Race Organizer of some repute. I have thought about this much and have not been able to present simple answers todate. As you know, I am quite familiar with the geography, political and airspace structure from Europe all the way to China and Australia one because its part of my daily grind, two with the hindsight of a four times flight in light airplanes from South East Asia to Paris and back in 1990 . So this quest to move a large number of very light and performance limited planes ( Ultralights ) from here to there has been giving me quite a buzz to figure out a workable plan .

With reference to Mr Brian Milton’s exploits, we have to keep in mind that he was a lone and capable Eagle, expert at handling, maintaining and if necessary fixing his aircraft en-route. He was also operating alone and time for him; I guess was not an issue. Not to mention he must have been an extremely patient diplomat along the entire journey. But this Rally is going to be totally different. As Organizers we are ultimately going to be responsible for each and every participant and that’s 150 of them plus the supporters. We can’t leave anyone behind to their own devices to find their own way around without some educated guidance from us.

Firstly, I would like you to note the following points vis a vis Ultralight Flying Machines, Standard Category (ie Factory Manufactured light airplanes with a Certificate of Airworthiness), and Jet Liners plying their apparently nonchalant way across the Continents.

## **Certification**

1. All aircraft great and small are required to have Certification. Ultralights, by whoever's definition, are generally understood to be very light, recreational flying machines, for educational and recreational use, not for plying commercial routes, carrying passengers or intended in their original form for flying vast distances. Most Ultralights (some no) would have to be issued a National Registration mark and a "Permit to Fly" or some form of Airworthiness Certificate, by the State (country) in which it is registered. This Registration and Certification is meant for operations *within the State's borders only*. Express permission would have to be obtained from other States (countries) through which these "non-certified" airplanes may intend to traverse. This permission may or may not be granted, given that these aircraft are usually manufactured to "no known Aviation Certification Standard". That means, we have to get from each and every country that we are intending to traverse through, "express permission to operate an Ultralight Flying Machine, generally understood to be an Amateur Built Aircraft, through the borders of their sovereign airspace". This is all official Aviation goobledook . That's 150 different types of Non-Certified aircraft which the Organizer will have to obtain permission for. Brian can educate us on how he obtained clearances for his Non-Certified aircraft to operate through State borders.
2. Certified aircraft carry a "**Certificate of Airworthiness**" and that includes a humble two seat Cessna 150 (admittedly not much more than an Ultralight airplane), to the mighty 400 seat Boeing 747. Each of these aircraft have been manufactured to a " known Aviation Standard " and by virtue of their having been 'certified' by the State of Manufacture and holding a Certificate of Airworthiness issued by the State of Registry, are free roam through the World's Airspace, within their limitations.

A Cessna 150 can fly at 90 knots for 4 hours, a 747 15 hours at 600 knots. Therefore I can happily submit a Flight Plan for my humble Cessna 150 or a 747 and get an ATC clearance to fly from here to anywhere, subject only to overflight clearances across sovereign territories. I can land at established Airports, get fuel, clear Customs etc. and fly almost at will on established routes worldwide.

### **IFR versus VFR**

IFR means Instrument Flight Rules on established Air Routes or Airways : Our little Cessna 150 can be fitted with basic IFR instruments and with an easily available GPS unit, navigate all over the World day or night, subject only to Environmental (weather) and pilot capabilities. 747's are exclusively flown IFR through all kinds of meteorological mayhem and quite easily arrive on time.

Ultralights may not be operated under IFR; they were never designed to do so in the first place. They have to fly VFR or Visual Flight Rules, which means prescribed weather and minimum visibility limits. They could fly IFR ie. (I Follow Road / River / Railway) in a pinch ! So our 150 Ultralight flying machines will be subject firstly, to receiving a VFR clearance in each country they fly through and secondly to suitable VFR weather prevailing en-route.

So we are faced with these two major problems of route planning. Clearances to operate 150 non certified airplanes through various territories and countries willing to allow these planes to operate VFR, which in most countries means by daylight only.

Flying VFR through most countries except perhaps the US, UK, Europe etc. is anathema to their acute sense of insecurity. Even India, supposedly the great bastion of Asian Democracy, through which I have traversed VFR, can go completely ballistic if you don't have the proper clearances, stray or deviate from an agreed route. They would happily shoot you down and talk later. They nearly did my teammate in, in 1990. I have looked at the Air Publication and Charts of every country and each one has strict and /or prohibitive local rules about VFR aerial Navigation in their Airspaces.

Cyprus for example bans *ALL* VFR Navigation in their airspace and has a note on their charts that states “*entire airspace over territory and territorial waters of NICOSIA FIR is a prohibited area, except for overlying aircraft within established Airways and as instructed by ATC within the Nicosia FIR/UIR*”. Here’s another gem from Burma “*All aircraft MUST report entering and leaving Myanmar ADIZ ( Air Defence Identification Zone ) without fail. Aircraft failing to do so may be forced to land*” ... and so on and so forth through the world. The word for this is, PARANOIA EXTREMIS. It is quite a simple matter for an IFR equipped aircraft to plan a flight from here to there, by following established Airways. Everything about the Route is well documented. So I can produce a Paris to Beijing Route Plan in a jiffy. That’s what we did on the “Air Race” from Paris to Langkawi and vv. Flew on Airways with standard separation. Was that a Race ? I didn’t think so. The winner was whoever could successfully cheat, connive and get ahead of ATC, by whatever means possible.

I remember trying to cancel IFR to go VFR to look at some lovely islands in the Aegean Sea on approach to Corfu in Greece ( by this time I had lost interest in *the Race* ). No way Jose, stay right there on the silly airway at 10, 000 feet in beautiful weather. Can 150 Ultralights comply with that kind of instructions if forced to ? I don’t think so. Please check with Brian how he managed it.

## **Communications**

The minimum equipment for operating on airways worldwide are : VHF and HF transceivers and Radar Transponders. Although navigation is ostensibly by ground based radio navigation beacons such as VOR, DME and ADF, the reality is most pilots depend entirely on presently ubiquitous GPS (don’t leave home without it, and don’t forget to carry loads of spare batteries Fred ).

Our Ultralight Flying Machines are at best going to manage a single VHF Radio and a handheld spare for arrival and departure communication. GPS, MK2 eyeballs and, map will get them there, but any requirements imposed to carry transponders and such eeky things will effectively ‘kill’ most participants airplanes capability from the outset.

So I'm going to advocate having fully equipped 'shepherd' aircraft to accompany the Rally aircraft for relay communications through various airspaces. I have a detailed plan for this sort of mass transit, which I have used before on a smaller scale.

### **Ultralight Aircraft Performance**

Ostensibly the Pilots of the 150 Flying Machines that intend to take part in our Escapade are fully aware of the implications of attempting to fly an Ultralight Flying Machine from Paris to Beijing and would be planning to fit their Machines with the most reliable Engine, Instruments and have fuel for as much range as they can squeeze into the craft and suitable pouches for physiological needs too! Most Ultralights are severely performance limited in the engine and fuel range department, unless specially kitted out, as I imagine they would all be for this long range Rally. Did someone say they wanted to enter a powered parachute plane cruising at 30 knots?

On our Route Planning, we can't possibly say to the participants, "We are going to fly from A to B and you can go ahead and land at any suitable airport en-route". We have to identify with care, suitable airports or Ultralight landing places that can accept the Rally aircraft and get support from local enthusiasts. Neither could we tell the 150 pilots "land where you like and get fuel" : And how about airports of official 'entry and exit'. All countries specify at which airports you may enter and exit the country from. These may pose severe restrictions on the Rally's Ultralight planes fuel range capability. An example is say from Karachi to Ahmedabad ( Pakistan to India ) last port of exit and first airport of entry in India West. That has to be a non stop run, without any intermediate airports. The route is also across the most sensitive parts of the Indo / Pakistan border. So, there we go.

## **Recommended Route Planning Concepts**

My thinking on this whole matter of Route Planning is as follows:

I understand that the primary objective of the Rally/Race is to get everyone through the Rally that no one should be left behind to fend for themselves en-route on their own in the event of any difficulties other than major technical problems. Search and Rescue coordination, (God forbid), if that becomes necessary, will also be our responsibility, to ensure the participant gets out.

1. We divide the whole Rally Route into several geographic zones. Identify the countries in each zone and get knowledgeable country contact ( s ). In each zone, we identify the most suitable and desirable route for the Rally aircraft to traverse safely, considering terrain, fuel stops, restricted airspace etc. We make intense diplomatic efforts to get these desired routes cleared by local Authorities for the Rally to pass through unrestricted, at agreed dates/times.
2. We have to operate VFR by daylight, period.
3. Fuel stops have to be planned every 300 nautical miles or closer if possible. Friendly *emergency* stops have to be identified in each zone along the route. If this is not possible and if we have to increase the distance between stops, participants must be informed right at the outset to make modifications to their planes. Coke bottles of fuel on top of their baggage won't do. Yes, some have done that too! What was Brian's max fuel range on his plane? He can give advice.
4. Identify and classify all ports of entry and exit for each country en-route, fit this in the 'geographic zone' plan.
5. Have an 'activation' plan for each route segment and duration of the open airspace. This means, once the VFR Route has been identified, planned and agreed upon by our planning team, we get the countries that we would like to traverse through to activate and deactivate the agreed route at agreed times and dates during the Rally.

This way, I believe their acute states of PARANOIA can be satisfied, if necessary, by their defense agencies patrolling the agreed temporary route using their own assets

In effect, we are suggesting the ‘creation’ of *temporary VFR corridors* through their airspace for 150 performance limited aircraft to pass through under their wary eyes and noses, in “pursuit of a Great Aerial Sporting Adventure, for which we seek their gracious accommodation and Authorisation”. Bernard Lamy taught me some suitable gestures to adopt when approaching reluctant Authorities.

That is the reality of the situation as far as VFR Ultralight flights are concerned, through the political boundaries of this World’s Airspaces, which to them is their total sovereign territory.

6. Each geographic zone’s country contacts can come in right way and start working on influencing their Aeronautical Authorities and informing local Ultralight enthusiasts along the route to support the Rally as kindred bretheren . Established Aeronautical Service Providers (Overflight Companies) can be approached for their inputs on this plan of action.
7. The Geographic Zones to segment the Route Planning I have in mind are as follows:
  - **Europe** : Paris to Cyprus. **Countries traversed** : France, Italy, Greece, (Turkey), Cyprus.
  - **Mid East** : Cyprus to Karachi. **Countries traversed** : Egypt, Saudi Arabia, UAE, (Oman), Iran ( if we want to )
  - **India/Pakistan** : Karachi to Calcutta. **Countries traversed** : Pakistan, India.
  - **South Asia** : Calcutta to Hanoi . **Countries traversed** : Bangladesh, Burma, Laos, Vietnam
  - **South East Asia** : Calcutta to Hanoi via Malaysia .( only if an attractive offer for sponsorship arises in Malaysia )
  - **China** : Hanoi, Kunming to Beijing (Vietnam, China).
8. We identify ALL the Country Contacts, Clubs, Associations and Friendly Supporters of Ultralight Aviation in each zone and along the identified Route.
9. Set up a web based communication/forum for implementation.
10. Brian Milton and I could advise overall.

### **‘Ideal Route’ Requirements**

I have in my own judgement, thought up of what an ideal, real life, *survivable long distance* flight route for Ultralights might be, as follows :

- (i) En-route terrain heights of not more than 5000’ AMSL.
- (ii) Clear of most restrictive airspaces below 5000ft. : eg. MOAS, Restricted, Prohibited, Danger Areas, no fly zones etc.
- (iii) Shortest possible overwater crossings.
- (iv) Low density airports of entry / exit to accommodate 150 Ultralights (which would cause most ATC units in the World to go berserk, Oshkosh excepted).
- (v) Suitable emergency and ‘friendly’ small airports en-route with local Flying Club contacts.
- (vi) Minimum exposure to Class B / C airspaces, skirting around major commercial Airports ( Athens ATC once instructed us to ‘ Maintain 210 knots across their Zone.’ Huh ? But we can only do 130 knots maximum, Sir .....)
- (vii) Scenic Routings wherever possible (?) It’s quite pretty at low levels.

The above requirements may sound like a tall order or for ‘wimpy’, unadventurous pilots (such as 747 jocks at 40, 000 ft!), but the reality of the maxim “rather safe than sorry” applies.

The admirable feats of all long range, across the World, Sport pilots are littered with equally long tales of horror and trepidation.

...Intercepted and forced down in xxx

...Refuellers stole my spare radio in xxx

...Threatened by ATC in xxx

...Delayed by airport Authorities for 3 days in xxx

...etc, etc, etc

### **Current Political Situation**

I'm sure you're aware of the current prevailing worldwide political situation: India and Pakistan are at each other's throats as of 20<sup>th</sup> May. Southern and Eastern Turkey right through Syria and Northern Saudi is a hive of military activity. Arar, where Brian had landed at is right now smack in the middle of an MOA ( Military Operations Area ) From Kuwait to Abu Dhabi the entire low level area is a mass of military operating and danger areas. Recently, I have had no less than five changes of flight plans en-route, operating our 747's from Asia to Europe vv. In mid-flight at times !. But then I carry 170 tons of fuel ( that's like 56, 215 gallons ! ) and have umpteen toilets on board, when I get nervous !

The current situation leaves us only Cyprus to North Africa as a gateway to the Middle East and beyond. That means a 350 nautical mile over water crossing of the Mediterranean Sea in limited capability Flying Machines. Not good, in my view. I'm all for a great and fun Rally / Race in which everyone gets home to talk about it. I would strive to do everything possible to achieve that goal, from the outset.

So here we are Roger, tell me what you think about this discussion above. Feel completely free to pass this on privately for discussion, comment by other experts with real world knowledge and experience. I suggest we do not post the above comments in a public domain, due to sensitivities.

I can *always* be persuaded to change my mind, provided I get to enjoy my cold, cold bottle of Champagne with you at the end of the flight in Beijing !!!

With kind Regards,

Siva

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