

# Floatplane Safety and Risk Management

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April 13, 2013

# Risk Management Refresher

- Four Basic Principles of Risk Management
  1. Accept no unnecessary risk
  2. Make risk decisions at the appropriate level
  3. Accept risk when benefit outweighs cost
  4. Integrate risk management into planning at all levels

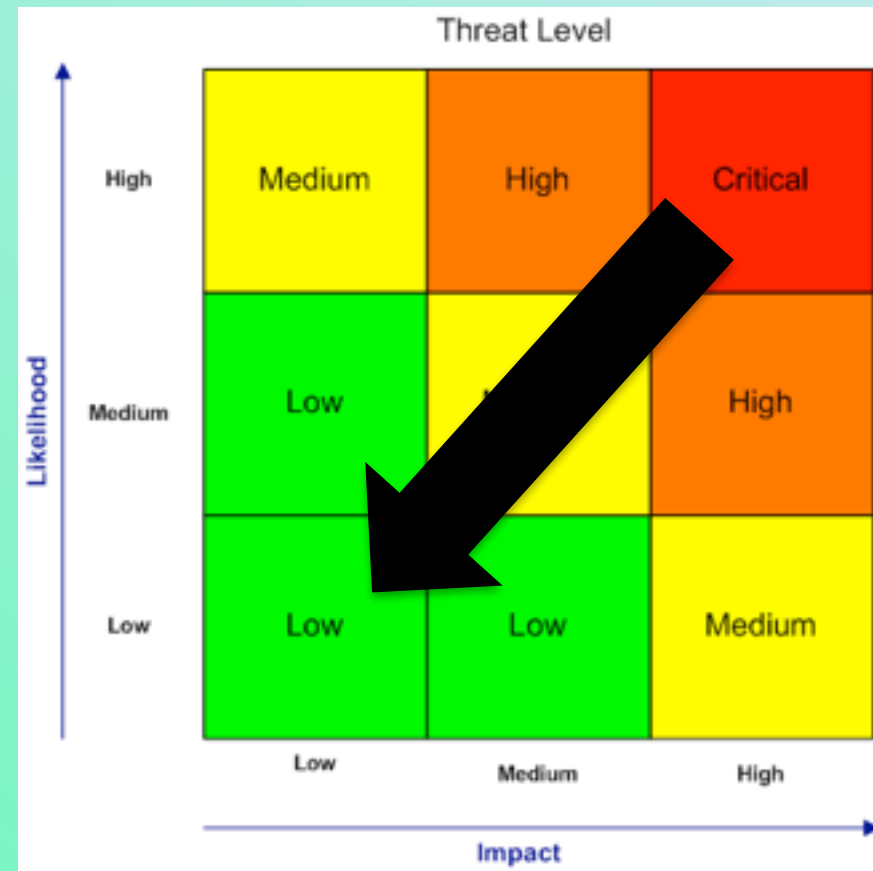
- Severity of Risk
  1. Negligible
  2. Marginal
  3. Critical
  4. Catastrophic



- Likelihood of Risk
  1. Improbable
  2. Remote
  3. Occasional
  4. Probable

# Six Steps In Risk Management

1. Identify
2. Assess
3. Analyze control measures
4. Make control decisions
5. Implement controls
6. Supervise & review



# There's always some handy Mnemonic

- **PAVE**

- P pilot
- A airplane
- V environment
- E external pressure

- **5P's**

1. Plan
2. Plane
3. Pilot
4. Passengers
5. Programming

- **IMSAFE**

- Illness
- Meds
- Stress
- Alcohol
- Fatigue
- Eating

# Floatplane Risk Management Topics

1. Areas of Operations
2. Wind and Water
3. Preflight
4. Departure
5. Takeoff
6. Mountain Operations
7. Slow Flight
8. Landing
  - Wheels and Water
9. Arrival

*Now, lets apply  
Risk Management  
to floatplane  
operations*

This is what we want to do



Let's do it safely

# Floatplane Areas of Operation

- It's nature, not concrete. Whole different gig.
- Often no ASOS/AWOS, just eyes and skies
- Terrain is often close in
- Landing & Takeoff surface are in motion both vertically and horizontally
- FOD, both living and non-living is difficult to see.
- You have no brakes
- Once you commit, you are committed.
  - *Mitigate the Risk ahead of time*

Louisiana



Washington



Alaska









# Preflight

# Getting ready to go

- What's 2<sup>nd</sup> worst thing that could happen?
  - You drop cellphone in the water
  - Wear Zippered Pockets!
- How much can you do before you even get in the water?
- Do you want to start engine first time on the water?
  - No, you might end up floating to Mercer island

# At Home Checklist

1. Wallet, Credit Cards, Cash, and Drivers License
2. Pilots License(s) and Medical Certificate
3. Charts (VFR, IFR, Approach, Departure, Runway)
4. Airport Facility Directory
5. Navigation Log, Flight Plan, and Weather Briefing
6. Headsets, batteries charged, spares
7. Kneeboard, Logbook, pens, pencils, and highlighters
8. Keys (Car, Airport, Airplane)
9. Portable GPS, batteries charged, spares
10. Handheld Radio, batteries charged, spares
11. Flashlights, Batteries charged, spares
12. Seat Cushion
13. Glasses, Sunglasses, Cleaner
14. Hat, Jacket, Gloves, Umbrella
15. Medicines and first aid kit
16. Cell Phone, charged
17. Watch

# Passenger Brief Checklist 91.519

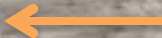
1. Smoking, Food, Alcohol & Drugs 91.17,535
2. Electronic Devices - Off 91.21
3. Pilot / Crew Interference 91.11
4. Seat, Seatbelt & Shoulder Harness 91.107
5. Exits, Egress & Ditching Procedures
6. Oxygen use 91.211
7. Baggage & Equipment Location & Stowage
8. Floatation Devices - Location & Operation
9. Fire Extinguisher - Location & Operation
10. ELT - Location & Operation
11. Signaling Devices - Location & Operation
12. Brace Position – Demonstrate
13. Heat Lessening Position – Demonstrate
14. Propeller Flaps and Elevator Caution
15. Passengers Needing Assistance
16. Positive Exchange of Controls

# Before you launch

- You've decided you are OK, the Weather current and forecast is Floats-OK and you have a plan for where to go...
- Check the wind and water (Go look at it)
- Clean up the launch area
- Then ...
  - Go do your airplane preflight
    - What do you not want to discover after you start floating away from the shore?
    - How far into checklists can you get prior to launch?



**DANGER !**  
RAMP VERY  
SLIPPERY





## C172-XP Float Checklists

### Pre-Flight

- POH - Chapter Four
- Window Cover - Stow
- Engine Plugs - Stow
- Water Rudders - Test
- Floats – Inspect & Pump
- Vortex Gens – Inspect
- Passengers - Briefed

### Engine Start

- Tach/Hobbs – Record
- Circuit Breakers – Check
- Instruments – As req'd
- Fuel – Both
- Cowl Flaps – Open
- Trim – Takeoff
- Mixture – Rich / as req'd
- Prop/RPM – Full
- Primer
  - Cold - as req'd
  - Hot - None
- Master Switch- On
- Fuel Pump
  - Cold - On till flow
  - Hot – Off
- Key – On
- Throttle – Advance slowly
- RPM – Set 800
- Oil Pressure – Green

### Power Settings PA =2000' /8LM

- RPM/MP BHP KTAS GPH
- 25/26 – 81%, 114/100, 11.5
- 24/24 – 72%, 107/95, 10.2
- 23/23 – 63%, 100/90, 8.9

### V Speeds

- Vx - 56 kia
- Vy - 72 kia
- Va - 105 kia

### Runup

- Seatbelts – fastened
- Doors – close and lock
- Radios - Set
- Transponder - On
- ATIS - Set DG, Altimeter
- Flight Controls - Free  
and Correct
- Oil temp - > 75 deg
- Lights As Required
- Throttle - 1800 RPM
- Magnetos - 175/50
- Propeller - Cycle
- Engine Insts. - Check
- Ammeter - Check
- Suction - Green
- Throttle - Idle

### Takeoff

- Area - Clear
- Water Rudders - Up
- Fuel – Both
- Trim - Takeoff
- Cowl Flaps - Open
- Flaps - 20 deg
- Mixture – Rich
- Prop/RPM – Full
- Throttle/MP – Full
- All Inst – Green

Takeoff - 1135' water / 1850' 50'

### Departure / Climb

- Positive Rate
- Throttle/MP - 25"
- Prop/RPM – 2500
- Flaps – in
- Mixture – as required

### Cruise

- Cowl Flaps – as req
- Mixture
- Prop/RPM – Cruise

### Descent

- ATIS - Set DG, Altimeter
- Power / Mixture/Trim
- Cowl Flaps – Closed

### Before Landing

- Seatbelt – check
- Wind Direction
- Water Conditions
- Water Rudders – Up
- Fuel – Both
- Cowl Flaps – Closed
- Flaps – Set
- Throttle/MP - 15", as req'd
- Prop/RPM – Full

Landing - 660' water / 1325' 50'

### After Landing

- Water Rudders - Down
- Cowl Flaps - Open
- Flaps – In
- Seatbelts – Off and Stow
- Headset – Off and Stow
- Avionics - Off
- Master Switch - Off
- Seat Back and Door Ajar

### Docking / Engine Off

- Prop/RPM – Full
- Throttle/MP – Out
- Mixture – Out
- Key - Off & Out
- Water Rudders - Up
- Fuel – Right

### Tie Down

- Yoke Lock - In
- Pitot Cover - On
- Cowl Flaps - Closed
- Cabin - Air Closed
- Floats – Pumped
- Window Cover - On
- Engine Plugs - In
- Tie down - Complete
- Doors - Locked

When do you want to find a checklist item failure?

# Fuel Planning – know your fuel radius



# How to break your plane

- Spear the floats with a float truck
- Hit a wing on a building or tree or truck, or plane
- Drop your plane off the truck
- Drive your plane into the dock
  
- Learning to drive the float truck is as hard as learning to fly a plane.
  - *It's always Cross-Controlled!*







Ouch!

# Reading Wind and Water







# Reading Weather



See the Front

Five Minutes Later

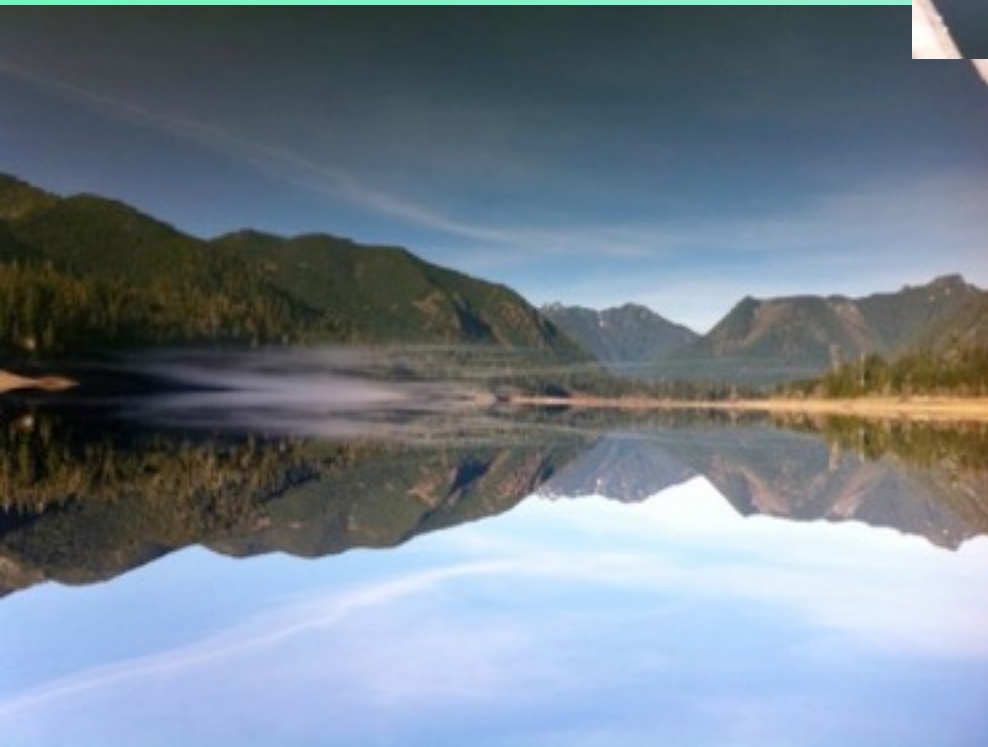


# Glassy Water



# Glassy Water

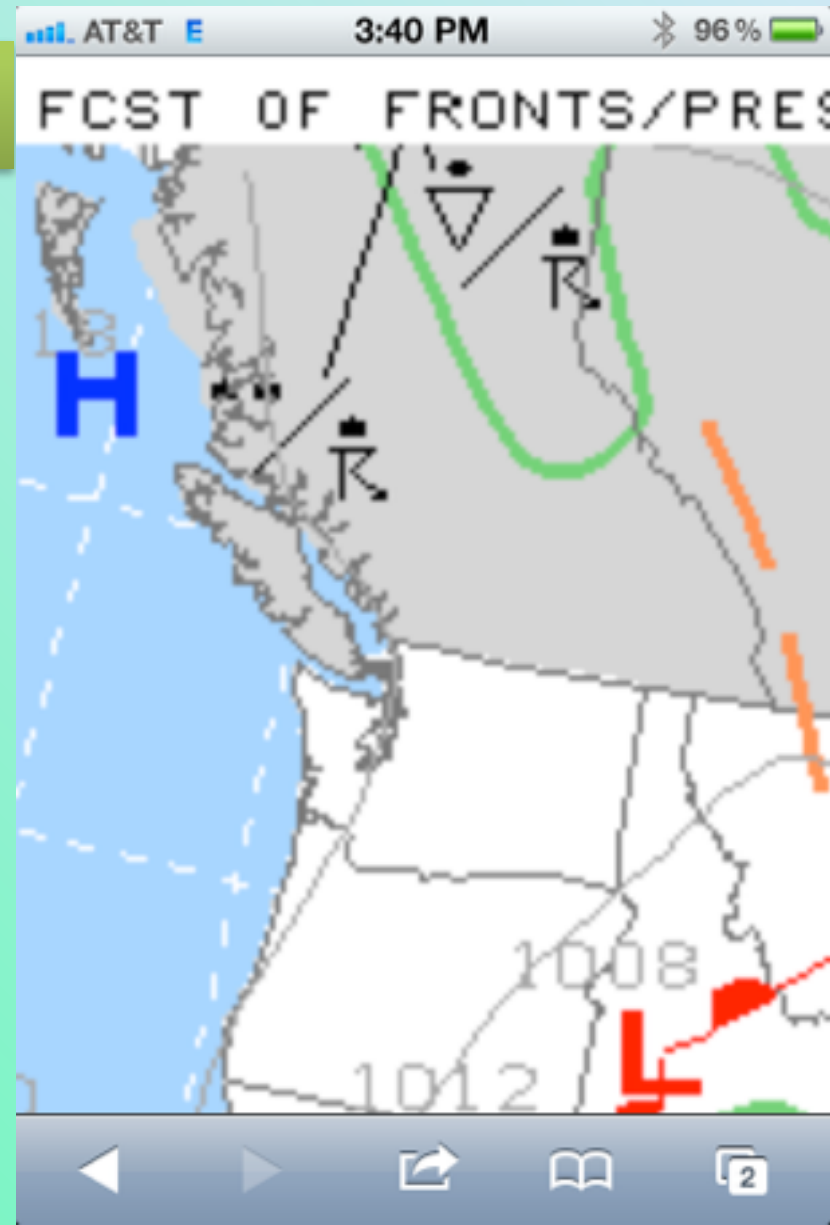
Which way is up?



# Good WX / Bad WX

Nice day to go fly →

**Never Fly into the Red Blob**





***Decision Time***

# Make Weather Reasonable Limitations

	CONDITION	LIMIT	Example
1	WIND	Wind gusts exceed 65 percent of the flaps-up stall speed (.65*Vs)	C172 Vs = 44 kt, Don't fly if gust is > 28 kt. Personal limit is 15 kt.
2	WIND	Crosswind component at any anticipated airport is greater than 80 percent of your airplanes demonstrated crosswind component.	C172 = 80%(15kt) = 12 kt.
2	WIND	Winds aloft at proposed altitude exceed 35 miles per hour and you are flying a "small plane".	AIM 7-5-6-c
3	WIND SHEAR	Thunderstorms are predicted within 25 miles of route and moving in direction of route.	
4	VISIBILITY	In pattern if ceiling is less than 1500 agl; (pattern + 500).	
5	VISIBILITY	Enroute (cruise) if ceiling is less than 500 feet above altitude sufficient for safe off airport landing.  Enroute ceiling is less than 2500 feet agl.	
6	VISIBILITY	Visibility is less than 5 nautical miles.	FAR 91.155 requires 3 statute miles minimum visibility in most cases.
7	FOG	Temperature and dewpoint are within 3 degrees and temperature is falling.  Temperature and dewpoint are within 2 degree and trend is unknown.	
8	ICE	Temperature is at or below freezing and visible moisture exists or is predicted.	



# Departure

- The landing worked
  - Use the same route of departure



# Takeoff

# Enroute

How many GPS's are enough?



# Keep your eye on the engine



# Arrival

- Area Inspection
- Wind
- Water
- Current
- Obstructions
- Sea life
- Birds
- People
- Boats



*Paddle boarders are hard to see*

# Landings

- Glassy Water
- Rough Water
- Confined Area
- Crosswind
- Normal
- *Combined*



# Securing



# Summary

- Mitigate Risk as soon as possible
- Stack the deck in your favor
- Have a good day

Share the Dream



Live to Fly Another Day