Lake Placid Wave & Mountain Flying Camp

2014 Familiarization & Safety Briefing


What is it all about?

Agenda

- **Be Aware!**
- **Mountain Wave Phenomena**
- **Cloud Formations**
- **High Altitude – You & Your Aircraft**
- **FAI Badge Requirements (Altitude)**
- **Airspace Procedures & Agreement**
- **Ground Operations**
  - **Vehicle Movements**
  - **Launching**
- **Aerotowing**
- **Landouts and Local Terrain**
- **Radio Procedures**
- **Checkouts & Familiarization**
- **What to Wear?**
- **Accommodations, Food**
- **Summary**

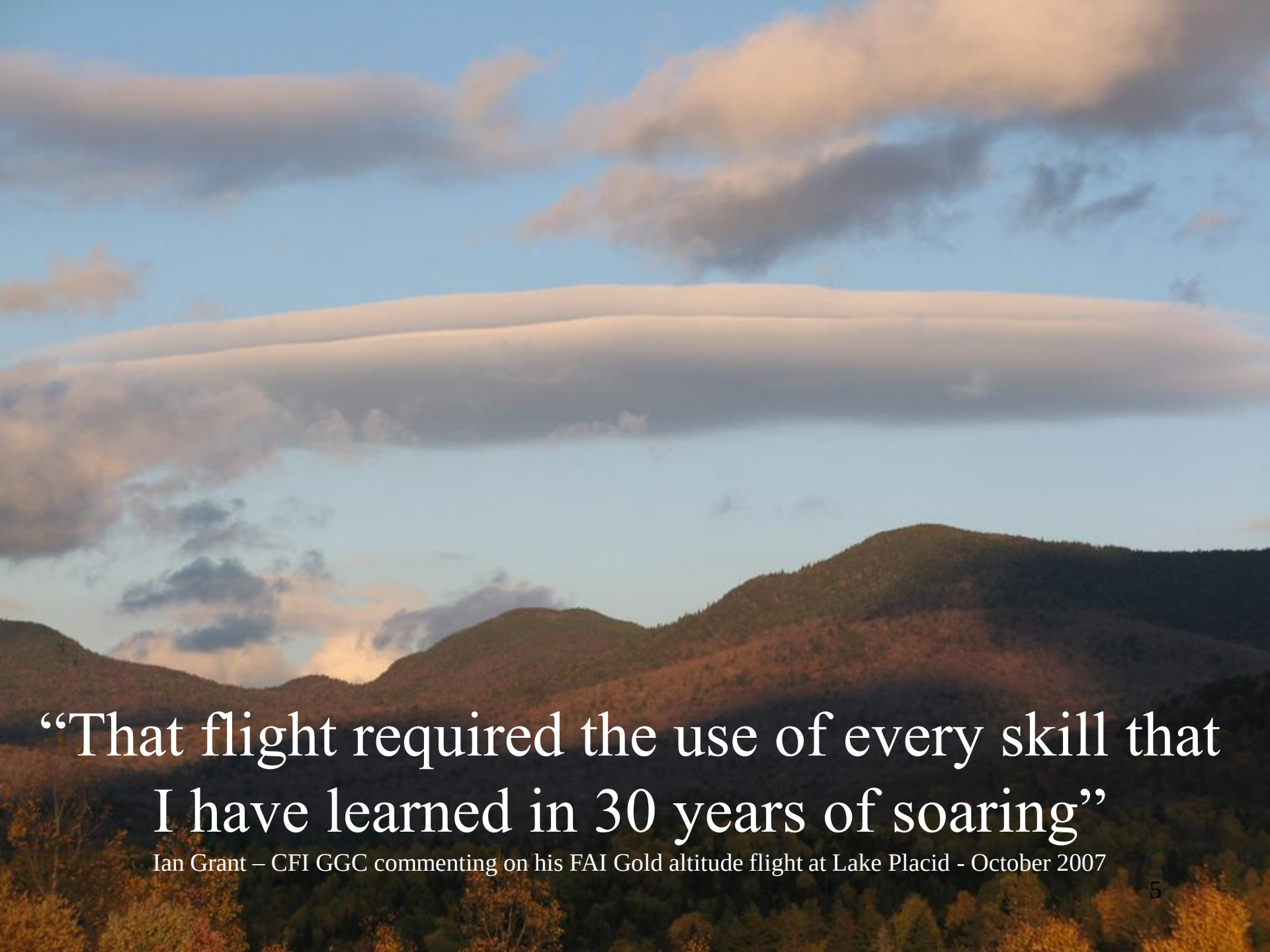
Be Aware…

• As an introduction to mountain wave flying in the High Peaks Region of the Adirondacks, certain salient points should be noted:

• Wave flying is dangerous -- one of the more dangerous activities that humans voluntarily engage in. With experience and care, the risks can be lowered, but not eliminated.

• Some aspects of safety in wave and mountain flying are presented here, but this is far from a complete discussion.

•Pilots should strive to develop the judgment that will keep them safe, understanding that mountains such as these regularly present conditions in which even excellent aircraft and skilled pilots cannot safely fly.



“That flight required the use of every skill that I have learned in 30 years of soaring”

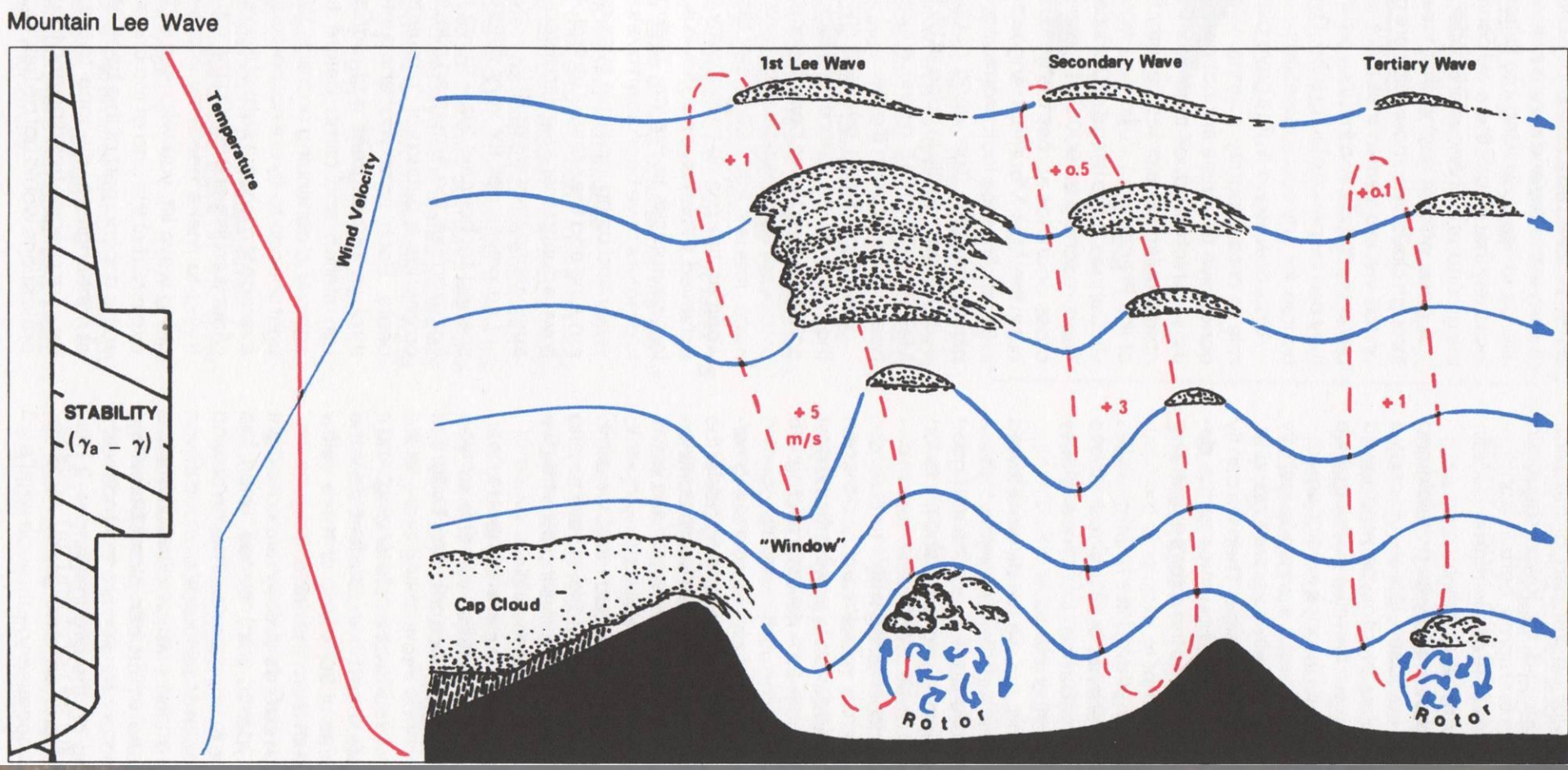
Ian Grant – CFI GGC commenting on his FAI Gold altitude flight at Lake Placid - October 2007

Mountain Wave Phenomena



- Mountain Wave: Lift is generated by stable air flowing over a mountain in the form of a standing wave.
- Will allow high altitude (20-30,000') flights up in the areas usually reserved for jet traffic.
- Mountain chains will allow high, fast and long distance flights.
- The current world distance record (3,000Km+) was flown primarily in mountain wave.

Mountain Wave Phenomena



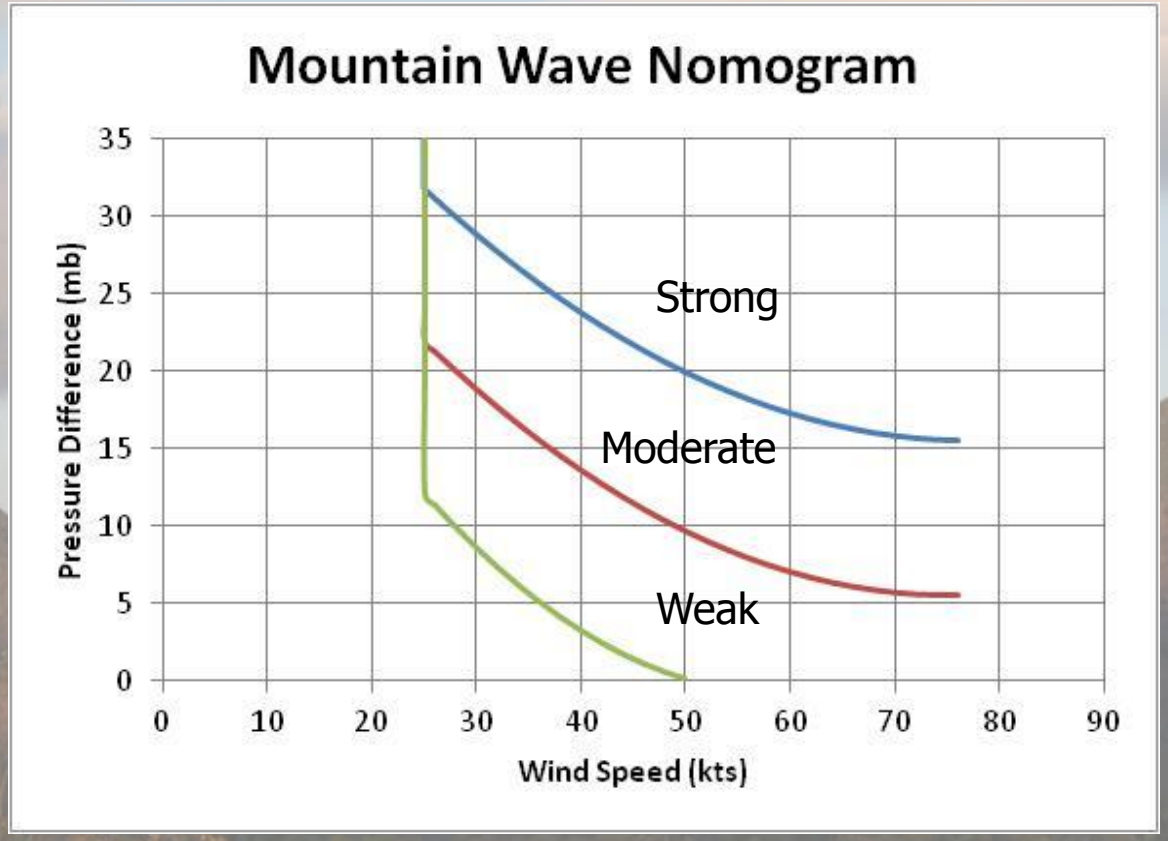
Time Lapse Lenticular – Oct. 2006

Flying Along a Lenticular

Graphic – Cross Country Soaring (Reichmann)

Mountain Wave Phenomena

This chart was developed as part of a joint study (United Airlines and the FAA - 1958) to try and develop a prediction tool for mountain wave phenomena.



Pressure difference is measured between an upwind weather reporting station and a downwind station.

Source: Technical note no. 127, *The Airflow Over Mountains, Research 1958-1972*, World Meteorological Organization, Geneva, Switzerland, 1973

Wave Cloud Formations

- Lenticular Clouds
- Fly the upwind edge of these clouds and visualize the lift.

From Above – Oct. 2006

- Rotor Clouds – avoid them if you can
- Usually have to tow through rotor to get to the wave.
- Straps TIGHT!

From Above – Oct. 2005

- Stratus wave "windows"
- Do not go above the layer unless you don't mind getting stuck above!
- Be alert and maintain visibility!

Ridge Wave Window

Whiteface Wave
March 2007

Satellite Shot of Wave
Sept. 2004

What is Intriguing About This Picture?

Hint: Compare all instrument readings (including PDA)

High Altitude & Your Aircraft

- True airspeed vs. indicated (Increases by ap[illegible] of indicated airspeed per 1000 ft)
- Straight & level stall speed [illegible] (stall is function of AOA not spe[illegible]
- Vne & Vra [illegible]dicated airspeeds as altitude increase[illegible]
- It is [illegible]ceed Vne or Vra at altitude!

So what is the True Air Speed (TAS) of the glider in the previous slide?

True Airspeed = 40 kts + (.02 * 40 kts * 15) = 52 kts (approx.)

High Altitude & Your Aircraft

Using what we now know…

ASW-24		
Altitude (ft)	Vne (kts)	Vra (kts)
0	151	110
5,000	137	100
10,000	126	92
12,500	121	88
15,000	116	85
17,500	112	81
20,000	108	79
22,500	104	76
25,000	101	73

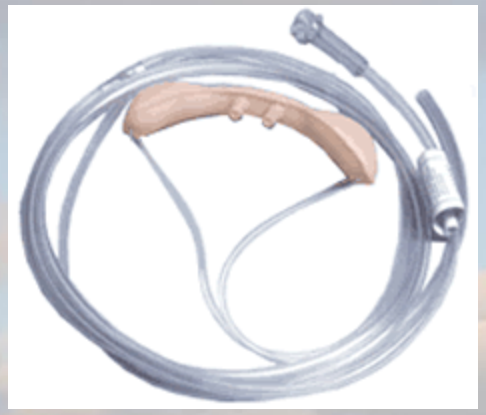
Puchacz		
Altitude (ft)	Vne (kts)	Vra (kts)
0	116	86
5,000	105	78
10,000	97	72
12,500	93	69
15,000	89	66
17,500	86	64
20,000	83	61
22,500	80	59
25,000	77	57

High Altitude & YOU!

- Effects of hypoxia start to be very noticeable above 10,000 ft.
- Do not spend more than 30 minutes between 10,000 ft and 12,000 ft without supplemental oxygen.
- A cannula system will provide sufficient oxygen up to 18,000 ft.
- A continuous flow mask system is required above 18,000 ft and will provide sufficient oxygen to 25,000 ft
- Oxygen refills available onsite.

Smokers and individuals in poor cardiovascular condition will likely notice hypoxic effects at lower altitudes !

High Altitude O2 Systems



- Cannuala system good to 18,000 ft

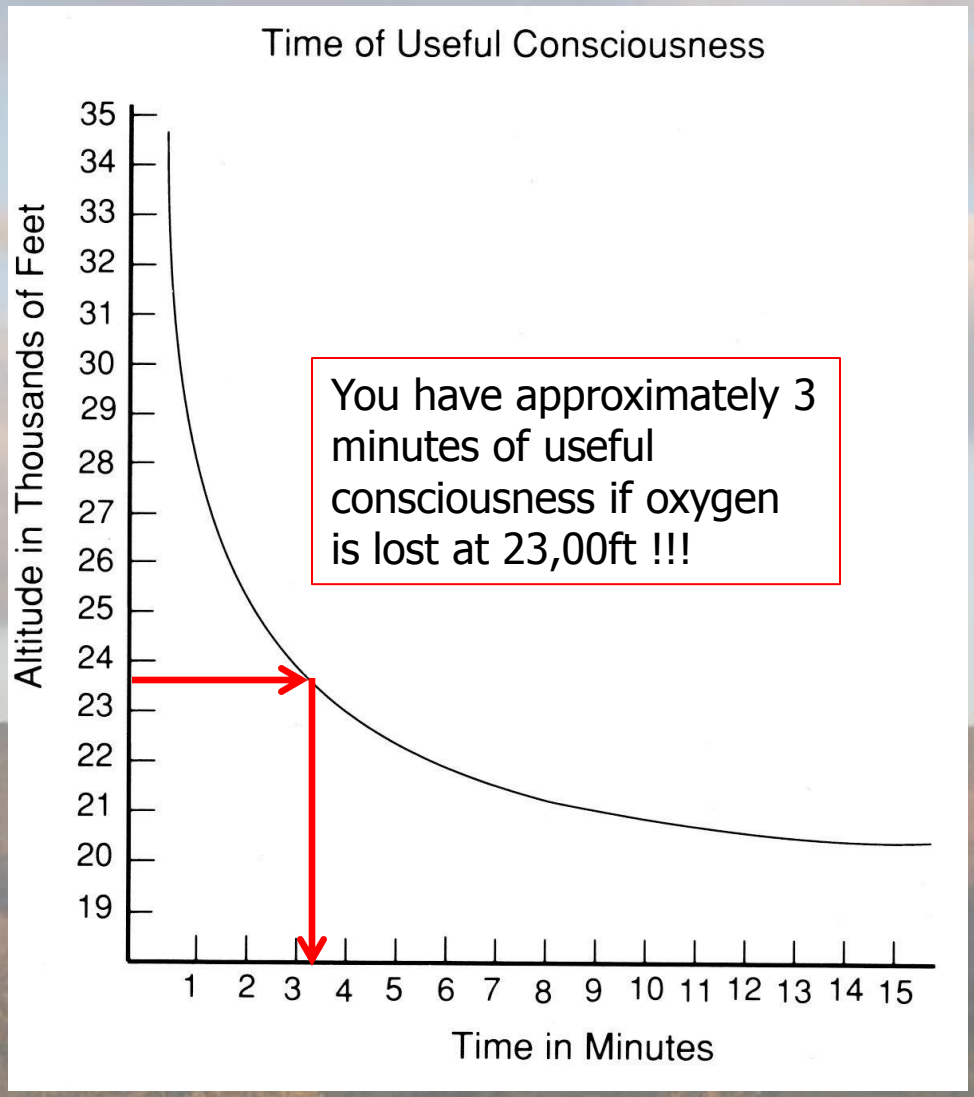
- Use correct scale on flow adjustment!

- Constant flow mask required 18,000 ft to 25,0000 ft.

- Pressure demand system required above 25,000 ft.

These systems are used in GGC club aircraft.

High Altitude Physiology

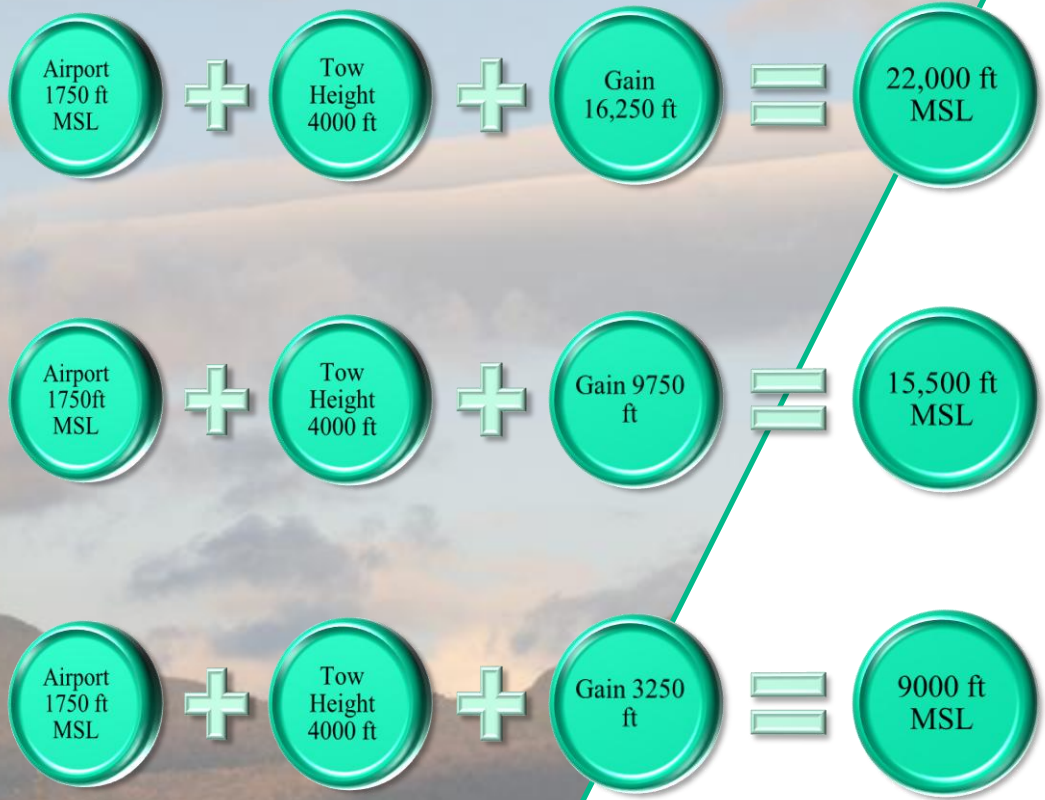


Symptoms of Hypoxia

- Increased breathing rate, headache, fatigue
- Light headed or dizzy sensations, listnessness
- Tingling, warm sensations or sweating
- Poor co-ordination, impairment of judgement
- Loss of vision or reduced vision, sleepiness
- Cyanosis (discolouration of the finger nails)
- Behavior changes, feeling of well being (euphoria)

Source: *Practical Wave Flying*, Mark Palmer, Lenticular Publishing, 1989

FAI Altitude Badge Requirements



Diamond

- 5000 m (16,250 ft) Gain

Gold

- 3000 m (9,750 ft) Gain

Silver

- 1000 m (3,250 ft) Gain

Airfield Elevation 1750 ft

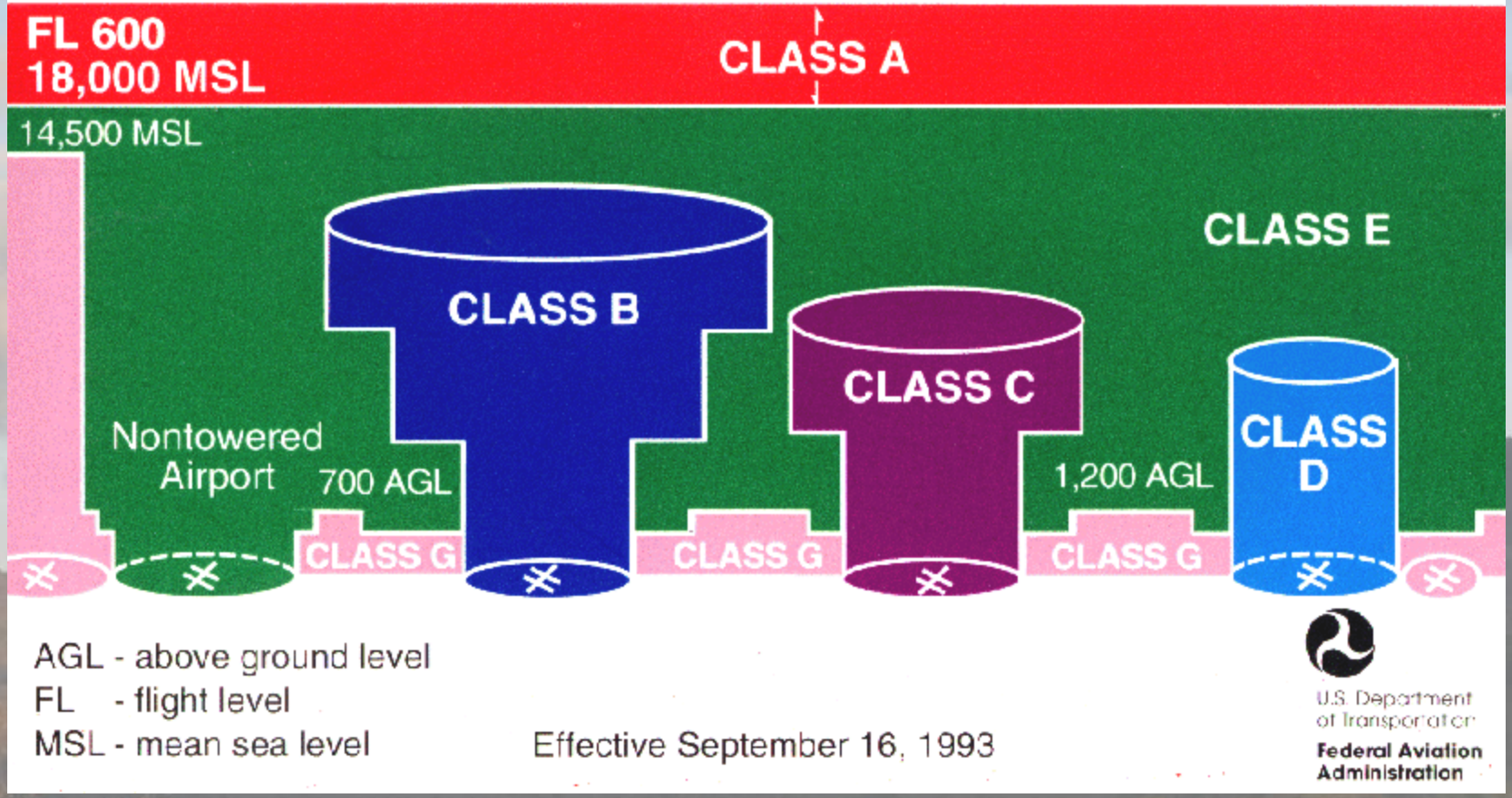
FAI Altitude Badge Requirements

- Ensure that your flight data recorder has the correct pilot name and glider entered.
- A calibration must be done within 2 years prior to the flight or within 60 days after the flight.
    - If there is sufficient margin, the FAI badge chairman may choose to forgo a calibration
- Role of the Official Observer (OO):
    - OO needs to verify that the recorder has been installed.
    - OO needs to supervise the downloading of the recorded data.
    - OO must run and validate the data security of the IGC file.
- FAI badge claim form and additional information can be found at www.sac.ca

Area Navigation & Related Information

- Get a US Montreal VFR chart (covers the LKP area) and study it. (Note the MOAs to the east of LKP)
- Get a GPS and know how to use it.
- Never predicate any aspect of your flight exclusively on a GPS.
- Keep your eyes out of the cockpit!
- Benign spiral dives: know and practice them, but never get into a situation where they need to be used.
- Late day flying – lighting may still be great at altitude but becoming dark in the valleys.
- Try to avoid thermal-shocking composite airframes.
- Pack (or buy) a small emergency kit.

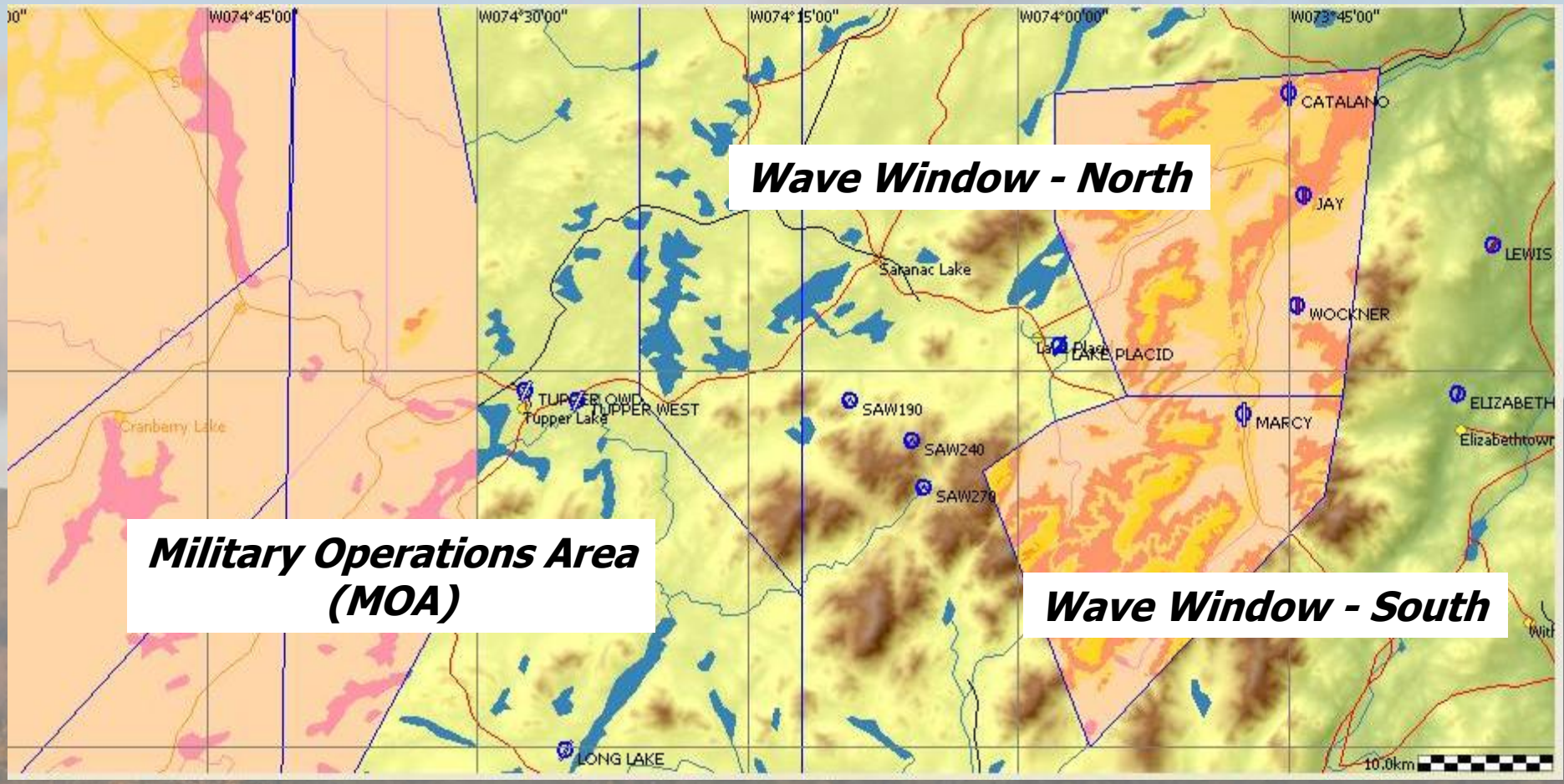
U.S. Airspace Classes at a Glance



Airspace - Boston ARTCC Agreement

- All pilots must read, understand and comply with the Letter of Agreement.
- Other than altitude restrictions, all requirements of VFR flight remain in force, including rules governing cloud clearance and visual separation from other aircraft.
- You must not be above FL 180 unless:
    - you know the airspace is open, when it closes, and the maximum altitude allowed
    - you remain within the limits of the Lake Placid Glider Area(s) and below the maximum altitude
    - you are monitoring 123.3 Mhz
- You must descend below FL 180:
    - by the agreed-on closing time each day
    - if you hear on 123.3 that a recall has been issued
    - if it has been more than 30 minutes since you last heard a confirmation that the airspace remains open

Airspace – Lake Placid Area




LKP Ground Operations
(Vehicles on Airport)
N
Runway Length 4200 ft
Airport Elevation 1747 ft
Trailer Tie Down &
Rigging Area
32
Image © 2007 New York GIS
© 2007 Europa Technologies
Google

Ground Operations
Launching

Launch - Outside

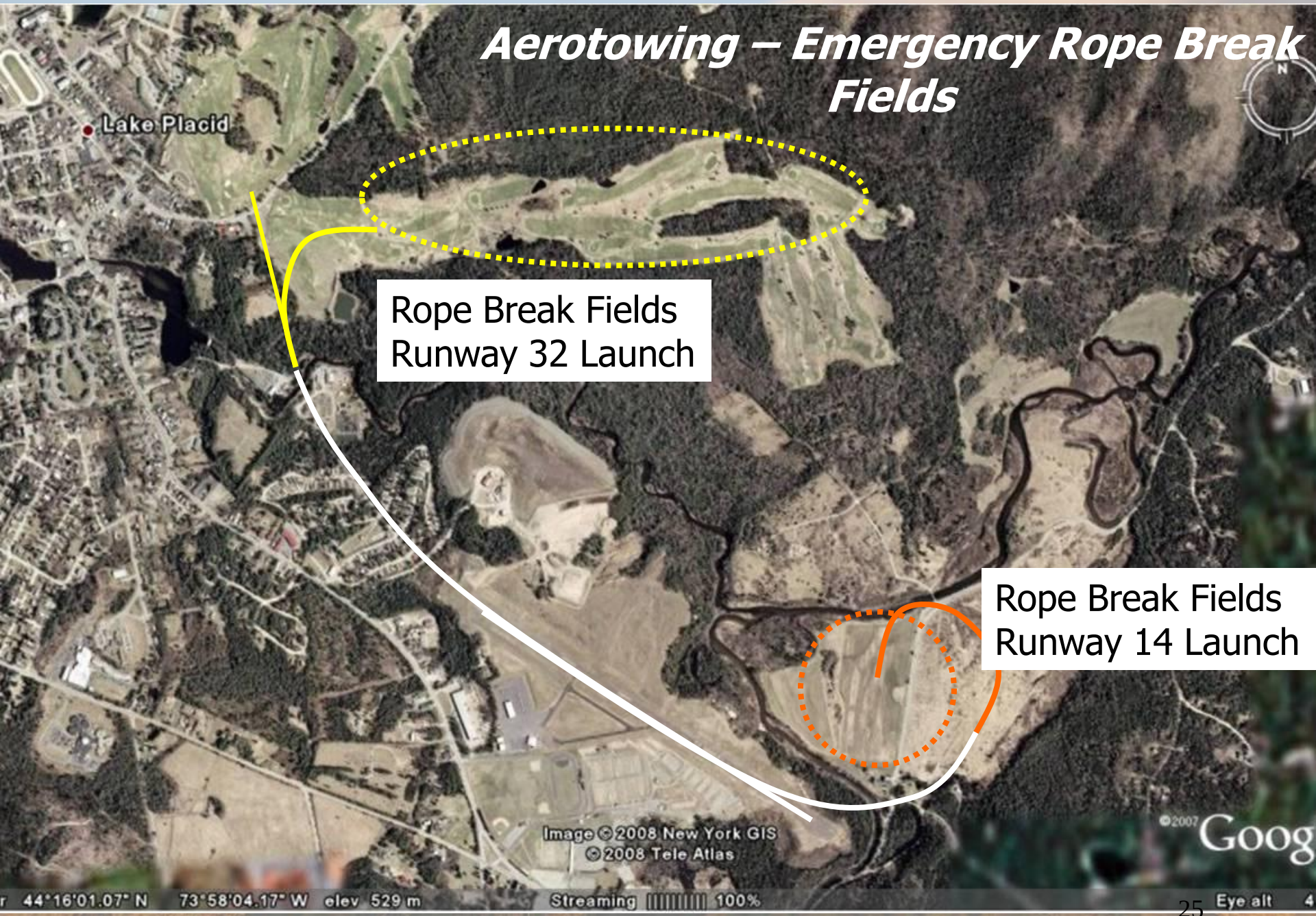
Position glider and tow plane on the launch apron with the tail dolly on.

- Pilot should be strapped in and ready to go
- Tow rope is connected to the glider and tow plane
- When the runway is clear, tow plane pulls glider onto active runway with a wing runner steering the glider into position
- Glider pilot to use wheel brake to keep the tow rope taut
- Once on the active runway, wing runner removes tail dolly from glider and proceeds with standard SAC launch procedure

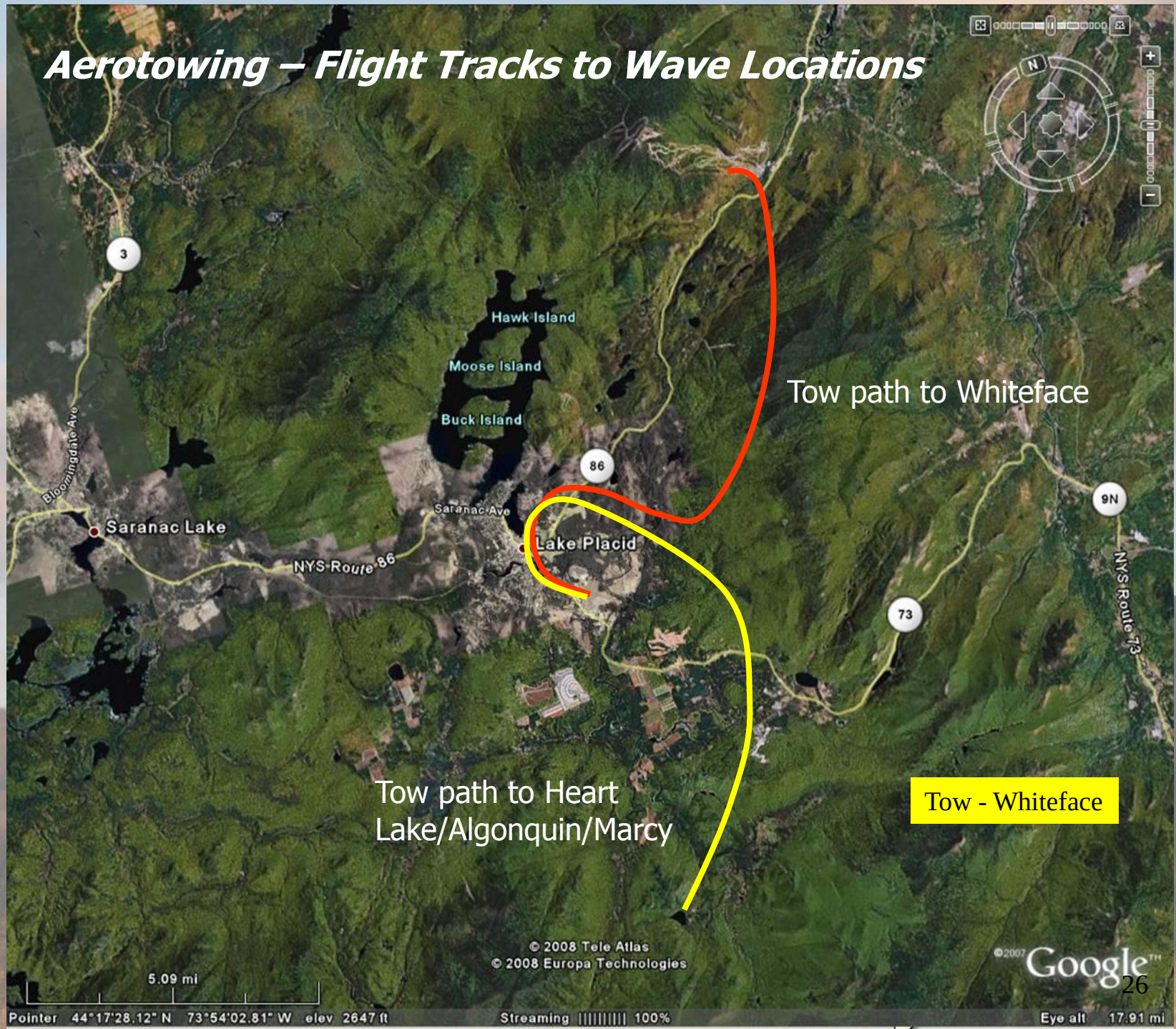
Aerotowing

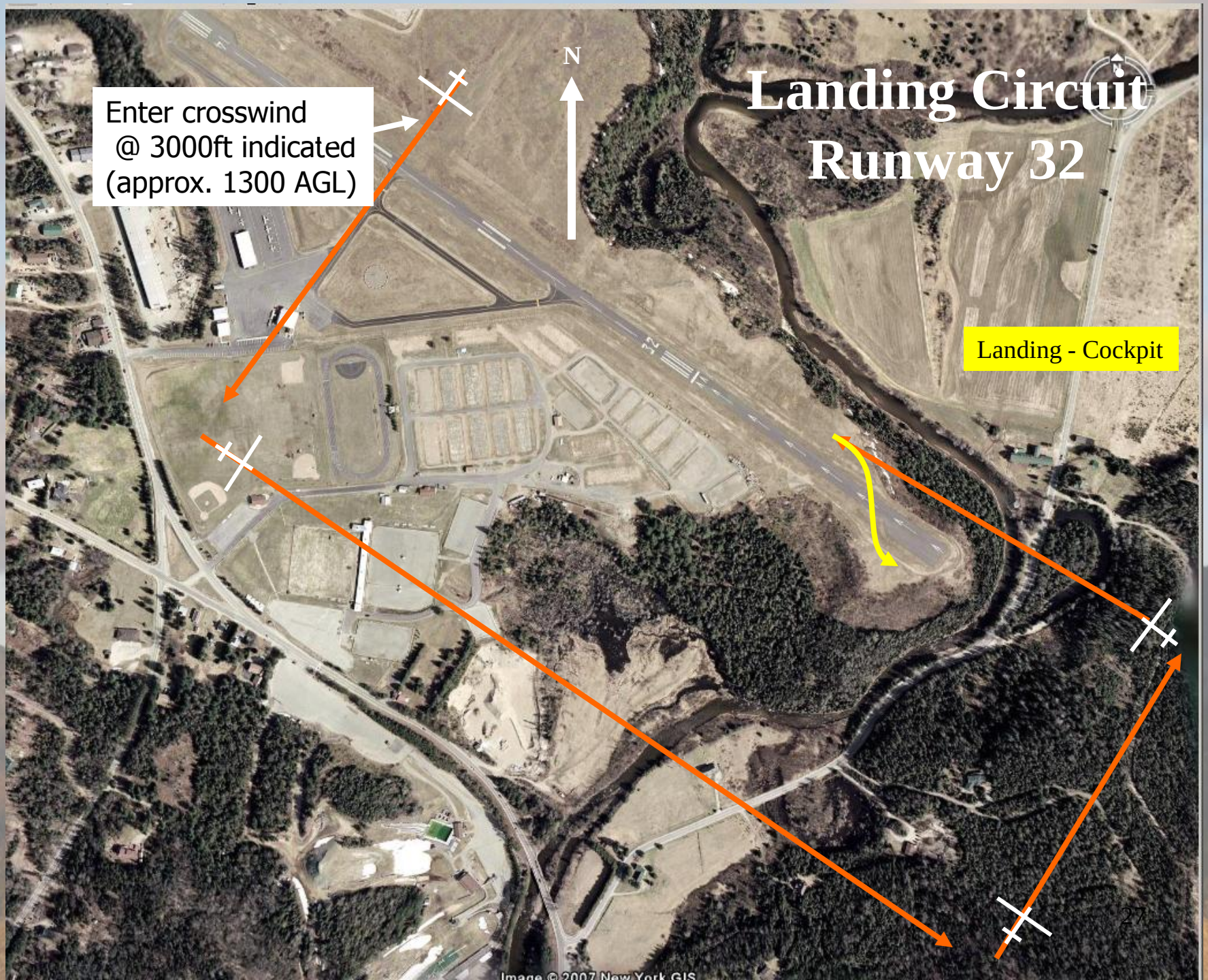
- Get in and be READY before tow plane is in the pattern
- Check radio with Tug pilot before taking position on runway.
- Tows are a min. of 3,000’ AGL (4 to 5000 ft AGL typical).
- Ensure that your straps are tight due to low level turbulence and possible rotor on tow
- Landing lights (stay on center line)
- The typical tow menu:
    - Whiteface, Heart Lake, Algonquin
- Maintain a heightened state of Situational Awareness.

Aerotowing – Emergency Rope Break Fields



Aerotowing – Flight Tracks to Wave Locations




Landing Circuit
Runway 32
N
Enter crosswind
@ 3000ft indicated
(approx. 1300 AGL)
Landing - Cockpit
Image © 2007 New York GIS

Radio Procedures

- Verify comms with tow plane prior to launch.
- Remain on 122.8 MHz on tow until release (LKP Unicom)
- Once clear and after post release checks, switch to 123.3 MHz.
- MONITOR 123.3 for wave announcements
- 5 nm inbound to land – switch back to 122.8 MHz and announce reg., type, position, intentions.
- If low (thermalling) or within 5 nm of LKP switch to LKP Unicom (122.8 MHz).
- Announce cross wind, downwind "landing on the grass", base and final.
- Lake Placid Ground (Glider Operations) will be monitoring 123.3 MHz.

Land Out Options

- KNOW YOUR OPTIONS!
- Be COMPLETELY familiar with them.
- Do **not** get trapped above an overcast layer
- Do not be reticent to fly downwind to exercise your options if conditions warrant.
- Situational Awareness at ALL times (map & GPS use, changing weather, traffic…).
- Downwind vs. upwind vs. slope…
- Final glide computers…??!! Don't count on them…

Local Terrain

Airports:

Airport	Code	Latitude	Longitude	Elevation	Bearing*	Distance*(nm)
Lake Placid	KLKP	44/16.0	73/57.72	1744	0.0	0.0
Marcy	NY29	44/13.25	73/47.47	990	111	7.85
Saranac Lake	KSLK	44/23.12	74/12.37	1660	304	12.7
Basin Harbor	B06	44/11.76	73/21.97	130	099	26.0
Schroon Lake	4B7	43/51.75	73/44.56	830	159	26.1
Plattsburg	KPLB	44/41.26	73/31.47	370	037	31.5
Ticonderoga	4B6	43/52.51	73/24.47	250	135	33.6

Landing Fields:

Field name	User name	Latitude	Longitude	Elevation	Bearing*	Distance*(nm)
Catalano	CATALA	44/26.0	73/45.0	851	042	13.5
Frontier Tn.	FRONTI	44/00.24	73/42.04	980	144	19.4
Jay	JAY	44/21.98	73/44.18	650	058	11.4
Wockner	WOCKNE	44/17.60	73/44.57	1500	080	9.56
Westport	WESTPO	44/09.41	73/25.83	100	106	24

Mountains and Turnpoints:

Name	User name	Latitude	Longitude	Elevation	Bearing*	Distance*(nm)
Algonquin	ALGONQ	44/08.59	73/59.21	5144	188	7.5
Dix	DIX	44/04.93	73/47.19	4857	146	13.4
Heart Lake	HEARTL	44/11.01	73/58.12	660	183	5.01
Marcy Peak	MAR-MT	44/06.77	73/55.45	5344	170	9.39
Noonmark	NOONMA	44/07.71	73/46.37	3356	135	11.6
Whiteface Ski Area	SKI-86	44/21.17	73/51.33	1150	041	6.92
Whiteface Peak	WHITEF	44/21.94	73/54.31	4867	022	6.43

* From Lake Placid Airport

- LP airspace and airfield coordinates can be found on the "Procedures" page of the GGC website.
- Try flying the area using the flight simulator that is embedded in Google Earth (fly the Cirrus not the F-16!).
- Flying the area in a simulator has helped many pilots become familiar with the area before actually flying there!

Local Terrain

- Flights near peaks and people…

• ***91.119 Minimum safe altitudes: General.***

Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

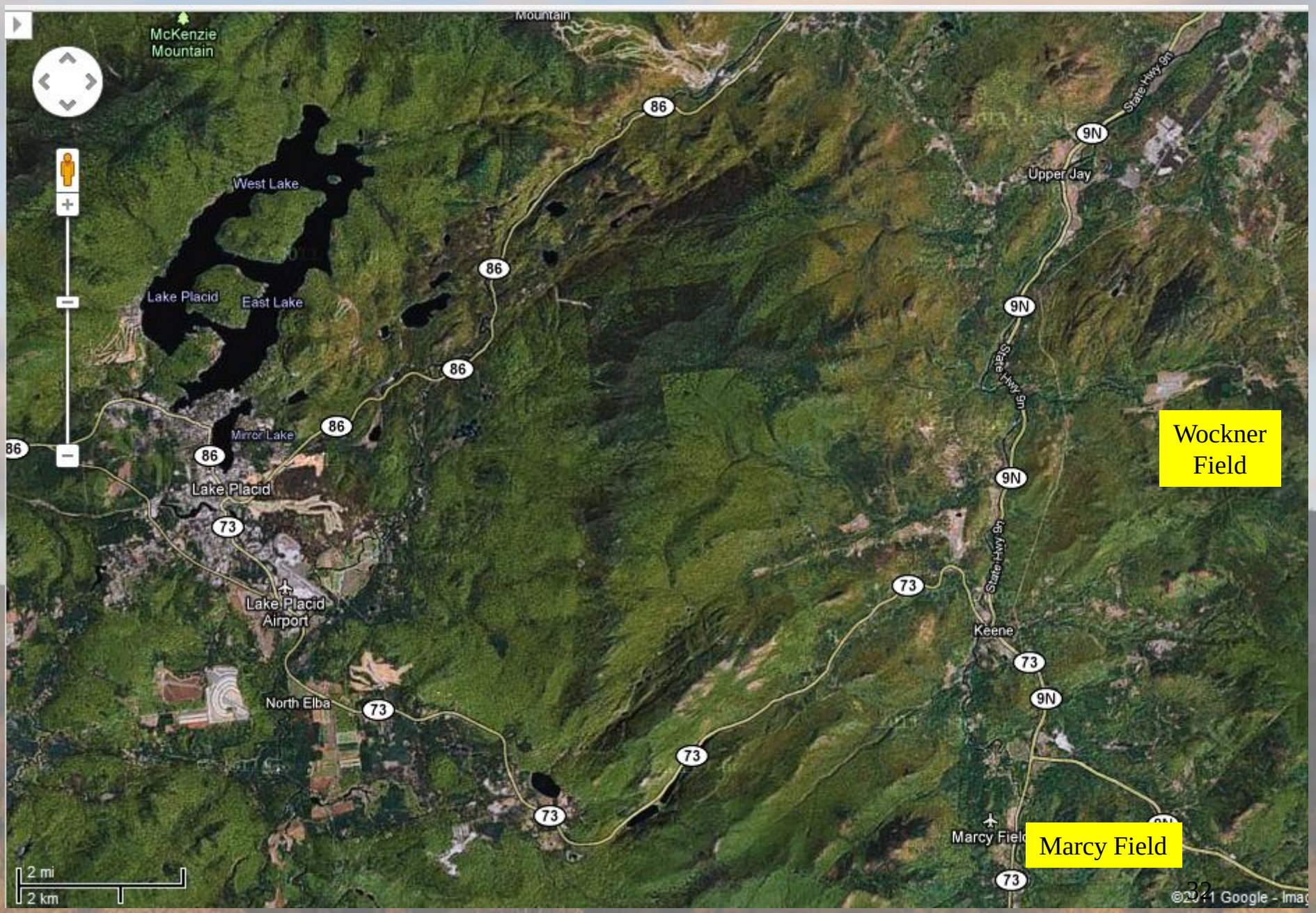
(a) Anywhere. An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.

(b) Over congested areas. Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

(c) Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

• ***7-4-6. Flights Over Charted U.S. Wildlife Refuges, Parks, and Forest Service Areas***

b. Pilots are requested to maintain a minimum altitude of 2,000 feet above the surface of the following: National Parks, Monuments, Seashores, Lakeshores, Recreation Areas and Scenic Riverways administered by the National Park Service, National Wildlife Refuges, Big Game Refuges, Game Ranges and Wildlife Ranges administered by the U.S. Fish and Wildlife Service, and Wilderness and Primitive areas administered by the U.S. Forest Service.


McKenzie Mountain
West Lake
Lake Placid
East Lake
Mirror Lake
Lake Placid
Lake Placid Airport
North Elba
Upper Jay
Keene
Marcy Field
Wockner Field
Marcy Field
86
9N
73
State Hwy 9n
2 mi
2 km


Catalano Airfield
Jay Field
Bonnieview Ave
Co Hwy 19A
Bonnieview Rd
Catalano Airfield
Lake Eaton
Wilmington
Jay
9N
86
©2011 Google - Imagery ©2011 Cnes/Spot Image, DigitalGlobe, GeoEye, USDA Farm Service Agency, Map data ©2011 Google - Terms of Use

Checkouts and Familiarization

- Each pilot wishing to fly solo at Lake Placid (club or private glider) must:
  - Have a bronze badge or be checked out for cross country by our CFI and;
  - Have an area familiarization flight in a two seat glider with a qualified LKP checkout pilot (not an annual requirement)
- It is also *strongly* suggested that "new" pilots to the area also book a local tour flight with the airport FBO. A 45 minute flight allows for a flyover of most of the emergency landing fields in the area. Cost is very reasonable (expect to pay $40 to $60 a head)
- A driving tour of the local emergency airfields will be held early during the fly week. All are invited to come along. It finishes at the NoonMark diner in Keene Valley – home of legendary pies!

What to Wear…What to Wear…

(for men too…)

- Ground temperatures can vary from freezing to +25 C on any given day
- Be prepared for the cold when flying. At altitude temperatures can drop to below -20 C. (-29 C on my diamond climb @23,300 ft)
- Hat, gloves (accessible), warm shoes/boots (still have to use rudder pedals).
- Long johns etc.

A Typical Day

- 9:00 a.m. (or so) rigging.
- If blowing hard at first light… Why are we not already in the air?
- Gliders marshaled to launch area.
- Launch the sniffer!
- Legal day vs. light in the valley (airport)
- Batteries to charge station or….
- Lake Placid Ground on call at all times

Lake Placid Safety – Incidents (2009-2013)

2009	Low Return from Sentinel Range
2009	Gear Collapse on Landing
2010	Miscommunication/Poor Signalling During Launch Operations (Multiple)
2010	Gear Up Landing
2010	Gear Up Landing
2010	Near Gear Up Landing
2010	Low Return from Sentinel Range
2010	Near Collision with Runway Threshold Lights
2010	Smoking Near Oxygen Refilling Station
2010	Runway Incursion - Pedestrian
2010	Runway Light Crushed
2011	Tail Wheel Faliure
2011	Spark Plug Failure
2012	Gear Up Landing
2013	Low Flights Over High Peaks
2013	Low Level Release from Tow
2013	Low Return from Sentinel Range (x2)
2013	Excessive Vehicle Speed During Ground Operations
2013	Runway Light Crushed
2013	Tail Wheel Faliure
2013	Glider Wing Pulled Through Brush

Accommodations

- Numerous bed and breakfasts
- Schultes Family Lodge (www.schulteslodge .com) Good rates of $48 - $65 double occupancy with continental breakfast served, 131 seconds driving time (approx.) from the airport. Tell'm you are "one of the glider folks". Phone: (518) 523-3532 to reserve.
- Tent / car / hammock / or sleep under a trailer on the airfield (million star hotel)
- Puchacz trailer can sleep 8 for free!

Ground Based Entertainment, Food & Stuff

- Only the best watering holes and feeding troughs in upstate NY are found in Lake Placid
  - Lisa G's good food, near airport, outside patio
  - Chinese buffet in Saranac Lake
  - NoonMark Diner in Keene Valley after the emergency field road tour…
- Movie theatre on main street near bandshell park
- Bowling (Bowl Winkles) on Main St.
- Hiking – some of the best trails in N. America

Closing Remarks

- You are a guest in another country flying a foreign registered aircraft according to the regulations of that country (in USA, all radio comms in English please)
- Check to verify that you have sufficient health/accident insurance coverage that will cover your flying in the US.
- If you have questions - ask
- Enjoy soaring, unlike anything you have come to know, in one of eastern North America's most beautiful playgrounds. A facet of the sport to be explored and enjoyed. Fly High – Fly Safe.
- Thanks to Bob Katz for supplying the core material for this briefing

Marcy Airfield (looking North)

- Elevation 900 ft
- Runway 36-18
- Smooth grass
- Very turbulent circuit when wave is active
- Use this field if caught behind Sentinel Range or Mt. Marcy

Wockner Field (looking East)

- Elevation 1500 ft
- Hayfield
- Land E to W or S to N due to slope
- Turn east from Rt #9 onto Styles Brook Rd. to access

Wockner Field (looking South)

- Elevation 1500 ft
- Hayfield
- Land E to W or S to N due to slope
- Turn east from Rt #9 onto Styles Brook Rd. to access

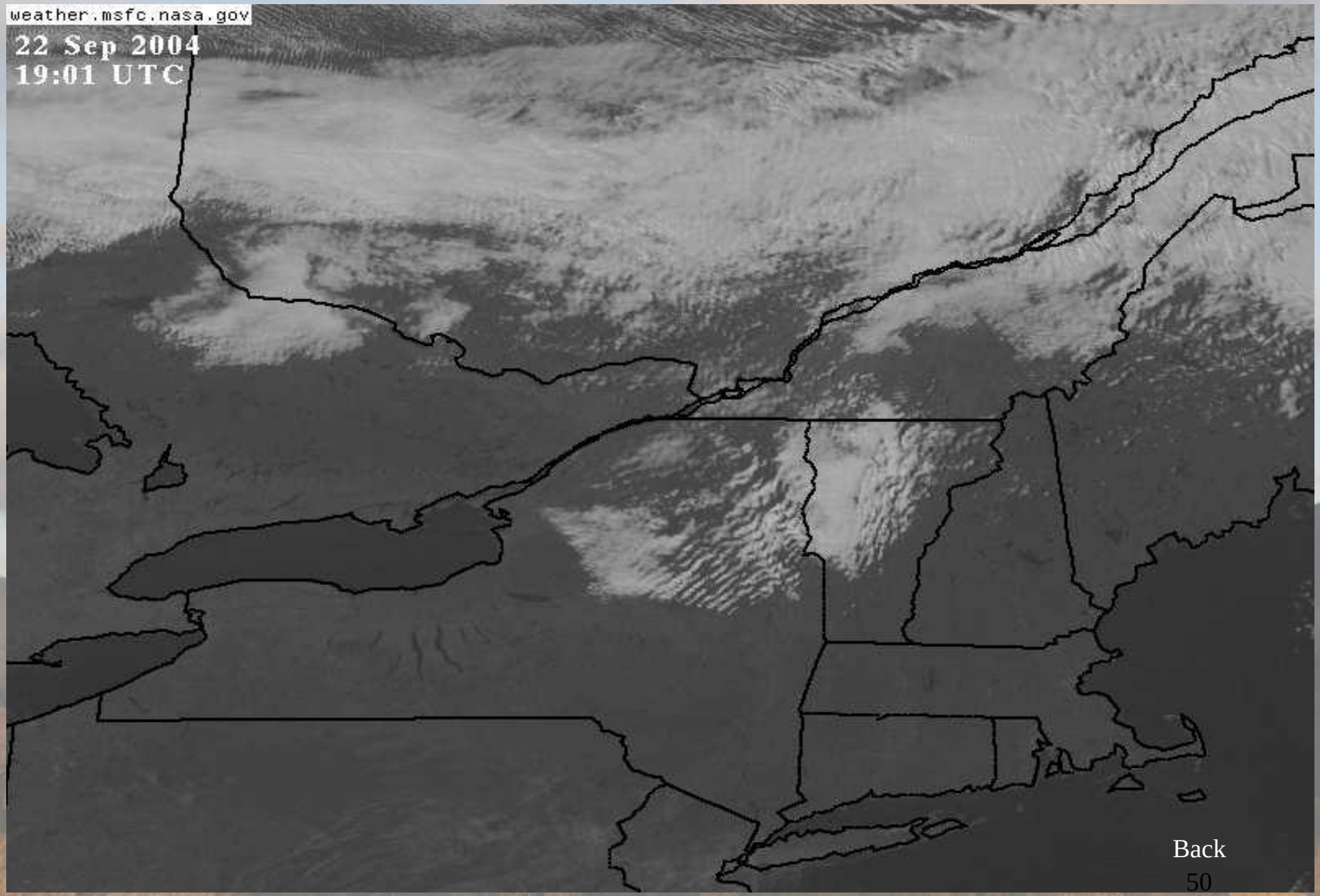
Jay Field

- Elevation 650 ft
- Grass oriented 23-05
- Very turbulent circuit when wave is active

Catalano Airfield

- Elevation 850 ft
- Runway 22-04
- Smooth grass
- Very turbulent circuit when wave is active


Summit Express
Summit Quad


weather.msfc.nasa.gov
22 Sep 2004
19:01 UTC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