
North Pacific Ocean
Vic-Maui
Navigation, Weather & Strategy
By Ron Ogilvy
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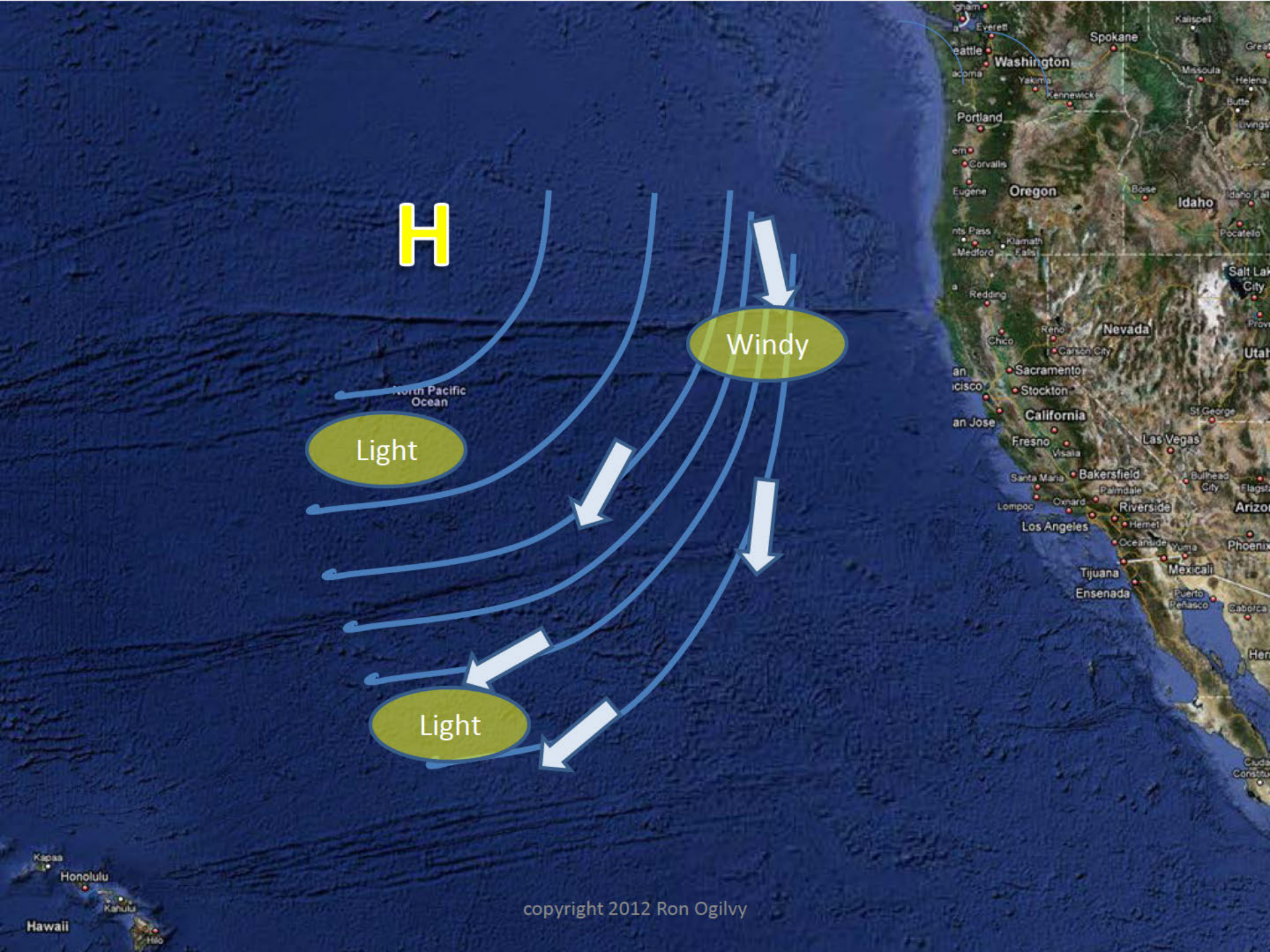
Ensenada
Mexicali
Honolulu
Hawaii

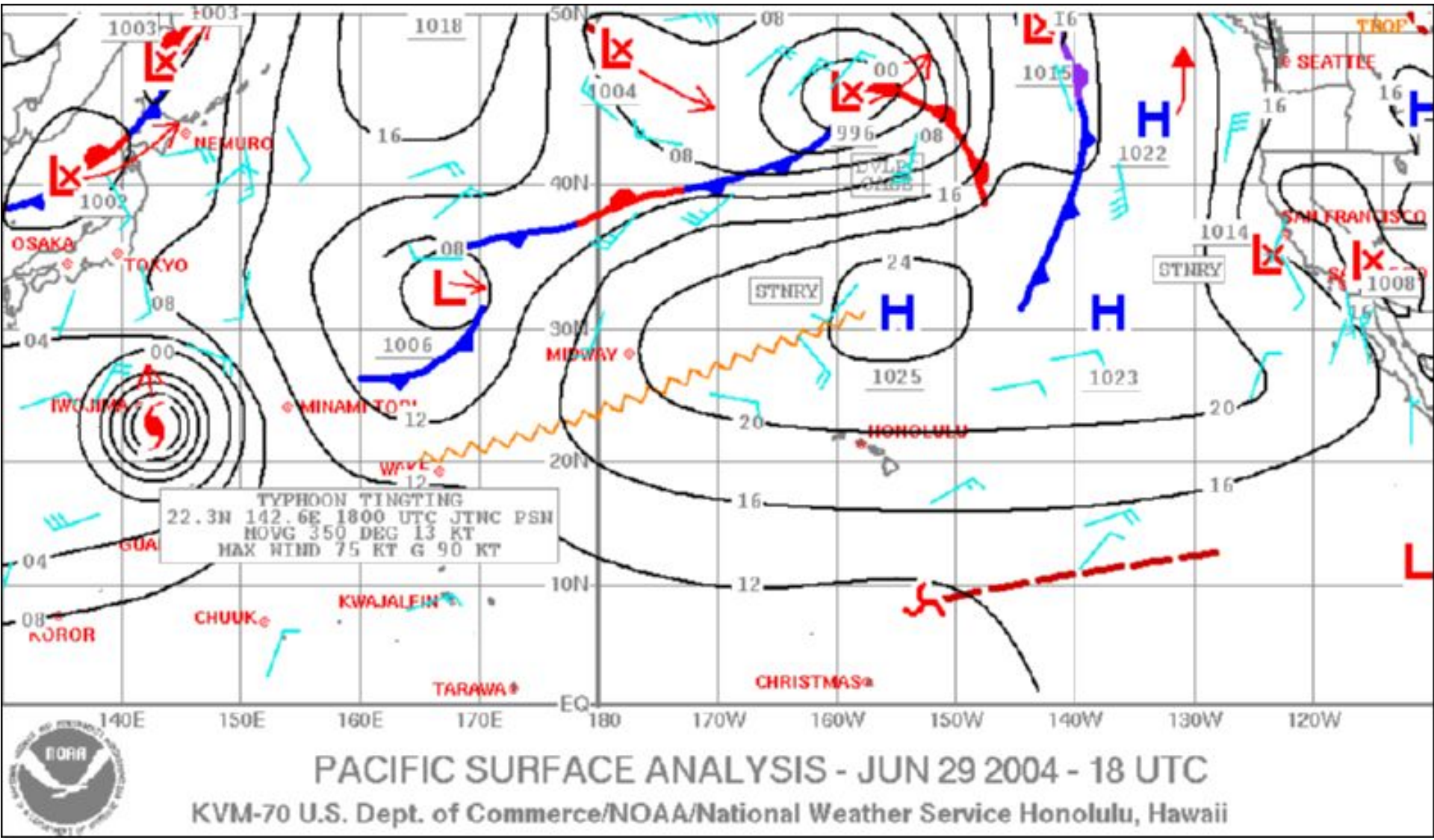
Weather

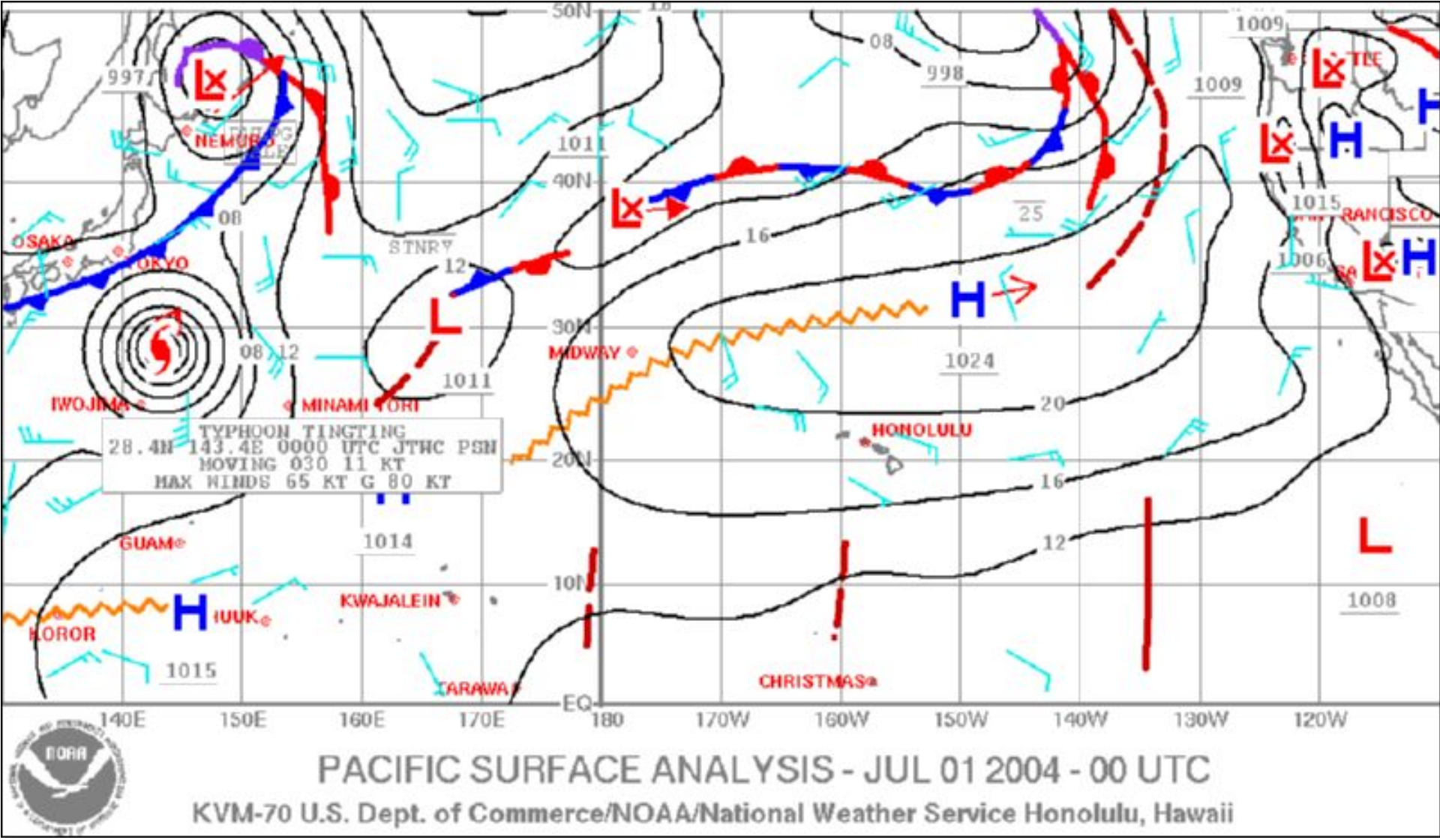
- What is coming in 1, 2, or 4 days?
- How should we adjust for it?

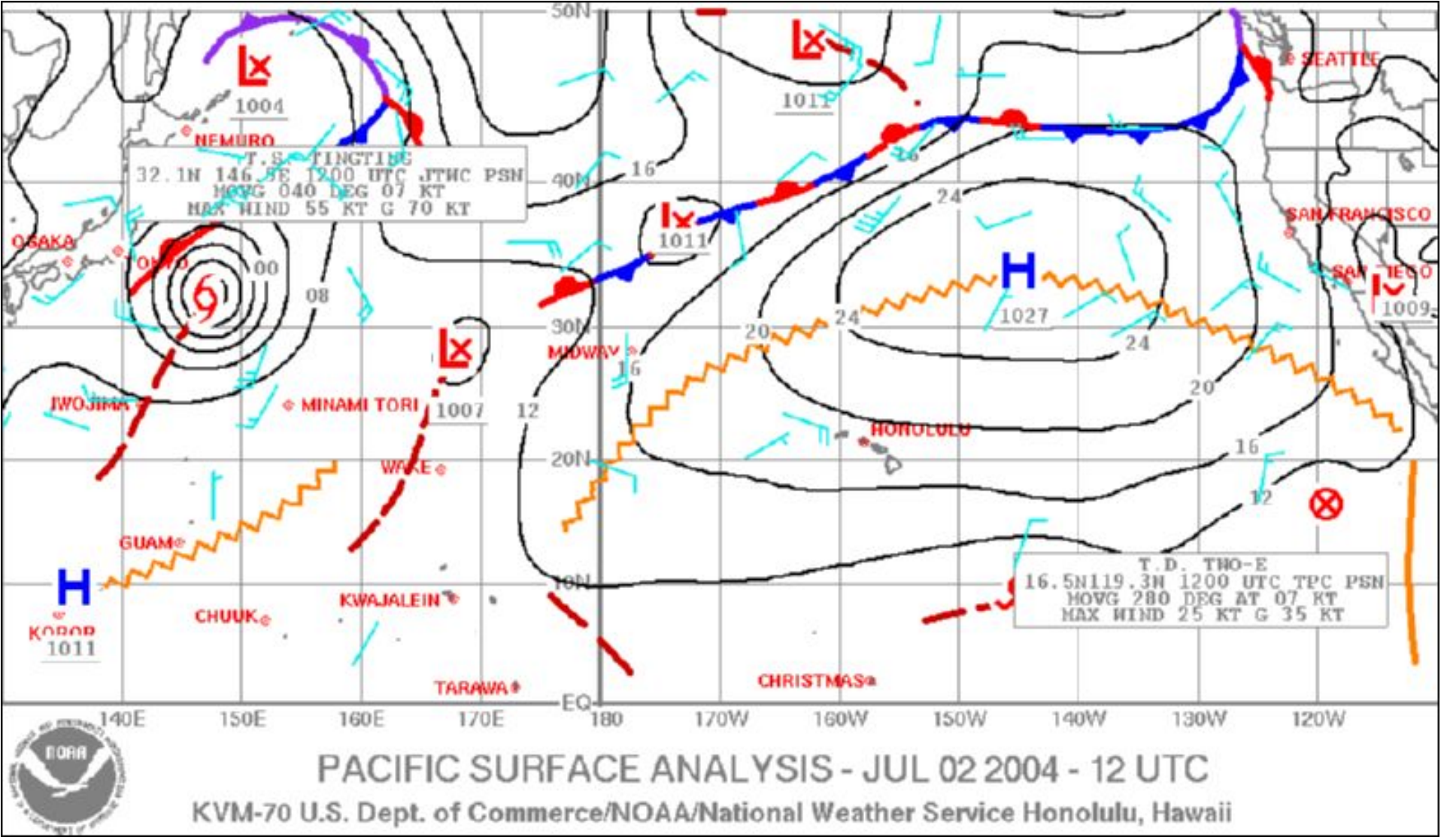
Weather

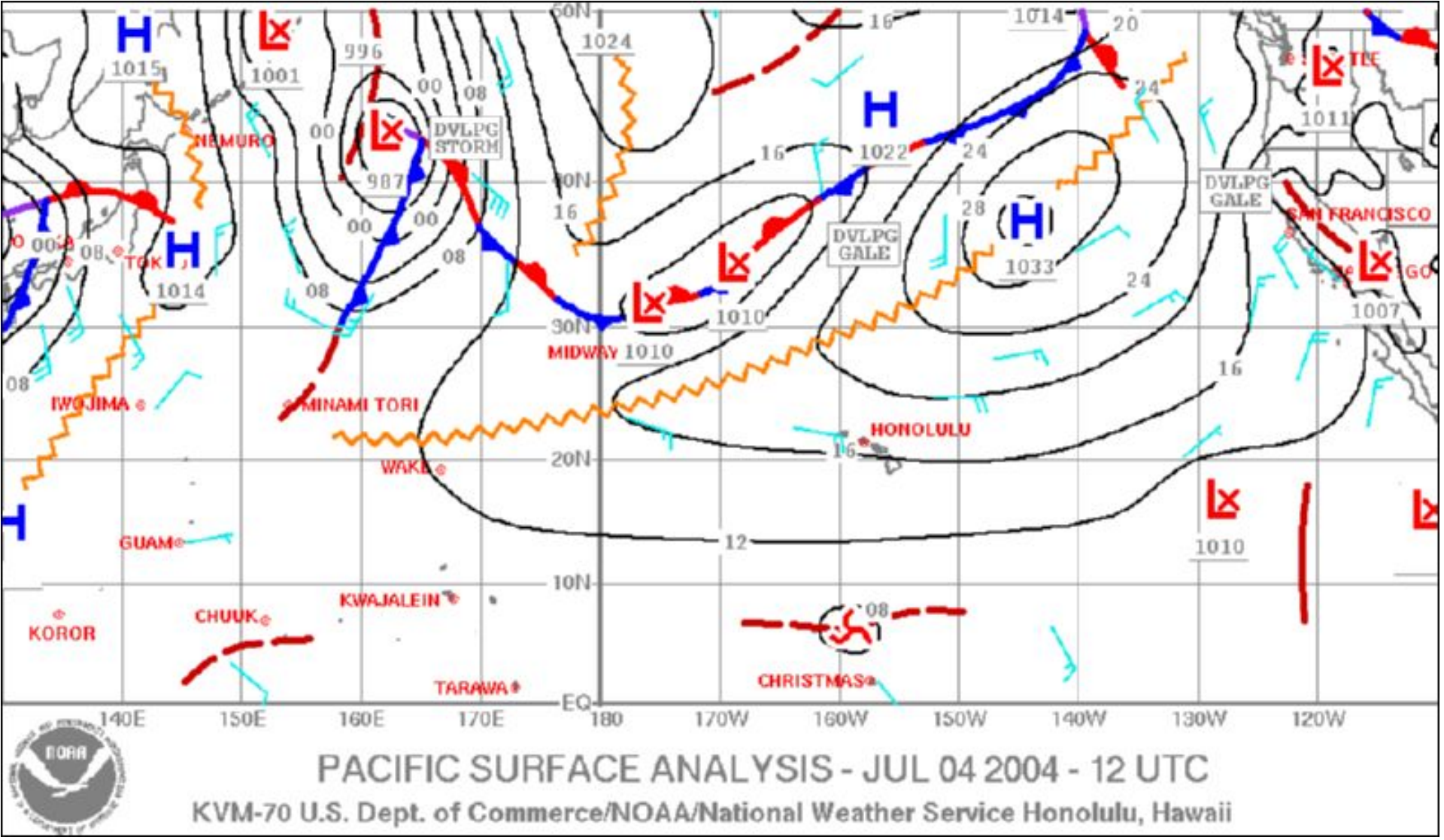
- The Pacific High is the key
- Wind circles clockwise around highs
- Lows typically follow the jet stream
- Wind speed is determined by pressure gradient (isobars indicate gradient)
- Greater pressure gradient over shorter distance means stronger wind

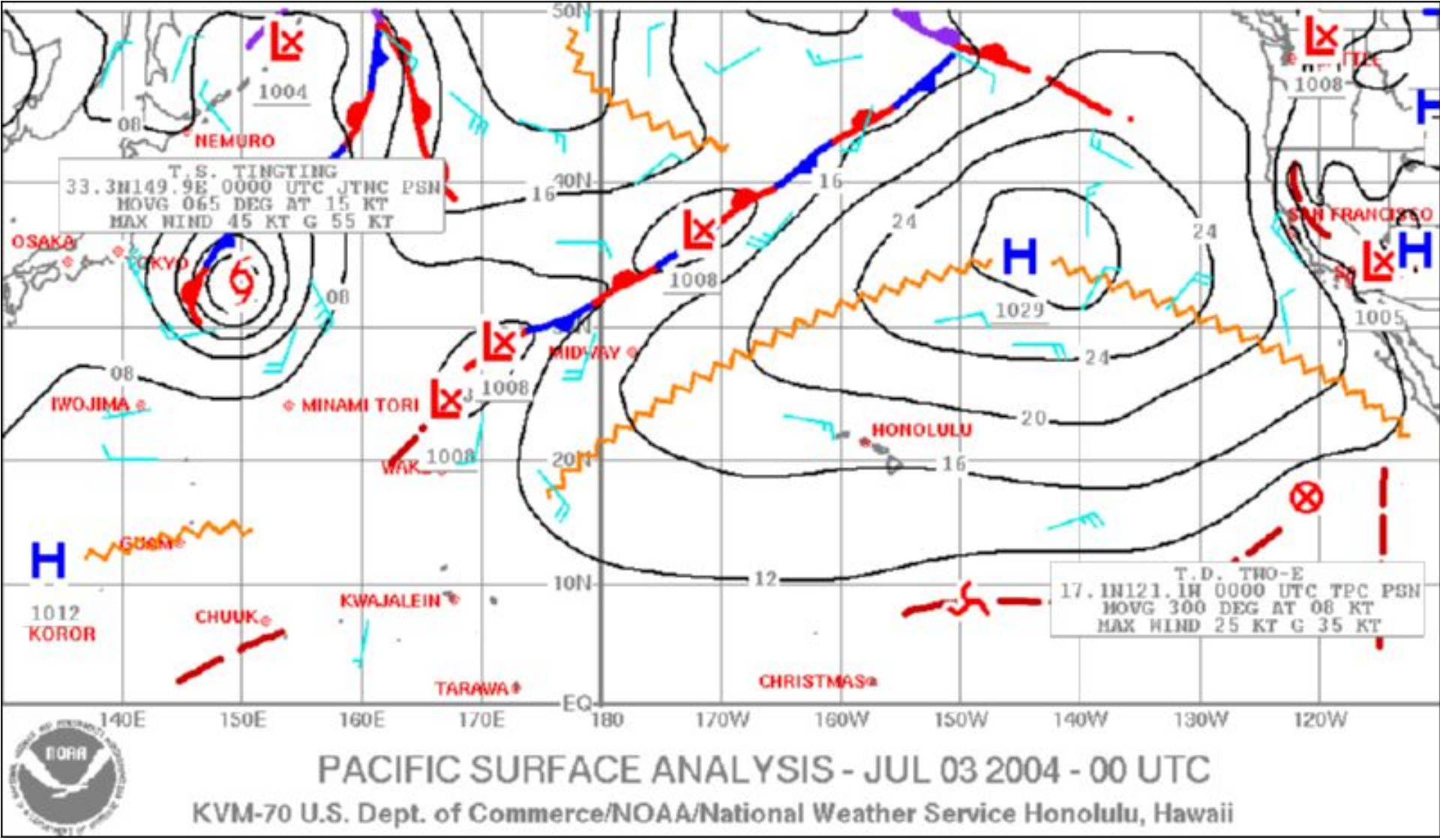












Sources of Weather Information

- Internet - NOAA
  - Weatherfax
  - Grib files (single day or sequence)
  - Text synopsis
- Weatherfax (radio and online)
- SSB synopsis
- Roll call
- Clouds

Navigation

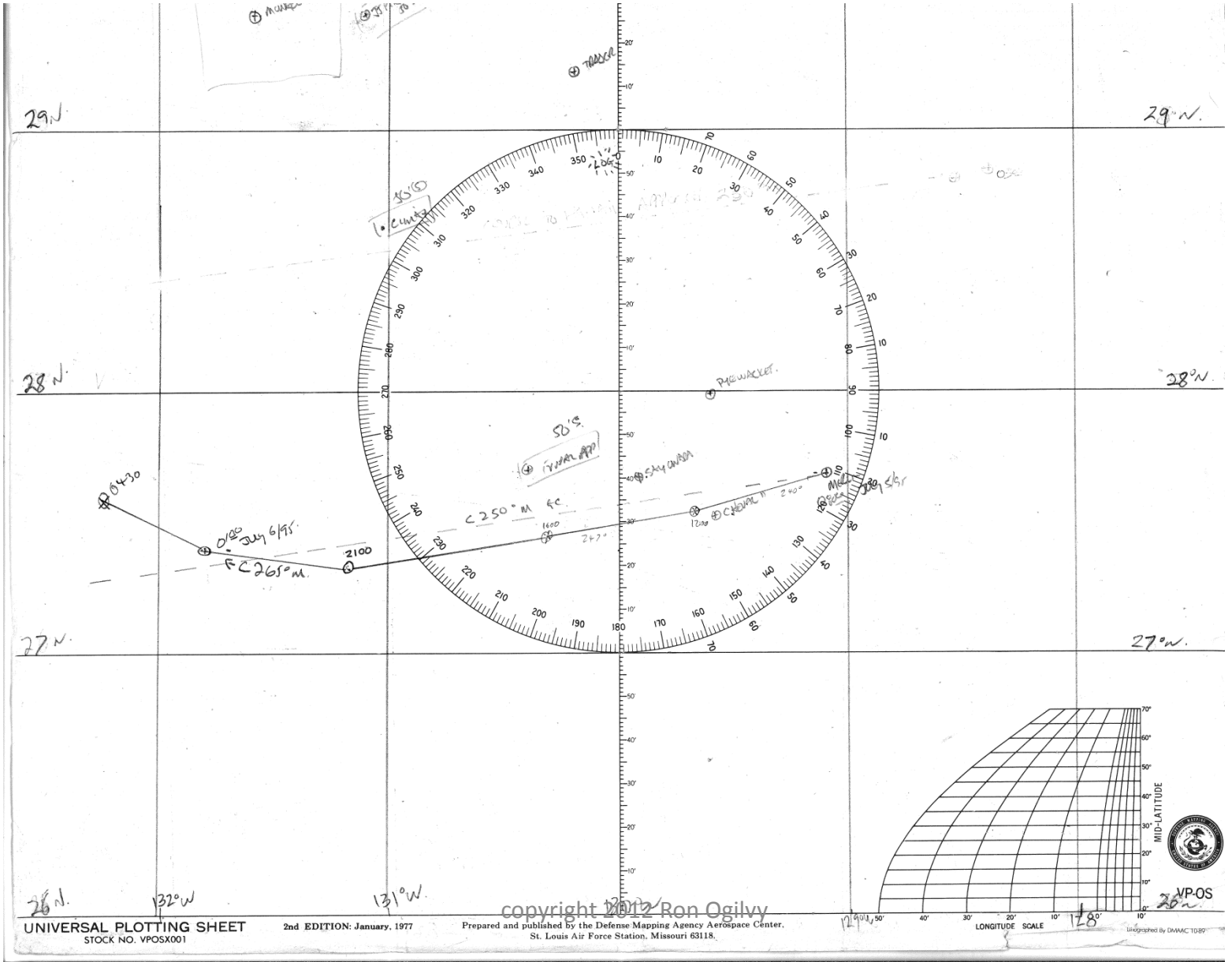
- Will you still be able to race if you don't have your laptop? Or can you just make it there?

  - Where are you?
  - What is the weather doing?
  - Where should you go?
  - Are you sailing fast?
  - How about a safe and fast night landfall?
  - What are your refuge options?

Tracking Progress

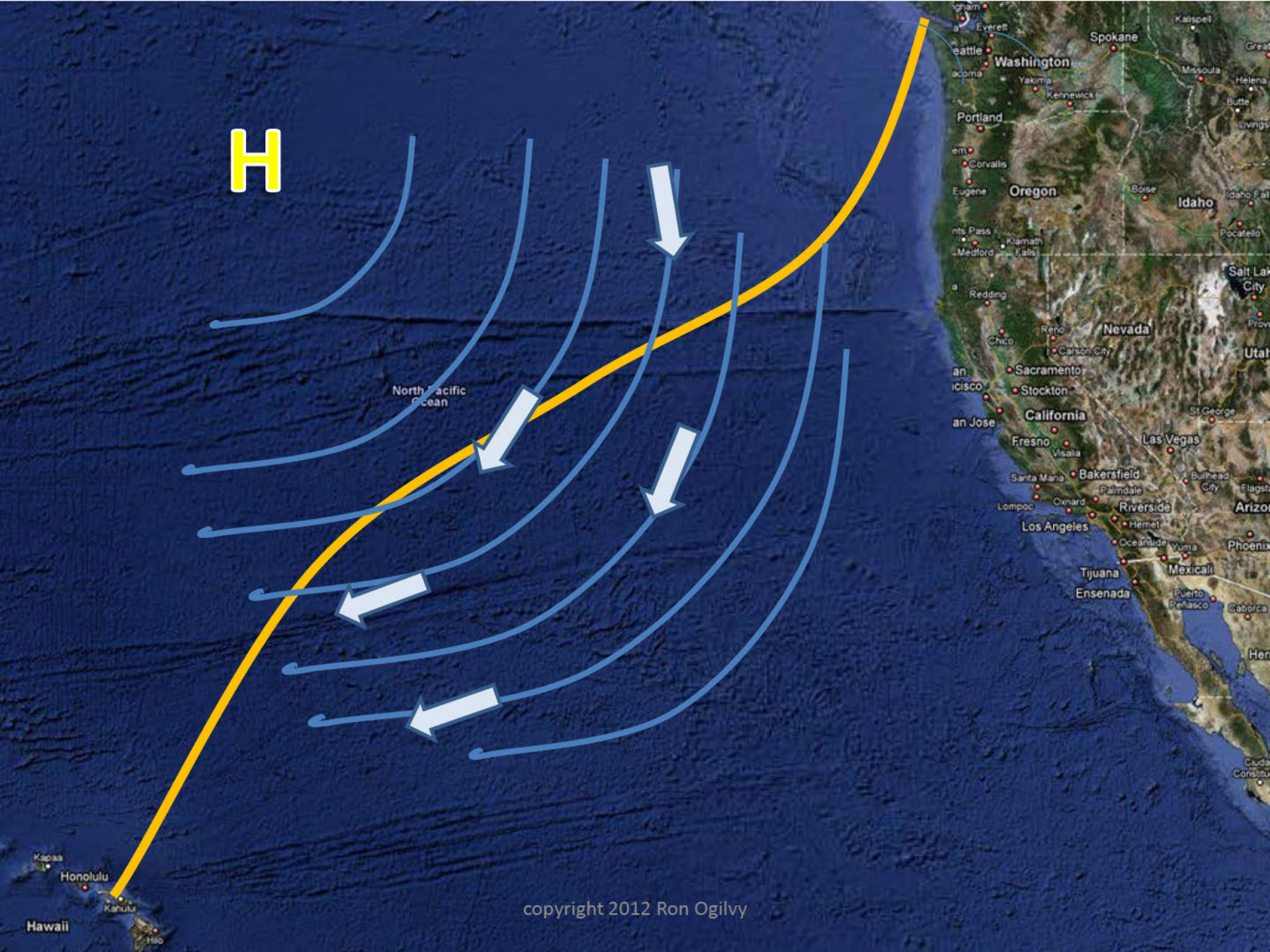
- Plotting sheet – when your computer is down…
  - Your offshore chart
  - Plot progress
  - Plot other boats
  - Plan approaches
  - Create a chart from light lists
- Log your position regularly
  - Helps with helm and sail trim benchmarks
  - Your baseline when the computer fails

Universal Plotting Sheet



Your Day

- Roll Call
  - The day revolves around roll call, meals and watches
  - Who went where and how did it work for them?
  - Don't presume the weather information is precise
- Optimize VMG – to where?
  - Polars (remember that the waves warp results)
  - Let them prove / disprove theories (cosine table)
  - Computer / instruments
- Batteries
  - track performance and log charging
- Sailing?



Secret weapon - cosine table

Course Change from desired	% speed change needed
5	.4
10	1.5
15	3.5
20	6.4
25	10.3
30	15.5
35	22.1
40	30.5
45	41.4

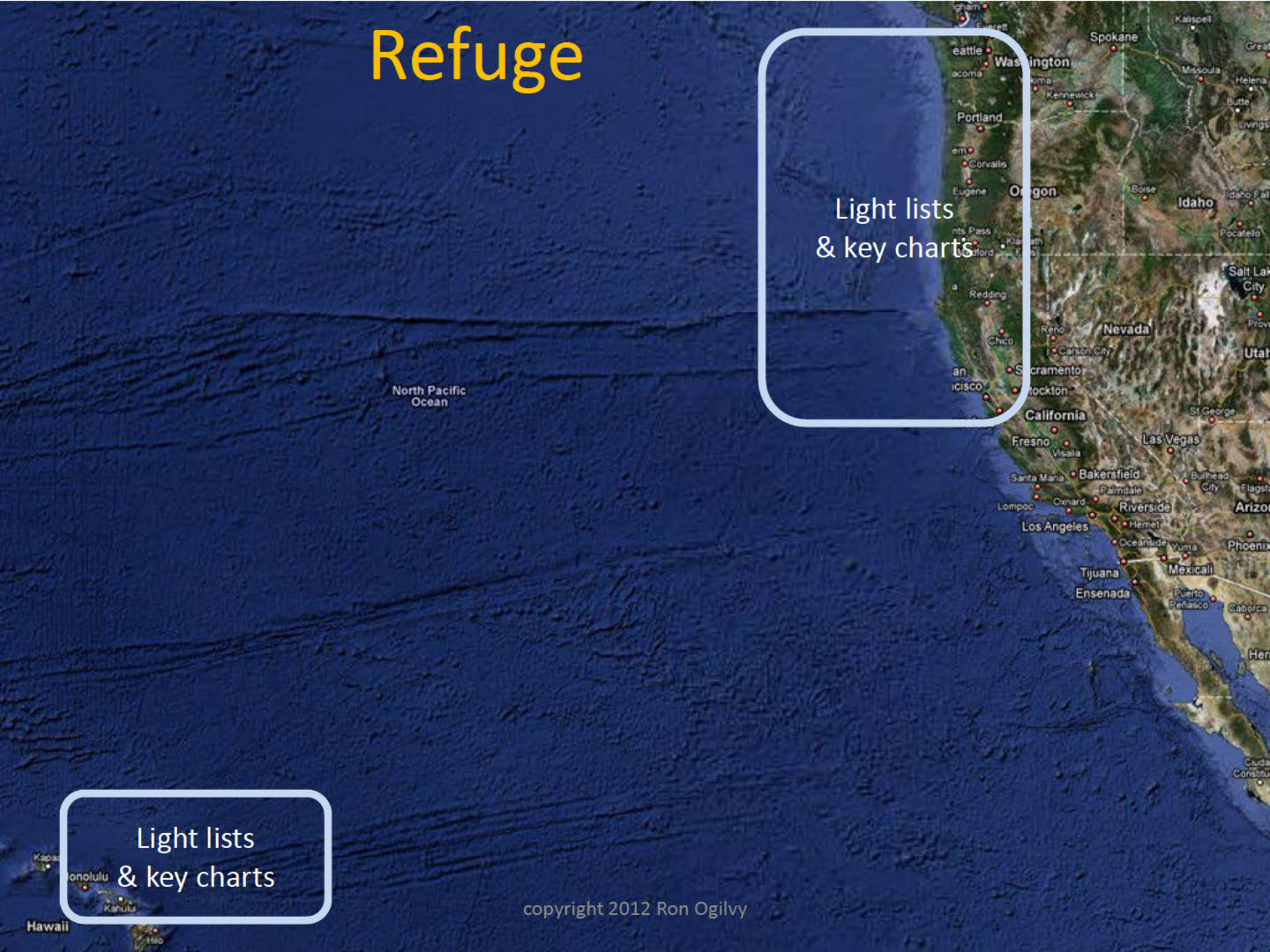
Be Ready When Things go Wrong

- Plan for the unexpected
  - Computer failure
  - Need to seek refuge
  - Electrical failure (motor, fuel, batteries, etc.)
  - GPS system failure?
  - Navigator injured or seriously ill

Tools

- Log
- Radio log
- Light lists
- Charts
- Plotting sheets
- Sextant & reference information
- US Coast Pilot Volume 7
- Radio Frequency Lists (VHF & HF - SSB)
- Weatherfax stations, frequencies and schedules
- Computer & Spare – both fully loaded with software

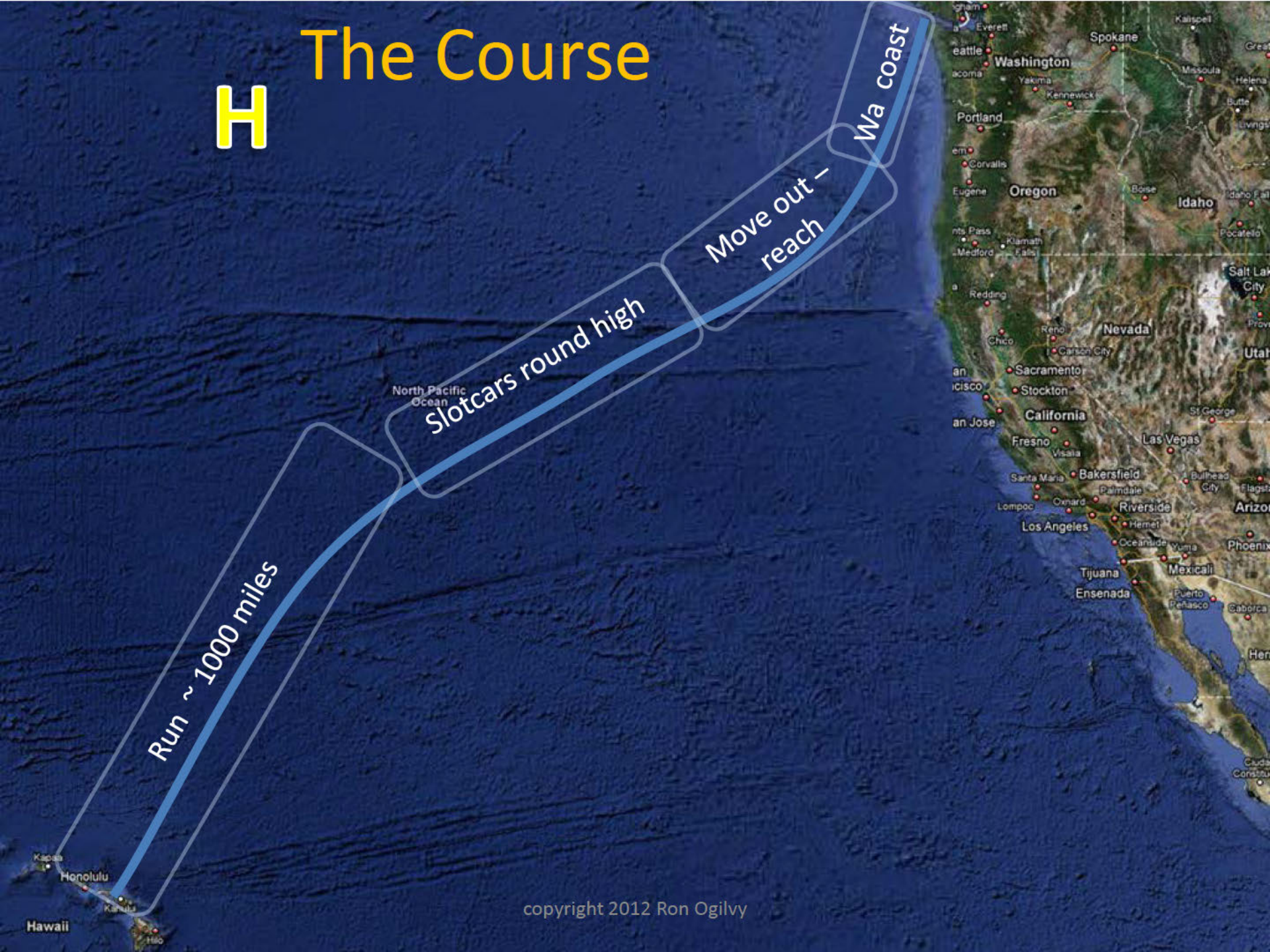
Refuge



Getting navigation help from the cockpit at happy hour.

Strategy

- For whatever reason, you want to get there faster:
  - You don't want to miss the party
  - Someone special is waiting for you
  - You're racing



Juan de Fuca

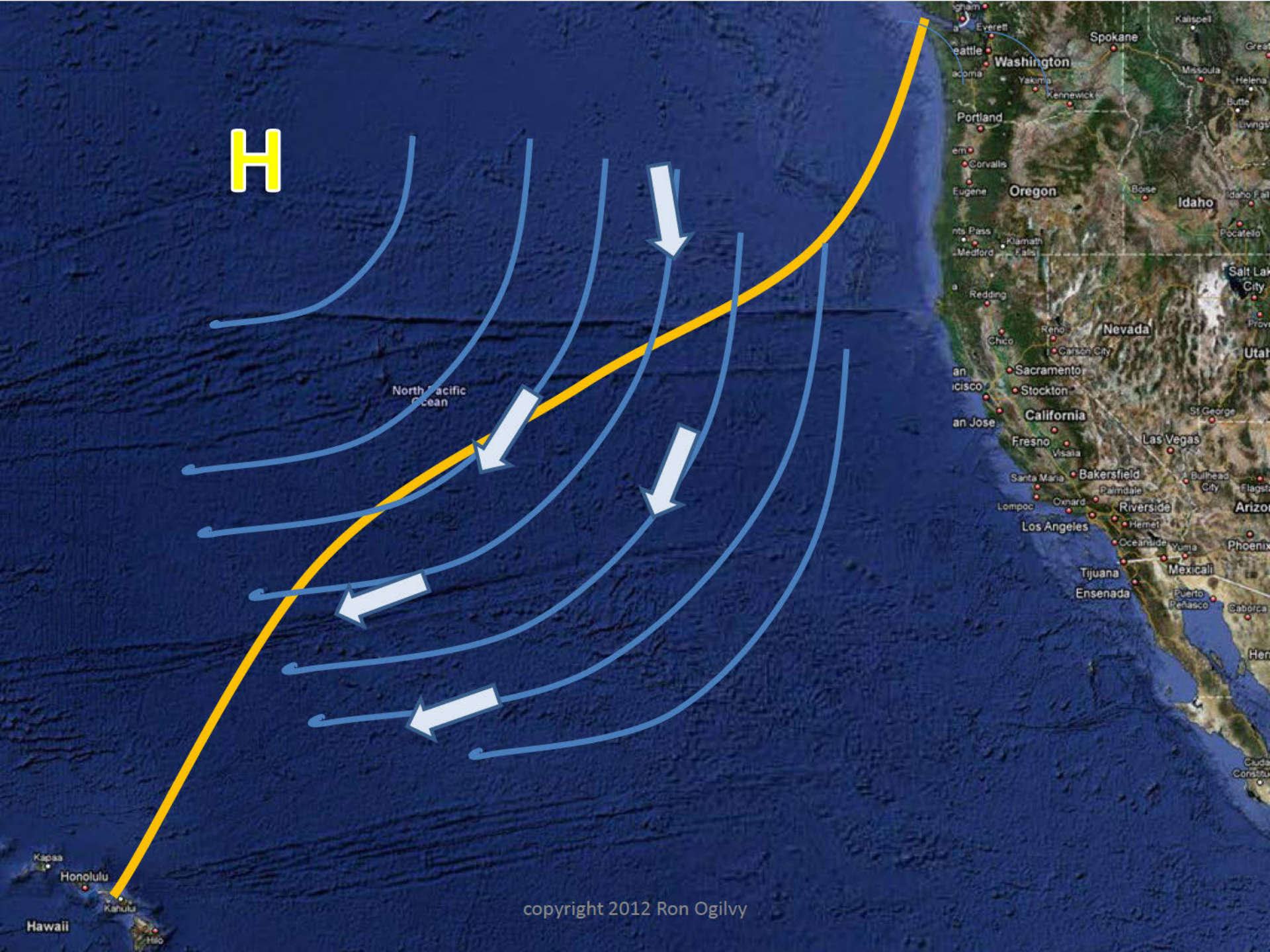
Sail as a Swiftsure
Go through the Race sticking to the shore in a flood
Cross to the US with the ebb, riding a lift across
Stay clear of Clallam bay and Neah bay after midnight
Caution at Duntze mark – currents, shallows, and one time the buoy was missing.

Beyond Flattery

Head South	Work offshore
Take advantage of shore breezes within sight of land especially at night.	If good pressure gradient, offshore will be stronger and more consistent.
Winds might be fluky, but better than calm.	Slower boats have more to gain from a favorable current offshore.
	This is the shortest route if you can pull it off without getting sucked into the high.

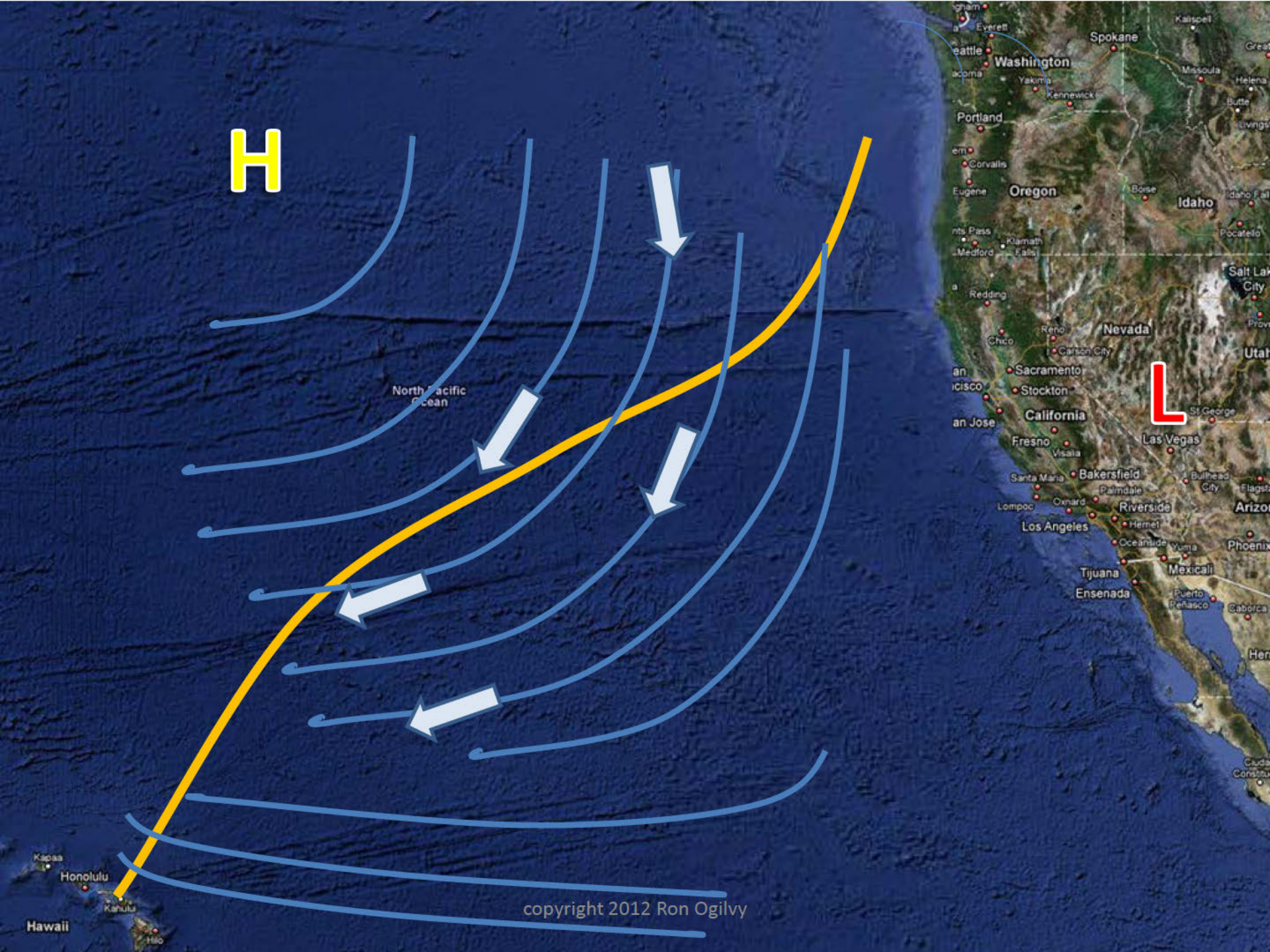
Power Reach Offshore

Hope for 500 to 700 miles of reaching
Objective is to line up for downwind polars around high (slotcars)
What slot do you want? Changing here is easy, later is costly
Pure great circle VMG could take you smack into the high, or could be the golden route
There is usually good pressure gradient just north of San Francisco, but the distance is costly
A ridge of high pressure usually extends from the south east of the high towards California. You will have to cross this somewhere. Look for pressure.
* Reaching is where roundups happen and steering fails



The Slotcars

Advantage Inside	Stay fast, stay South
Inside boat sails shortest route with best lift for layline gybe	Wind is usually stronger further from the center of the high.
Usually lighter wind with no opportunity to sail higher	More conservative, more wind, less risk of getting caught in high, but…
Work south in squalls (near the end of this section)	Extra distance
- Beware spinning out into high - Beware a costly gybe to shift slots.	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The Gybe & Sleighride

Gybe early	Try to call the layline
Go early to reduce risk of overstanding as wind shifts	Ride that lift around the high for a perfect lay line sail to Maui
The trades are stronger further south	Save miles.
Optimize distance downwind	Over standing due to bad judgment or a wind shift will hurt.
If you are too early, digging down at the end will be painful.	

Unwanted Passenger – 1400 miles out

Approaching Maui

Approach early	Sail the layline
Trades get some south in them as you approach Maui (deflecting off the islands). This is a header as you approach on port gybe. A westbound current in the trades adds to this.	
The trades are stronger further south	Best sailing angles and shortest distance on the layline.
Optimize downwind VMG	Over standing will have you on white sails working up to the Pailolo channel
Dig downwind in squalls	

The Finish

Stay Wide	Cut it Close
Keep a bit more breeze by staying wide. This feels wrong when you are close reaching or beating.	Cut close to the wind and rocks for a shorter course.
Watch for being headed out into the channel. Go to white sails quickly if this happens.	You will avoid the header but have lighter wind. It can be close to calm some nights.

Daytime arrival.

- you can smell the pineapples

Celebrate !!

Don't relax just yet.
Bear away quickly. Shallow coral is dead ahead.
Take special care to check for lines before starting the prop.
Get rid of the sails, welcome the guide boat, congratulate each other, then back to work.
The trip to the greeting party is still your responsibility with shallows, coral and a giddy crew. The guide boat is a guide. You are still responsible.
Clean up quickly so you can really enjoy the greeting party.


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Tips for the navigator

- The chart table is yours!
- Communicate with the crew
  - Happy hour report
  - Fleet chart
  - Computer time
- Take the contributions **you** want
- Sleep
- Communicate with your counterpart
- Ensure the advice going to the helm is consistent with your plan
- Keep your reference sheets in plastic sleeves
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