MEHAIR and GTDC
Seaplane Trials - Goa

MEHAIR – An Introduction

- Maritime Energy Heli Air Services Pvt. Ltd. (MEHAIR) – Pioneers in seaplane services in India
- Till date only company in India doing seaplane operations
- Operated safely and successfully in A&N between Jan'11 – Apr'14.
- Currently operating seaplanes in Maharashtra between Juhu Airport and dams with a Cessna 208A
- Goa and Kerala next destinations for commercial launch
- Also launching Regional Air Connectivity with landplanes from July onwards in Maharashtra

Goa Seaplane Service

- Trials between Dabolim airport and Mandovi, Miramar, Coco Beach, Donna Paula and Chapora
- Commercial launch post monsoon
- Tickets and packages will be marketed through GTDC and MEHAIR websites
- Connectivity between Goa-Ganpatipule-Mumbai envisaged. Hampi also a possible sector
- Local joy rides over Goa with water takeoff and landings

Goa Seaplane Service

- Based on feedback, company may consider basing aircraft permanently next to a waterbody overnight instead of the airport. **All day operations possible**
- Maintenance, Repair & Overhaul (MRO) facility could be considered at some point in the near future
- Pilot conversion school for seaplanes also a possibility
- **Interested parties can contact MEHAIR for a partnership for any of the above projects**

Aircraft Dimensions and Infrastructure

Cessna 208 Amphibian


VT-MHB
VT-KPL

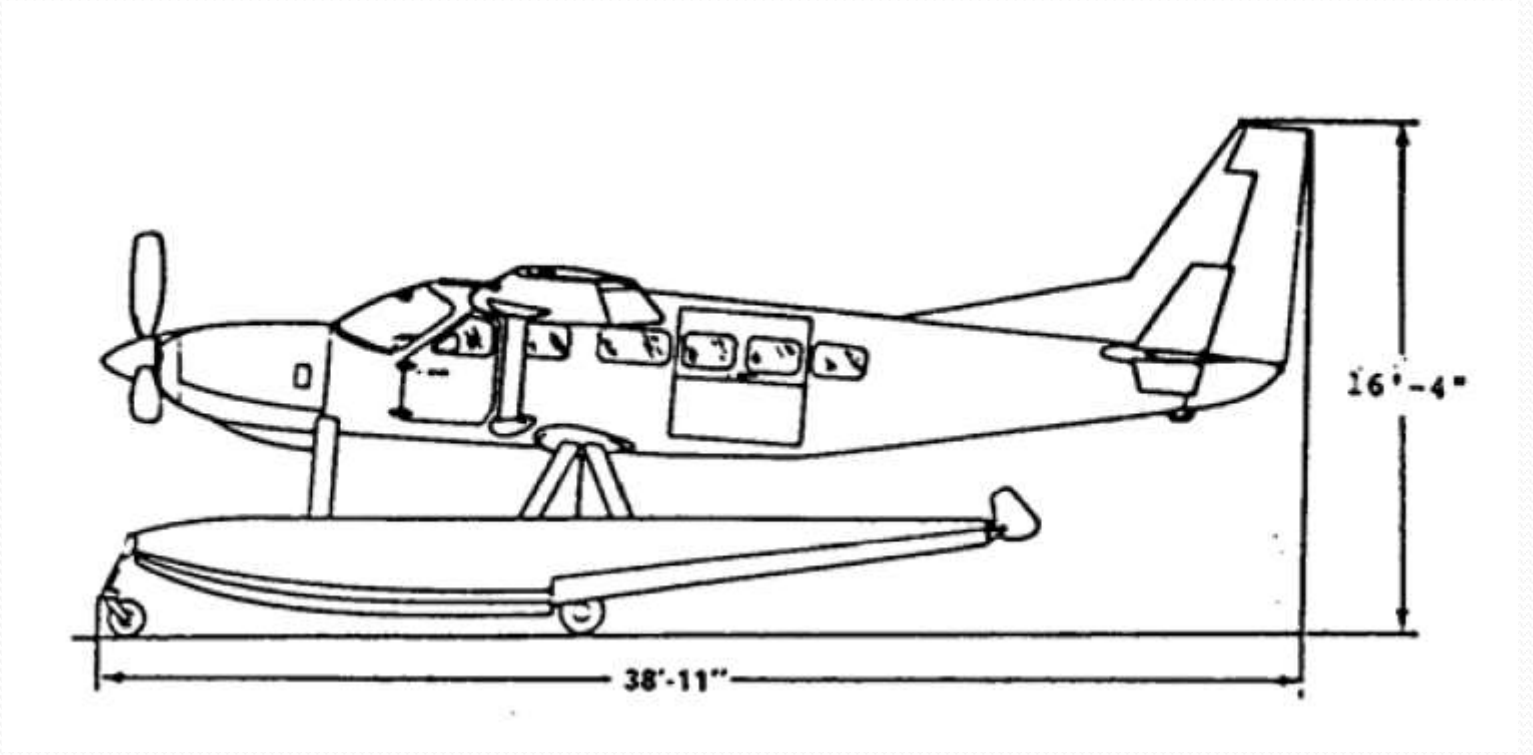

VT-MHB


VT-MHB


VT-MHB


VT-MHB

Dimensions



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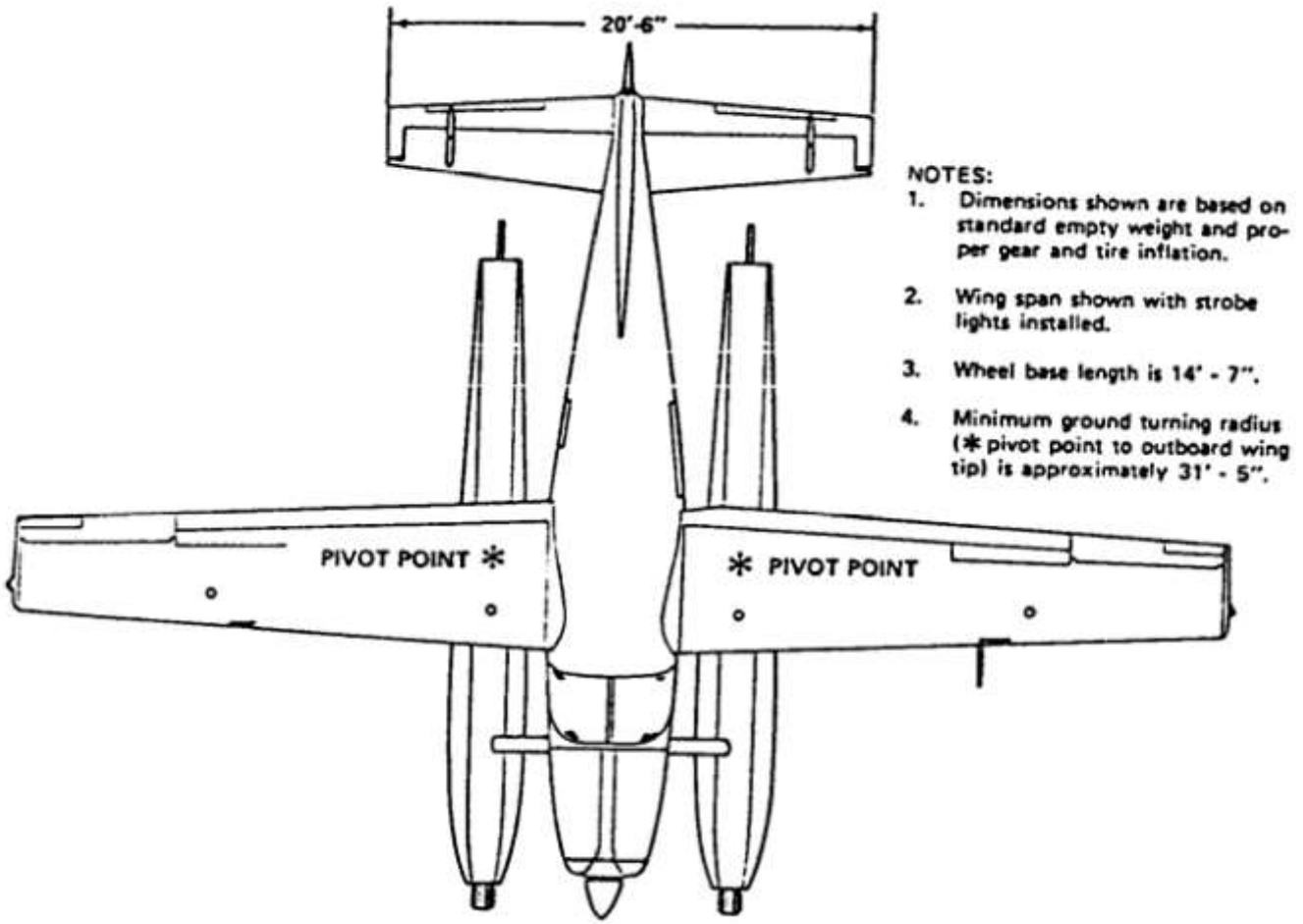
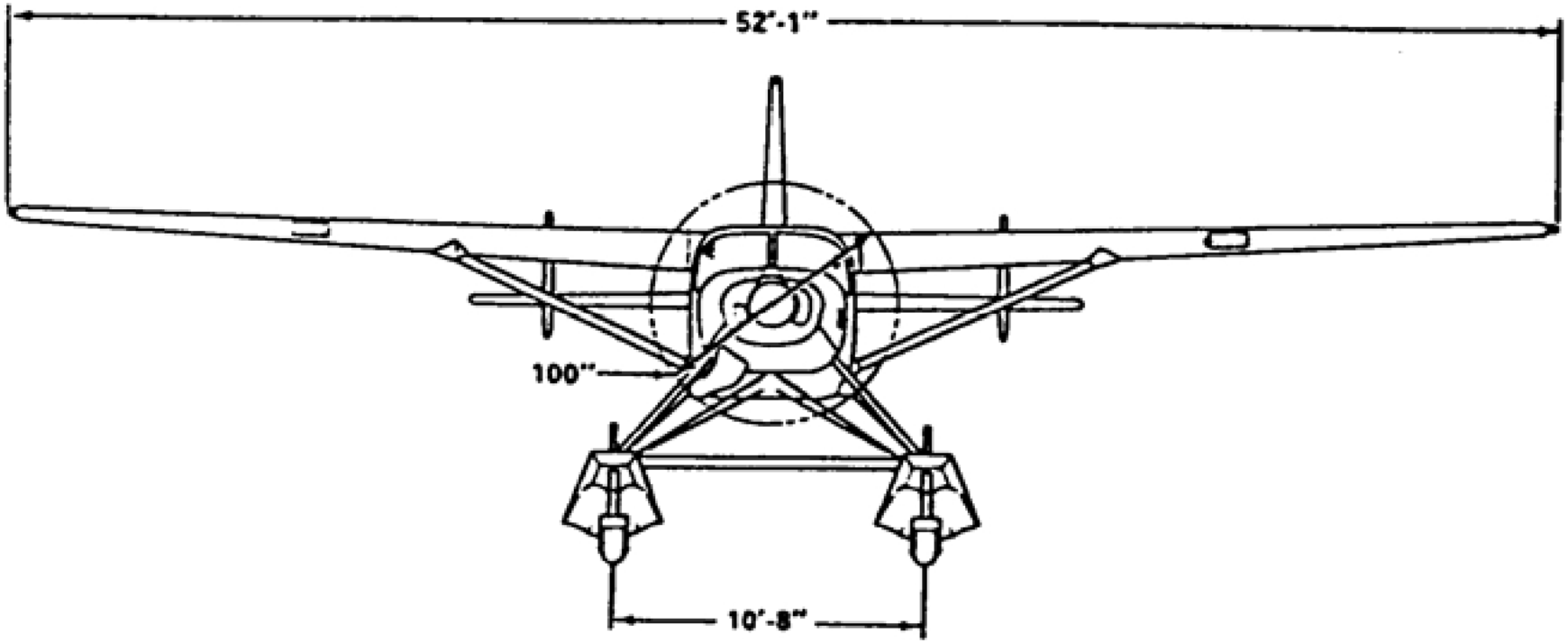


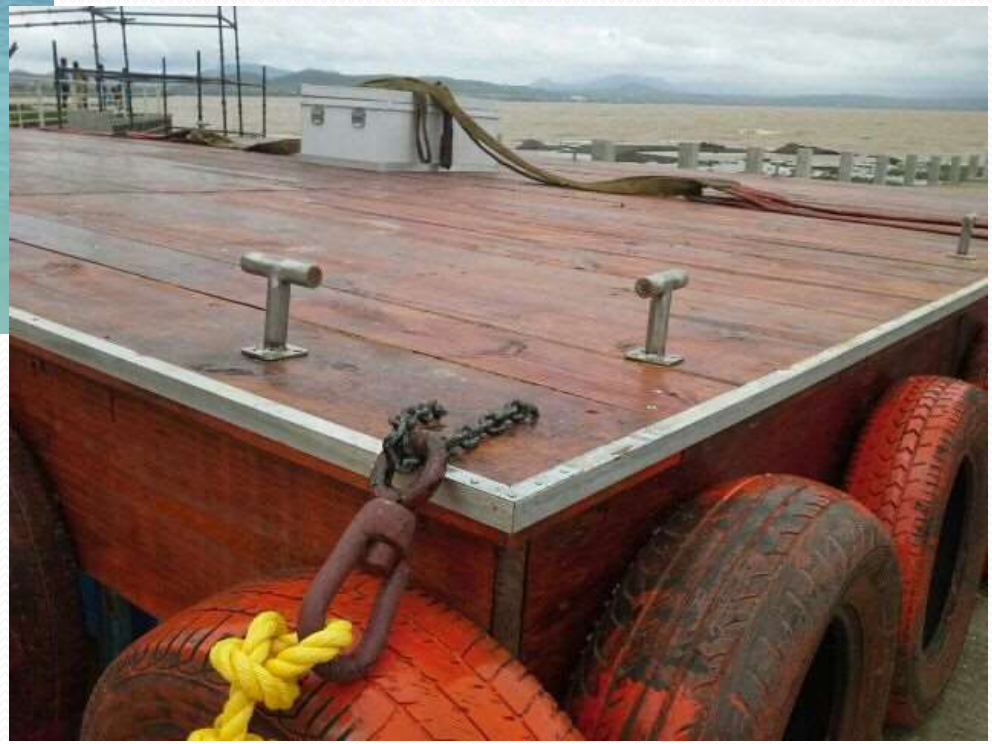
NOTES:

1. Dimensions shown are based on standard empty weight and proper gear and tire inflation.
2. Wing span shown with strobe lights installed.
3. Wheel base length is 14' - 7".
4. Minimum ground turning radius (* pivot point to outboard wing tip) is approximately 31' - 5".

Dimensions



Passenger Ramp/Dock




VT-MHB


VT-MHB

Advantages of the Seaplane to the Local Economy

Unique Advantages

- Extremely high profile project. Big wow factor. Gives a huge impetus to tourism
- Boosts local industry like transport and other allied services
- Provides employment to the local population
- Could lead to establishing a pilot training academy and MRO for seaplanes
- Leads to boom in the real estate around the waterdrome

Unique Advantages

- Provides instant air connectivity be it for tourism, disaster management / governmental need
- Offers last mile connectivity with remote areas
- Ideally suited for operations to lakes, rivers, dams, beaches backwaters and small air strips etc
- Can operate in coastal as well as landlocked areas which have suitable water bodies /airport
- Ensures even distribution of prosperity by bringing all areas under accessibility

Unique Advantages

- Converts vacation destinations into weekend destinations. Great transport option for areas blessed with diverse water bodies
- Saves Govt time and heavy investment in aviation infrastructure like airports and runways etc
- No gestation period. Almost over-night air connectivity to any region
- Promotes faster economic growth of all regions as tourists will travel to more than one destination on same day

Environment Neutrality

Environment Neutrality

- Primary area of seaplane are engine, wings, fuselage and floats
- Except for floats (hollow), no other part comes in contact with water body
- Engine is a sealed unit thereby preventing any oil/fuel leakage. Zero tolerance as per manufacturer standard
- Wings hold the fuel tank. Sealed and secured always. Zero tolerance
- Fuselage has no items/parts which are in any way detrimental to the water. Non toxic, anti-fouling paint
- **No toilets in the aircraft**

Environment Neutrality

- **Seaplanes generate no more than a 3-4 inch wake – not enough to be a factor in shoreline erosion or disturbance to marine life**
- **Seaplanes do not store or discharge oily bilge water or sewage**
- **Seaplanes do not discharge gallons of fuel and oil into the water as many other powered watercraft do** (as much as three gallons per hour)
- **Seaplanes do not discharge the contents of chemical toilets as they dont have toilets**

Environment Neutrality

- **A Seaplane's propeller is entirely above the water and unlike boats does not disturb sediments or marine life,** nor does it contribute to marine noise pollution
- **Aviation fuel does not contain MTBE - a toxic additive found in automotive and marine fuels**.
- **Unlike boats, the exhaust from a seaplane's engine is discharged into the air well above the water's surface** where it can dissipate without impacting water quality.

Environment Neutrality

- Seaplane operations are infrequent and statistically insignificant compared to motorboat operations.
- In addition, they do not spend significant time on the water, or travel significant distances at high speed.
- The seaplane take-off distance is around 800 metres and the landing distance is approximately 400 metres
- Seaplanes operate amongst other water traffic in many busy lakes, harbours and rivers worldwide, for example, they can be found in Vancouver, Seattle, Sydney, Lake Como, Maldives, Fiji, Hawaii, Norwegian Fjords, Alaska, Arctic circle and also on the Great Barrier Reef.

Environment Neutrality

- **It stays in water for barely a few seconds during its take-off and landing phases as compared to boats traversing the same distance**
- **The fishing area is always open to the fishermen except during the brief take off and landing phases**
- Compared to seaplane, even trawlers are bigger in size

Environment Neutrality

Noise comparison

Noise	dba	Example
Firearm	140+	Various locations
REM Rock Concert	???	Excellent band !
Military jet	120+	
Jet ski	110	
Chainsaw	105	Forestry / logging
Grass Cutting	88-100+	Golf courses
Bulldozers	99	Hotel and golf course construction
Tractors	95	
Truck/motorbike/bus	90	Duck Bay, Luss, Firkin Point
All terrain vehicles	85	
Forklifts	84	
Speedboat	65-95	
Seaplane	75	on take-off only @ 1,000' (20 secs)
Inside car 30 mph	73	
Normal conversation	65	

* 8 db difference is when humans perceive a halving or doubling of sound *

Internationally Accepted Facts about the Seaplane's Environment Neutrality

Environment Neutrality

The US has the largest operational seaplane fleet in the and world a large part of which is owned by the Govt.

In a recent 5 year study on the environmental effects of Seaplanes the **U.S. Army Corps of Engineers**, who are responsible for the waterways in the U.S.A., concluded that -

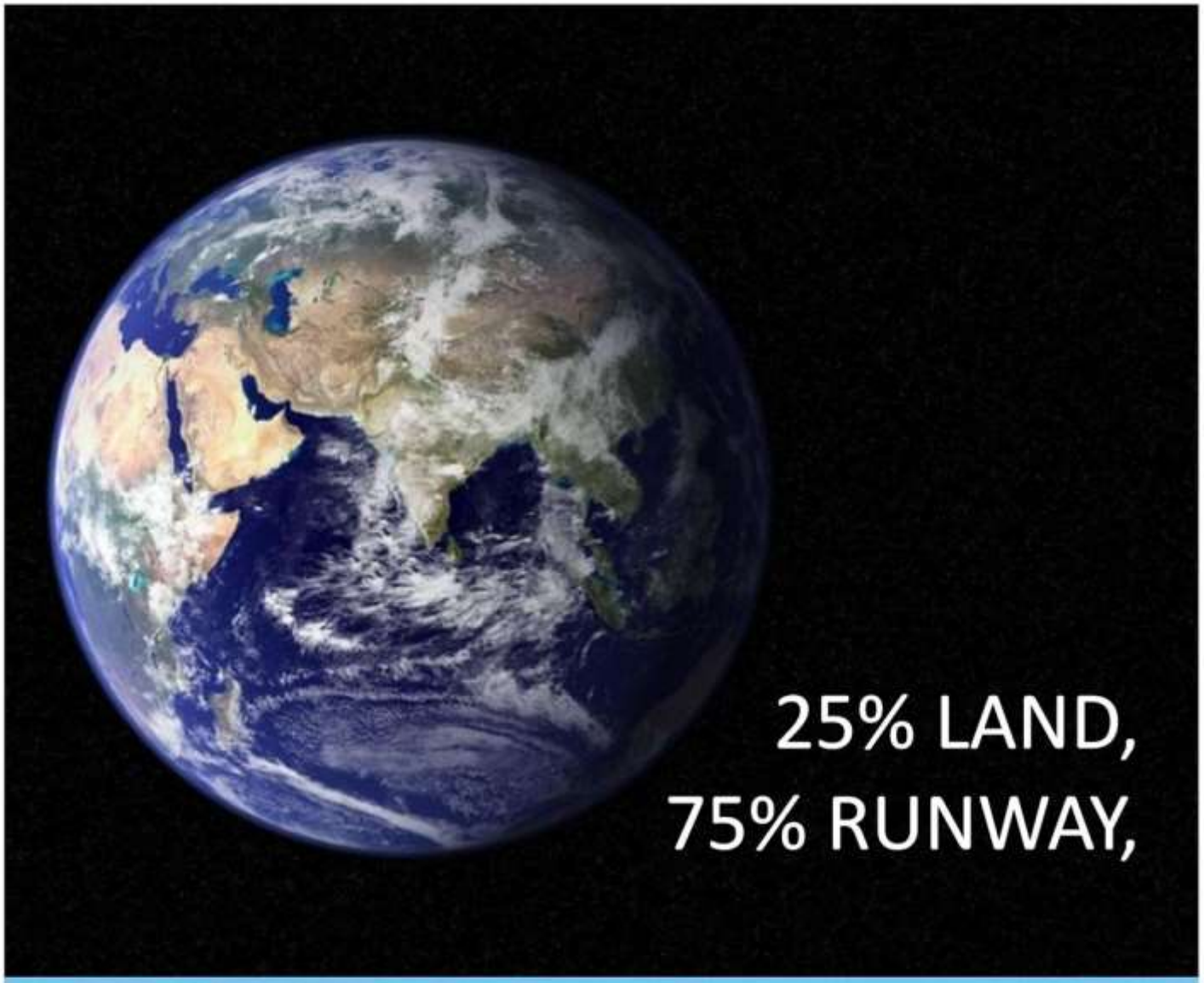
- • Air Quality : no impact
- • Water Quality : no impact
- • Soil Quality : no impact
- • Wildlife : no impact
- • Fisheries : no impact
- • Hydrology : no impact

Environment Neutrality

- The **U.S. Fish & Wildlife Service** owns a fleet of Seaplanes that is used for the safe and efficient surveillance and tracking of wildlife
- The **U.S. National Parks Div** not only permit seaplane use in their wilderness areas but advertise it as a method of access
- The **U.S. National Oceanic and Atmospheric Administration** (NOAA) has a fleet of seaplanes which are used extensively for biological work, including sea Turtle and mammal surveys

Environment Neutrality

- The **Washington State Department of Ecology employs Seaplanes to sample water quality** – the **Seaplane is the only form of transport (excluding rowing boats and kayaks) that does not contaminate their findings**.
- Seaplanes are one of the few forms of transport allowed on the fragile eco system of Great Barrier Reef



Take off from an airport and arrive at your destination in style in India's first seaplane service. Where every take off and landing is an experience of a lifetime and no destination is impossible. Break away from the monotony of traffic and discover you own private getaways in the hidden lagoons, coves and beaches in places inaccessible by road. Sit back and rejuvenate as the air,

MEHAIR

Synergising Air, Water & Earth