



Long or “Extreme” Flights

How to plan for long or unusual flights in a hot air balloon



Why Bother?

The path to success is to take
massive, determined action.

Tony Robbins



Discussion Topics

- Value of different flights
- Preparations
 - Airspace
 - Weather
 - Equipment
 - Crew
- Flight Characteristics
 - Physiology
 - In Flight
 - Landing
 - Recovery



Value of Different Flights

- Reminder of “Back to Basics”
 - Read a Sectional
 - Read your Flight Manual
- Active Flying and Learning
- Reignite that Spark



Preparation - Airspace

- You own a sectional, right?
- We all remember how to read it, right?
- Inventory for twice your goal distance
 - Class D, C, B
 - MOA, Restricted Areas, Alert Areas
 - Telephone and Radio Contacts
- Google Earth
 - Airspace from Chartbundle
 - Range Rings from GPS Visualizer
- Go/No-Go weather parameters – speed / direction



Preparation - Airspace

Assumptions

- 1 Start at or near COS Airport. This might include the Hliday Inn lot or the Trade Zone areas.
- 2 Airspace Specialist at Denver Center - Frank Azzaro (303) 651-4533 or Traffic Mgmt at 303-651-4202
- 3 Field Elevation about 6200ft MSL
- 4 Limit flight to direction 045° to 135° to avoid Denver and allow for easier landings
- 5 Goal is 100 miles
- 6 About 3.5 hr capacity in fuel
- 7 Predict about 40 mph winds at altitude

Airspace Issues to note within 200 Statute Miles

Num	Distance	Bearing	Name	Description	Altitude	Time of Use	Controller	Freq.	Suggestion
1	0	090	COS Airport		Sfc to 10.2K MSL (5 Mile) 7500 to 10.2K MSL (10 Mile)	Continuous	COS Tower	119.9	Call COS Tower before Launch
2	9	100	R2602	Schriever AFB	Sfc to 1K AGL (About 7400 MSL)	Continuous	Denver Center	N/A	Fly Over
3	21	090 - 135+	A639A	557 Squadron Flying Training	3000 AGL to 12K MSL	SR-SS Mon - Fri Excl Holiday	AFA	N/A	Call AFA Before Launch, Fly Through
4	25	045 - 080	A639B					N/A	
5	90	120 - 135+	Two Buttes MOA - LOW		300 AGL - 10K MSL	NOTAM Excl 2200 - 0700	Denver Center	128.4	Permission from Denver CTR
			Two Buttes MOA - HIGH		10K - 18K MSL				
6	90	080 - 100	Cheyenne MOA - LOW		300 AGL - 9K MSL	SR-SS Tue - Sat	Denver Center	132.5 133.4	Permission from Denver CTR
			Cheyenne MOA - HIGH		9K - 18K MSL				



Google Earth is Your Friend

- Free application
- Platform independent (PC, Mac, mobile...)
- GPS Coordinates (any format)
- Satellite Imagery
- Import and Export capability
- Easy to Use



Google Earth is Your Friend

Plug-ins to consider

– Aviation Charts

<http://www.chartbundle.com/charts/kml/sec.kml>



UTM Grid

http://www.nearby.org.uk/google/grid_utm.kmz.php?

GPS Visualizer – Rings, Upload, etc.

<http://www.gpsvisualizer.com/>



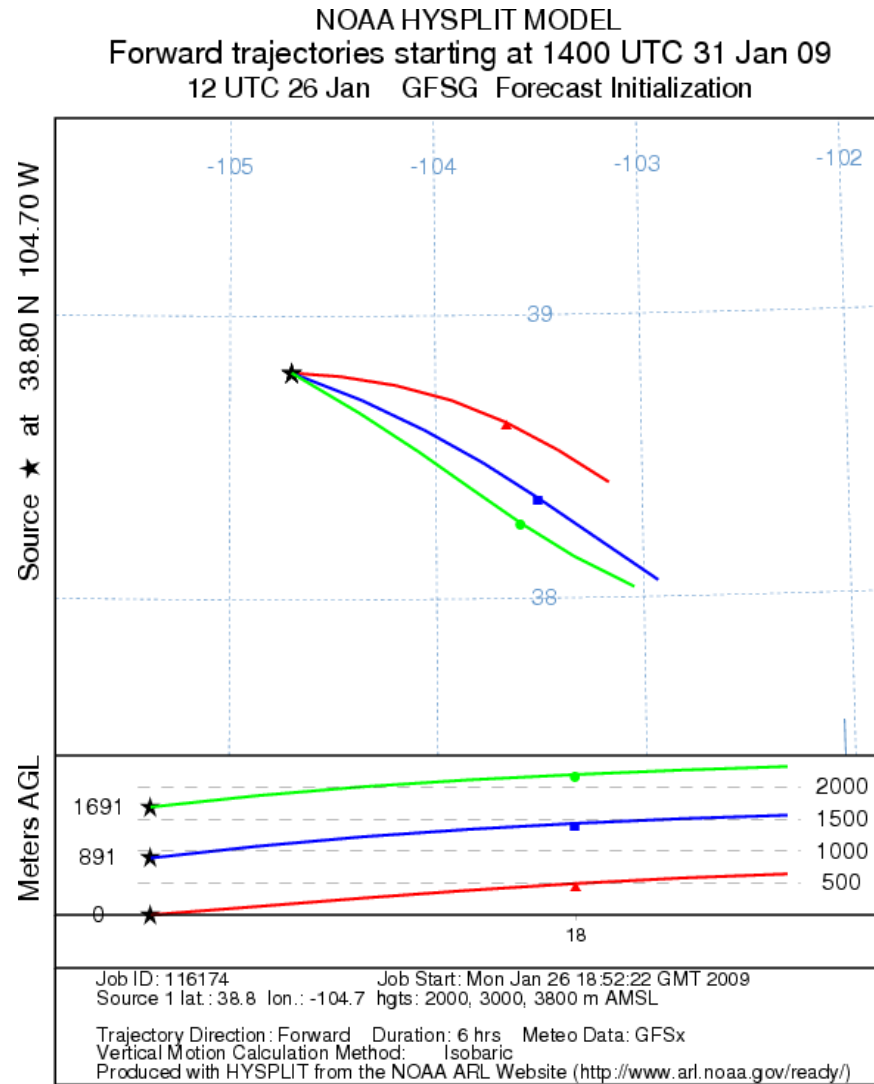
Preparation - Weather

- Get a weather guy on your team
- Look up your regular launch forecasts
- Run a HySplit trajectory – www.noaa.gov
 - Forecast launch and landing weather
- Run a Skew-T / Log-P
 - Determine Cloud levels and speeds
 - Look up to ~14,000ft or 600mb w/o Oxygen
 - Look up to ~18,000ft or 500mb w/ Oxygen



Preparation - Weather

- HySplit

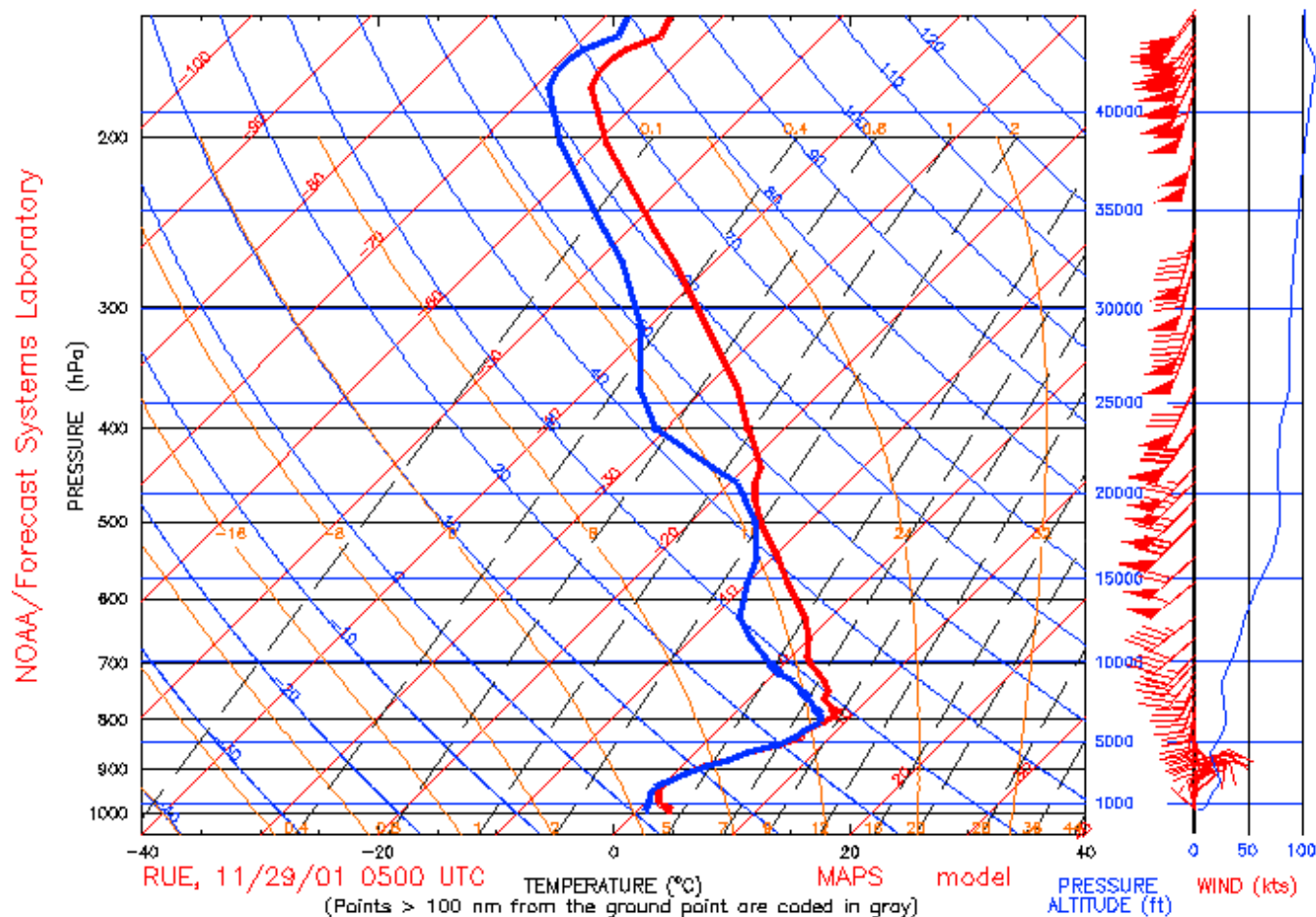




Preparation - Weather

MAPS sounding for Russellville(asos), AR/US
5 UTC, 29-Nov-2001

- Skew-T





Preparation - Equipment

- In Balloon
 - Crew and Aircraft Radios
 - GPS and APRS or Satellite Tracker
 - Hand Warmers (for Batteries)
 - Paper Maps (Sectionals and Atlas)
 - Note Pad
 - Colored Pens for maps
 - Extra Fuel – Inflation and/or Flight – Read your Manual

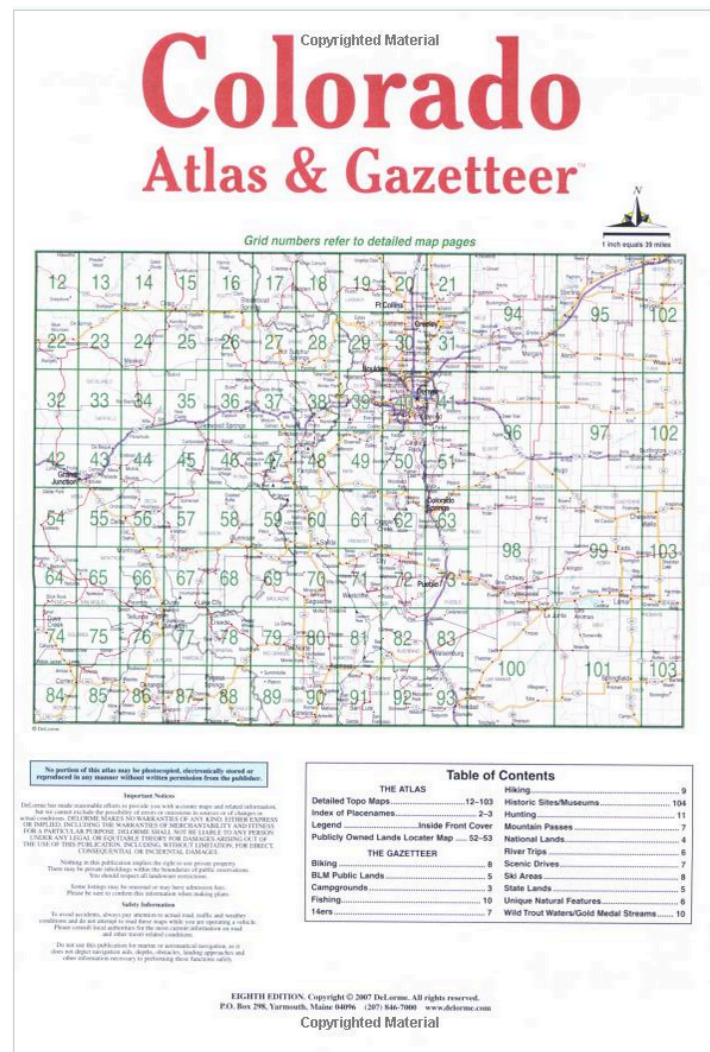
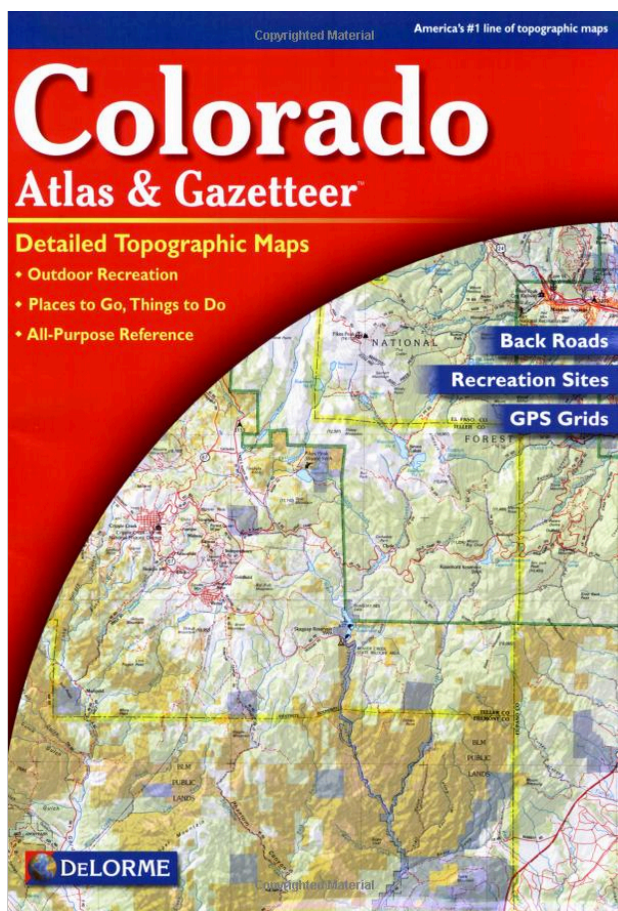


Preparation - Equipment

- In Balloon (for Pilot)
 - Cell Phone and Camera
 - Hand Warmers (for Body)
 - Drinking Water, Food, and Sun Hat
 - Kite and Flare Gun for recovery
 - Paper List of Phone Numbers
 - Oxygen
 - Cash Money

Preparation - Equipment

- Paper Map – Buy 2





Preparation - Equipment

- In Chase Vehicle
 - Crew Radios
 - Cell Phone and Camera
 - GPS (Same settings as balloon)
 - Drinking Water
 - Paper Maps (Same Atlas as balloon)
 - Paper Phone List
 - Full Tank of Gas
 - Cash Money



Preparation - Crew

- Driver – Familiar with the vehicle
- Navigator – Can read a map and GPS
- Home Base – Central Phone Contact
- Keep it small – patience and mobility
- Plan ALL DAY
 - Inflate – 1 hr
 - Fly – 3 hrs
 - Retrieval – 1 hr
 - Drive Home – 2 hrs



Flight Characteristics - Physiology

- Cold
- Hypoxia
 - Your symptoms?
 - As low as 10,000ft
- Fear of Heights
 - Very common above about 6,000ft AGL
- Depth Perception
- Bathroom Stops

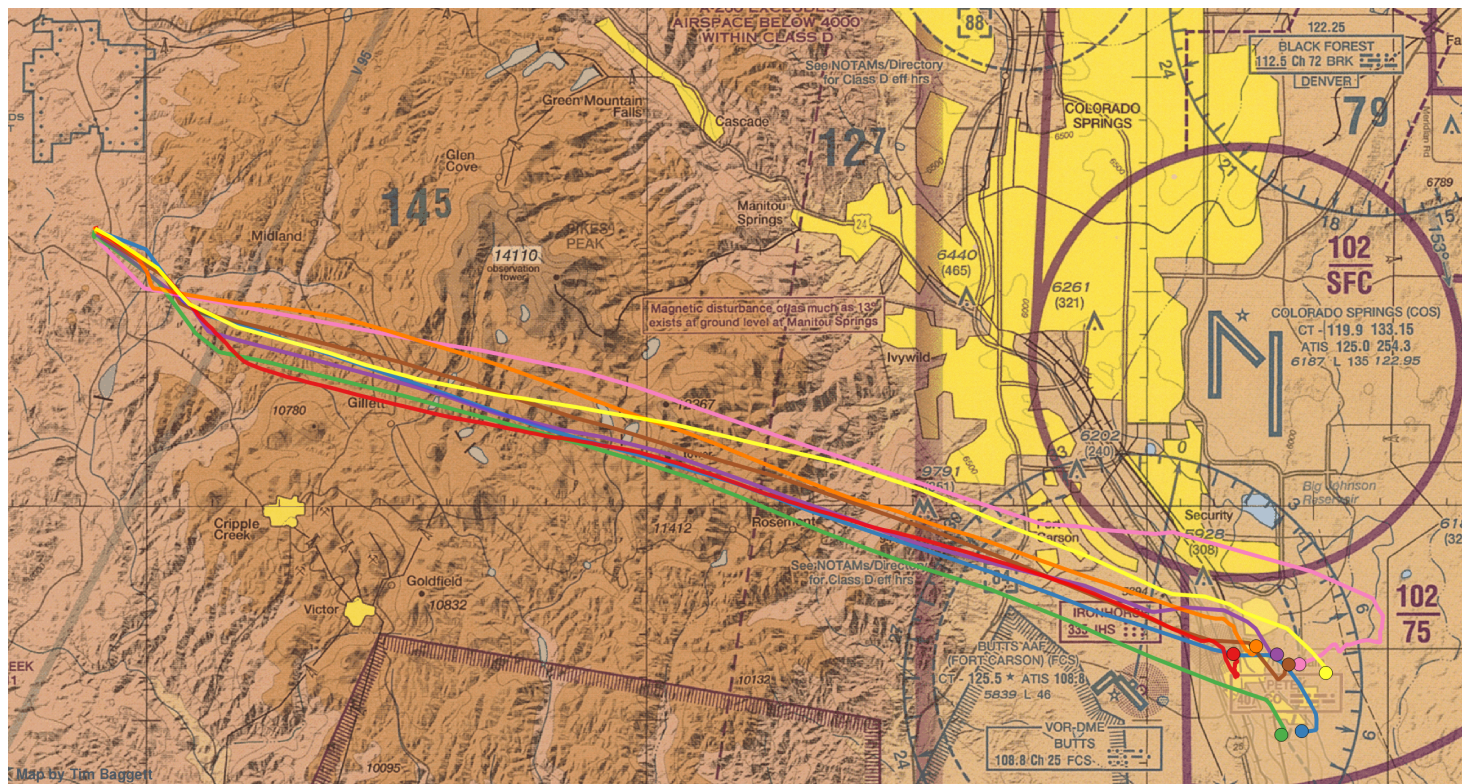


Flight Characteristics – In flight

- Take Notes
 - Regular Intervals (call the crew?)
 - Fuel Consumption
 - Location, Altitude, Speed
- Fuel Management
 - Use every drop
 - Can you change tanks in the air?
- Wind Shears

Flight Characteristics – In flight

- Enjoy the View



Flight Characteristics – In flight

- Cue the [Video](#)



Dave Bair - Long Flights



Flight Characteristics – Landing

- Plan Fuel for Landing
- ATIS or AWOS?
- Depth Perception – Stair Step
- Expect Wind – 15-20kts is normal
- Aim for
 - Cattle
 - Windmills
 - Powerlines



Flight Characteristics – Recovery

- Cell phones won't work
- Medical and Safety are priority
- Equipment Recovery can be long and slow
- Call Home Base if possible
 - Texting (SMS) is slightly better with poor signal
- Fly your kite
- Hunker Down...this is fun, remember?



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Questions?



Thank You!

Slides found at

<http://davebair.co/bfa/>

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